

Türk Akademik
Yayınlar Dergisi

TAY Journal

TÜRK AKADEMİK YAYINLAR DERGİSİ (TAY Journal)

Uluslararası Hakemli Dergi / International Peer-Reviewed Journal

ISSN: 2618-589X



Cilt 7, Sayı 3, Yıl 2023

Volume 7, Issue 3, Year 2023

Chief Editor

Prof. Dr. Bayram TAY

Editors

Assist. Prof. Dr. Murat BAŞ / Assoc. Prof. Dr. Michael HAMMOND

Türk Akademik Yayınlar Dergisi, eğitim bilimleri alanında çevrimiçi (online) olarak yılda iki kez Türkçe ve İngilizce dillerinde makaleler yayımlamaktadır.

TAY Journal publishes articles in Turkish and English languages twice a year, online in the field of educational sciences.



+90 (386) 280 51 77



editortayjournal@gmail.com
infotayjournal@gmail.com



<http://tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>



<https://twitter.com/tayjournal>



[tayjournal_2618_589X](https://www.instagram.com/tayjournal_2618_589X)

Türk Akademik Yayınlar Dergisi (TAY Journal)

Volume 7, Issue 3, Year 2023

Cilt 7, Sayı 3, Yıl 2023

Owner

Prof. Dr. Bayram TAY

Sahibi

Prof. Dr. Bayram TAY

Chief Editor

Prof. Dr. Bayram TAY
Kırşehir Ahi Evran University- Türkiye

Baş Editör

Prof. Dr. Bayram TAY
Kırşehir Ahi Evran Üniversitesi-Türkiye

Editors

Assist. Prof. Dr. Murat BAŞ
Kırşehir Ahi Evran University-Türkiye
Assoc. Prof. Dr. Michael HAMMOND
The University of Warwick – United Kingdom

Editörler

Dr. Öğr. Üyesi Murat BAŞ
Kırşehir Ahi Evran Üniversitesi-Türkiye
Doç. Dr. Michael HAMMOND
The University of Warwick-Birleşik Krallık

Editorial Board

Prof. Dr. Todd S. HAWLEY
Kent State University- ABD
Prof. Dr. Timothy RASINSKI
Kent State University-ABD
Prof. Dr. Muhittin ÇALIŞKAN
Necmettin Erbakan University- Türkiye
Prof. Dr. Carlos HERVÁS-GÓMEZ
University of Seville- Spain
Assoc. Prof. Dr. Aleksandra MIHAJLOVIĆ
University of Kragujevac-Serbia
Assoc. Prof. Dr. Haktan DEMİRCİOĞLU
Hacettepe University- Türkiye
Assoc. Prof. Dr. Loredana IVA
National University of Political Studies and Public
Administration-Romania
Assoc. Prof. Dr. Mevlüt AYDOĞMUŞ
Necmettin Erbakan University-Türkiye
Dr. Anisoara DUMİTRACHE
University of Bucharest-Romania
Dr. Michele BERTANİ
University of Verona-Italy

Editör Kurulu

Prof. Dr. Todd S. HAWLEY
Kent State Üniversitesi- ABD
Prof. Dr. Timothy RASINSKI
Kent State Üniversitesi-ABD
Prof. Dr. Muhittin ÇALIŞKAN
Necmettin Erbakan Üniversitesi-Türkiye
Prof. Dr. Carlos HERVÁS-GÓMEZ
University of Seville- İspanya
Doç. Dr. Aleksandra MIHAJLOVIĆ
Kragujevac Üniversitesi-Sırbistan
Doç. Dr. Haktan DEMİRCİOĞLU
Hacettepe Üniversitesi- Türkiye
Doç. Dr. Loredana IVA
National University of Political Studies and Public
Administration-Romanya
Doç. Dr. Mevlüt AYDOĞMUŞ
Necmettin Erbakan Üniversitesi-Türkiye
Dr. Anisoara DUMİTRACHE
University of Bucharest-Romanya
Dr. Michele BERTANİ
University of Verona-İtalya

Language Editor

Assoc. Prof. Dr. Michael HAMMOND
The University of Warwick – United Kingdom

Dil Editörü

Assoc. Prof. Dr. Michael HAMMOND
The University of Warwick – United Kingdom

Graphic-Design

Assist. Prof. Dr. Sevgi KAYALIOĞLU
Ankara Hacı Bayram Veli University- Türkiye

Grafik ve Tasarım

Dr. Öğr. Üyesi Sevgi KAYALIOĞLU
Ankara Hacı Bayram Veli Üniversitesi- Türkiye

Contacts

Research Assistant Eylem ÇOBAN
Kırşehir Ahi Evran University- Türkiye
Nazire ÇİÇEK
Kırşehir Ahi Evran University- Türkiye

İletişim

Araş. Gör. Eylem ÇOBAN
Kırşehir Ahi Evran Üniversitesi- Türkiye
Nazire ÇİÇEK
Kırşehir Ahi Evran Üniversitesi- Türkiye

Türk Akademik Yayınlar Dergisi (TAY Journal)

Volume 7, Issue 3, Year 2023

Cilt 7, Sayı 3, Yıl 2023

Advisory Board

Prof. Dr. Ahmet KILINÇ
Uludağ University, Türkiye
Prof. Dr. Ahmet NALÇACI
Kahramanmaraş Sütçü İmam University, Türkiye
Prof. Dr. Ahmet ŞİMŞEK
İstanbul University, Türkiye
Prof. Dr. Asuman Seda SARACALOĞLU
Adnan Menderes University, Türkiye
Prof. Dr. Bahri ATA
Gazi University, Türkiye
Prof. Dr. Canan LAÇIN ŞİMŞEK
Sakarya University, Türkiye
Prof. Dr. Cemalettin İPEK
Kırşehir Ahi Evran University, Türkiye
Prof. Dr. Cemil ÖZTÜRK
Marmara University, Türkiye
Prof. Dr. Çavuş ŞAHİN
Çanakkale Onsekiz Mart University, Türkiye
Prof. Dilek Gençtarım Kurt
Kırşehir Ahi Evran University, Türkiye
Prof. Dr. Engin KARADAĞ
Akdeniz University, Türkiye
Prof. Dr. Erdoğan KAYA
Anadolu University, Türkiye
Prof. Dr. Halil İbrahim YALIN
Cyprus International University, Cyprus
Prof. Dr. Hayati AKYOL
Gazi University, Türkiye
Prof. Dr. Handan DEVECİ
Anadolu University, Türkiye
Prof. Dr. Kadir KARATEKİN
Kastamonu University, Türkiye
Prof. Dr. Kadir ULUSOY
Mersin University, Türkiye
Prof. Dr. Kasım YILDIRIM
Muğla Sıtkı Kocaman University, Türkiye
Prof. Dr. Kubilay YAZICI
Niğde Ömer Halisdemir University, Türkiye
Prof. Dr. Mehmet Ali ÇAKMAK
Gazi University, Türkiye
Prof. Dr. Mehmet TAŞDEMİR
Kırşehir Ahi Evran University, Türkiye
Prof. Dr. Murat DEMİRBAŞ
Kırıkkale University, Türkiye
Prof. Dr. Mustafa SAFRAN
Gazi University, Türkiye
Prof. Dr. Mutlu Pınar DEMİRCİ GÜLER
Kırşehir Ahi Evran University, Türkiye

Yayın Danışma Kurulu

Prof. Dr. Ahmet KILINÇ
Uludağ Üniversitesi, Türkiye
Prof. Dr. Ahmet NALÇACI
Kahramanmaraş Sütçü İmam Üniversitesi, Türkiye
Prof. Dr. Ahmet ŞİMŞEK
İstanbul Üniversitesi, Türkiye
Prof. Dr. Asuman Seda SARACALOĞLU
Adnan Menderes Üniversitesi, Türkiye
Prof. Dr. Bahri ATA
Gazi Üniversitesi, Türkiye
Prof. Dr. Canan LAÇIN ŞİMŞEK
Sakarya Üniversitesi, Türkiye
Prof. Dr. Cemalettin İPEK
Kırşehir Ahi Evran Üniversitesi, Türkiye
Prof. Dr. Cemil ÖZTÜRK
Marmara Üniversitesi, Türkiye
Prof. Dr. Çavuş ŞAHİN
Çanakkale Onsekiz Mart Üniversitesi, Türkiye
Prof. Dr. Dilek Gençtarım Kurt
Kırşehir Ahi Evran Üniversitesi, Türkiye
Prof. Dr. Engin KARADAĞ
Akdeniz Üniversitesi, Türkiye
Prof. Dr. Erdoğan KAYA
Anadolu Üniversitesi, Türkiye
Prof. Dr. Halil İbrahim YALIN
Cyprus International Üniversitesi, Kıbrıs
Prof. Dr. Hayati AKYOL
Gazi Üniversitesi, Türkiye
Prof. Dr. Handan DEVECİ
Anadolu Üniversitesi, Türkiye
Prof. Dr. Kadir KARATEKİN
Kastamonu Üniversitesi, Türkiye
Prof. Dr. Kadir ULUSOY
Mersin Üniversitesi, Türkiye
Prof. Dr. Kasım YILDIRIM
Muğla Sıtkı Kocaman Üniversitesi, Türkiye
Prof. Dr. Kubilay YAZICI
Niğde Ömer Halisdemir Üniversitesi, Türkiye
Prof. Dr. Mehmet Ali ÇAKMAK
Gazi Üniversitesi, Türkiye
Prof. Dr. Mehmet TAŞDEMİR
Kırşehir Ahi Evran Üniversitesi, Türkiye
Prof. Dr. Murat DEMİRBAŞ
Kırıkkale Üniversitesi, Türkiye
Prof. Dr. Mustafa SAFRAN
Gazi Üniversitesi, Türkiye
Prof. Dr. Mutlu Pınar DEMİRCİ GÜLER
Kırşehir Ahi Evran Üniversitesi, Türkiye

Prof. Dr. Myunghui HONG <i>Seoul National University, Korea</i>	Prof. Dr. Myunghui HONG <i>Seoul National Üniversitesi, Kore</i>
Prof. Dr. Refik TURAN <i>Gazi University, Türkiye</i>	Prof. Dr. Refik TURAN <i>Gazi Üniversitesi, Türkiye</i>
Prof. Dr. Xun GE <i>The University of Oklahoma, USA</i>	Prof. Dr. Xun GE <i>Oklahoma Üniversitesi, ABD</i>
Prof. Dr. Zafer KUŞ <i>Kırşehir Ahi Evran University, Türkiye</i>	Prof. Dr. Zafer KUŞ <i>Kırşehir Ahi Evran Üniversitesi, Türkiye</i>
Assoc. Prof. Dr. Adem TAŞDEMİR <i>Kırşehir Ahi Evran University, Türkiye</i>	Doç. Dr. Adem TAŞDEMİR <i>Kırşehir Ahi Evran Üniversitesi, Türkiye</i>
Assoc. Prof. Dr. Bengisu KOYUNCU <i>Mimar Sinan University, Türkiye</i>	Doç. Dr. Bengisu KOYUNCU <i>Mimar Sinan Üniversitesi, Türkiye</i>
Assoc. Prof. Erhan GÜNEŞ <i>Kırşehir Ahi Evran University, Türkiye</i>	Doç. Dr. Erhan GÜNEŞ <i>Kırşehir Ahi Evran Üniversitesi, Türkiye</i>
Assoc. Prof. Dr. Erol KOÇOĞLU <i>İnönü University, Türkiye</i>	Doç. Dr. Erol KOÇOĞLU <i>İnönü Üniversitesi, Türkiye</i>
Assoc. Prof. Dr. Filiz ZAIMOĞLU ÖZTÜRK <i>Ordu University, Türkiye</i>	Doç. Dr. Filiz ZAIMOĞLU ÖZTÜRK <i>Ordu Üniversitesi, Türkiye</i>
Assoc. Prof. Dr. İhsan ÜNLÜ <i>Erzincan University, Türkiye</i>	Doç. Dr. İhsan ÜNLÜ <i>Erzincan Üniversitesi, Türkiye</i>
Assoc. Prof. Dr. Menderes ÜNAL <i>Kırşehir Ahi Evran University, Türkiye</i>	Doç. Dr. Menderes ÜNAL <i>Kırşehir Ahi Evran Üniversitesi, Türkiye</i>
Assoc. Prof. Dr. Ömer Faruk İSLİM <i>Mersin University, Türkiye</i>	Doç. Dr. Ömer Faruk İSLİM <i>Mersin Üniversitesi, Türkiye</i>
Assoc. Prof. Dr. Özlem KILINÇER <i>Nevşehir Hacı Bektaş Veli University, Türkiye</i>	Doç. Dr. Özlem KILINÇER <i>Nevşehir Hacı Bektaş Veli Üniversitesi, Türkiye</i>
Assoc. Prof. Dr. Uğur BAŞARMAK <i>Kırşehir Ahi Evran University, Türkiye</i>	Doç. Dr. Uğur BAŞARMAK <i>Kırşehir Ahi Evran Üniversitesi, Türkiye</i>

Indexes / Dizinler



H. W. Wilson Databases (Education Full Text)
<https://www.ebsco.com/m/ee/Marketing/titleLists/eft-coverage.htm>



ASOS INDEX
<https://asosindex.com.tr/index.jsp?modul=journal-page&journal-id=1482>



ICI World of Journals database
<https://journals.indexcopernicus.com/search/form?search=TAY%20JOURNAL>



International Scientific Indexing (ISI)
<https://isindexing.com/>



Directory of Research Journals Indexing
<http://olddrji.lbp.world/JournalProfile.aspx?jid=2618-589X>



Google Scholar
<https://scholar.google.com.tr/>



Eurasian Scientific Journal Index
<http://esjindex.org/search.php?id=6327>



CiteFactor
<https://www.citefactor.org/journal/index/30398/tay-journal#.Y8mtD3bP3IV>



ACARINDEX - Academic Researches Index
<https://www.acarindex.com/journals/turk-akademik-yayinlar-dergisi-tay-journal-4177>



ROAD, the Directory of Open Access scholarly Resources
<https://portal.issn.org/resource/ISSN/2618-589X>



Academindex
<https://academindex.com/journals/3791>



Open AIRE EXPLORE
<https://explore.openaire.eu/search/dataprovider?datasourceId=tubitakulakb.:97aa73926237f28df0516a0e5e043c9c>



ideal Online
<https://www.idealonline.com.tr/IdealOnline/lookAtPublications/journalDetail.xhtml?uid=1125>



Türk Eğitim İndeksi
<http://www.turkegitimindeksi.com/Journals.aspx?ID=7401>



Index of Academic Documents [IAD]
<http://openaccess.izmirakademi.org/journal/tayjournal/1233>



SOBIAD
<https://atif.sobiad.com/index.jsp?modul=dergi-sayfasi&ID=FlusmogBQzmg-9NMN6W3>



Asian Science Citation Index
<https://ascidatabase.com/index.php>

Contents / İçindekiler

Research Article/Araştırma Makalesi

Esra Benli Özdemir

Investigation of the Effects of Augmented Reality Applications on the Astronomy Literacy Levels of Secondary School Students

684-705

Artırılmış Gerçeklik Uygulamalarının Ortaokul Öğrencilerinin Astronomi Okuryazarlık Düzeylerine Etkisinin İncelenmesi

Research Article/Araştırma Makalesi

Nilay Çağlayan Dilber

A Comparative Analysis of Turkish and English Language Curriculum as Foreign Languages

706-737

Yabancı Dil Olarak Türkçe ve İngilizce Öğretim Programlarının Karşılaştırmalı Bir Analizi

Research Article/Araştırma Makalesi

Senem Özdamar, Ezgi Özeke Kocabaş

Counselors' Psychological Counseling Skills And Attitudes Towards Providing Counseling Help On Professional Satisfaction

738-765

Psikolojik Danışmanların Psikolojik Danışma Becerileri ve Psikolojik Danışmanlık Tutumlarının Mesleki Doyuma Etkisi

Research Article/Araştırma Makalesi

Hayati Arslan, Mustafa Soner Yüce, Mehmet Behzat Turan

Examining the Web Pedagogical Content Knowledge of Faculty of Sports Sciences Students and Their Attitudes towards Distance Education

766-790

Spor Bilimleri Fakültesi Öğrencilerinin Web Pedagojik İçerik Bilgileri ile Uzaktan Eğitime Yönelik Tutumlarının İncelenmesi

Research Article/Araştırma Makalesi

Ergin Erginer, Aysun Erginer, Ali Bostancıoğlu, Anıl Kadir Eranıl

The Portrayal of "Bad" Teacher: A Phenomenological Study of Turkish Trainee Teachers' Experiences

791-826

"Kötü" Öğretmen Tasviri: Türk Öğretmen Adaylarının Deneyimleri Üzerine Bir Olgubilim Çalışması

Research Article/Araştırma Makalesi

Peyruze Rana Çetinkaya, Sevilay Kalay Meydan

Study of Cognitive Structures of Professional Music Education Students Regarding the Concept of Aesthetics

827-845

Mesleki Müzik Eğitimi Alan Öğrencilerin Estetik Kavramına İlişkin Bilişsel Yapılarının İncelenmesi

Research Article/Araştırma Makalesi

Abdurahman Demir, Sertan Talas, Yasin Gökbulut

Effectiveness of Presenting the Touch Math Technique on a Tablet in Teaching Simple Addition to Children with Autism Spectrum Disorder

846-872

Otizm Spektrum Bozukluğu Bulunan Çocuklara Basit Toplama İşlemi Öğretiminde Nokta Belirleme Tekniğinin Tablet ile Sunumunun Etkililiği

Research Article/Araştırma Makalesi

Sami Emrah Gerekten, Emre Şengün, Erol Atmaca

Undergraduate Students in Vocational Music Education's Using Social Media to Improve their Instrument Playing Skills

873-901

Mesleki Müzik Eğitimi Alan Lisans Öğrencilerinin Çalgı Çalma Becerilerini Geliştirmeye Yönelik Sosyal Medya Kullanımları

Research Article/Araştırma Makalesi

Şeyma Erbay Mermer, Yasemin Kuzu, Hülya Kellecioglu

Determination of Type I Error and Power Rate in Differential Item Functioning by Several Methods

902-921

Değişen Madde Fonksiyonunda Tip I Hata ve Güç Oranının Farklı Yöntemlere Göre Belirlenmesi

Research Article/Araştırma Makalesi

Şuheda Ünal, Osman Çil

Primary School Teachers' Experiences on The Process of Teaching Mathematics with The Digital Storytelling Method

922-971

Dijital Öyküleme Yöntemiyle Matematik Öğretimi Sürecine Yönelik Sınıf Öğretmenlerinin Deneyimleri

Research Article/Araştırma Makalesi

Ramazan Atasoy, Mehmet Tufan Yalçın

Team Innovativeness, Teachers' Professional Practices, and Teachers' Instructional Practices: Testing a Mediation Model

972-997

Ekip Yenilikçiliği ile Öğretmenlerin Öğretim Uygulamaları Arasındaki İlişkide Öğretmenlerin Mesleki Uygulamalarının Aracılık Rolü

Research Article/Araştırma Makalesi

Tacettin Tezcan, Zeynep Fulya Temel

An Investigation of Research on Differentiated Instruction Approach in Preschool Education Between 2005-2022

998-1021

2005-2022 Yılları Arasında Okul Öncesi Eğitimde Farklılaştırılmış Öğretim Yaklaşımı ile İlgili Yapılan Araştırmaların İncelenmesi

Research Article/Arařtırma Makalesi

Gülizar Tepetař Cengiz, Mahzar Bal

Literature Circle Method Practice with Preschool Teachers through Children's Books: An Action Research Example

1022-1045

Okul Öncesi Öğretmenleri ile Çocuk Kitapları Aracılıęıyla Okuma Çemberi Uygulamaları: Bir Eylem Arařtırması Örneęi

Research Article/Arařtırma Makalesi

Selma Aslantař

A Review of Classroom Teachers' Perceptions of Art and Aesthetic Field Competency with Respect to Different Variables in Their Classroom Practices

1046-1069


Sınıf Öğretmenlerinin Sınıf İçi Uygulamalarında Sanat ve Estetik Alan Yeterlik Algılarının Farklı Deęişkenler Açısından İncelenmesi



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Investigation of the Effects of Augmented Reality Applications on the Astronomy Literacy Levels of Secondary School Students

 Esra Benli Özdemir, Assoc. Prof. Dr., Corresponding Author
Gazi University, Türkiye
esrabenlioedemir@gazi.edu.tr
Orcid ID: 0000-0002-2246-2420

Article Type: Research Article
Received Date: 05.04.2023
Accepted Date: 26.10.2023
Published Date: 30.10.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: [10.29329/tayjournal.2023.610.01](https://doi.org/10.29329/tayjournal.2023.610.01)

Citation: Benli Özdemir, E. (2023). Investigation of the effects of augmented reality applications on the astronomy literacy levels of secondary school students. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 684-705

Abstract

In this study, it is aimed to determine the astronomy literacy levels of the seventh and eighth grade secondary school students and to investigate the effect of augmented reality [AR] applications on the astronomy literacy levels of the students. The research is a quantitative study and a quasi-experimental method was used. The study group consists of a total of 95 seventh and eighth grade students (n7th grade = 46 and n8th grade = 49) studying in a secondary school in the central district of Ankara in the spring semester of the 2021-2022 academic year. The students of the study group of the research were selected by using convenient sampling method. Two experiments and two control groups were used in the study. The data of the research were obtained with the astronomy literacy scale before and after the application. In practice, the lessons were taught within the framework of basic astronomy concepts, with augmented reality applications in the experimental groups, and with the activities suggested in the textbooks in line with the achievements specified in the curriculum in the control groups. As a result of the analysis of the data, it was noted that the students' astronomy literacy levels were low before the application. After the application, the astronomy literacy levels of the experimental group students were high; it was seen that the control group students reached the intermediate level. It was determined that augmented reality [AR] applications positively affected the astronomy literacy levels of the experimental group students.

Keywords: Astronomy literacy, augmented reality, middle school students.

Introduction

Since ancient times, human beings have been in a desire and curiosity to understand, discover, and know the sky. In particular, the necessity of human beings to lead a more comfortable and reliable life on earth has been one of the factors that led to this desire. Since ancient times, astronomy has been a subject of interest, curiosity and research for people of all age groups, and the importance of astronomy has gradually increased with the rapidly developing technology. Understanding astronomy subjects and concepts in the Science Curriculum is an important part of science literacy. One of the main objectives of the 2018 Science Curriculum is "to provide basic information about astronomy, biology, physics, chemistry, earth and environmental sciences, and science and engineering applications." (Ministry of National Education [MoNE], 2018). When the renewed curriculum is examined, there are astronomy units within the subject area of "Earth and Universe". These units start from the 3rd grade. Astronomy units within the scope of the subject area are seen as the first unit of each education level. In this context, the astronomy units given at the beginning of the education process allow students to learn the basic astronomy subjects and concepts more efficiently. According to a study conducted by the Scientific and Technological Research Council of Türkiye [TUBITAK] to measure the scientific literacy of individuals between the ages of 15-24, it has been determined that the subjects with the highest level of interest and curiosity are "internet" and "astronomy" [MoNE, 2010].

An efficient, effective and successful astronomy curriculum should aim at attitudes, values, interests, motivation, observations and practices towards astronomy as well as cognitive knowledge and skills. In this context, affective and behavioral gains should be included along with cognitive acquisitions related to astronomy at all levels of education. Whether individuals have cognitive, affective and behavioral gains in astronomy subjects and concepts can be evaluated with "astronomy literacy".

The concept of "astronomy literacy" is to have multidimensional skills about the cognitive dimension of the basic astronomy concepts of the individual, as well as the behavioral and affective dimensions. An astronomy literate individual; conceptual knowledge of basic astronomy issues in terms

of cognitive dimension; positive attitude, interest and motivation towards astronomy in terms of affective dimension; In terms of behavioral dimension, it should have observation, participation and action related to astronomy. Love et al. (2013) determined the astronomy literacy level of 990 adult individuals over the age of 18. These individuals were asked six true-false questions. 80% of the participants gave correct answers to 4 of the 6 questions asked. However; The questions "Astronomers found life on Mars" and "They can calculate the age of the universe" are among the two questions most frequently answered incorrectly by the participants.

In a study, it is emphasized that astronomy literacy is an important part of scientific literacy. The use of technology and its applications in teaching astronomy concepts and subjects plays a very important role in embodying abstract concepts, understanding difficult subjects, and gaining affective and behavioral goals. The main objectives of the use of technology in education are to be more active in the teaching process, to reach the achievements more effectively, to increase efficiency and to provide education services for large masses (Baysal, 2016). Considering the stated objectives, it is understood that the inclusion and use of technology in the teaching of Science concepts and subjects makes learning easier, and contributes to education with the effect of permanently effective and understanding-based learning (Çankaya, 2019).

Many studies have revealed that technology and its applications enrich teaching methods and strategies, students are actively in the learning process and contribute to making education more efficient by providing mutual interaction (Küçüksaraç & Saymer, 2016). Especially in recent years, technology and its applications have been given more place in science education. One of the methods and techniques that is one of the less used materials in education but will make a strong contribution to education is augmented reality [AR] technology (Sarica, 2019). AR applications are a technology that allows both real and virtual objects to be seen together in an environment where virtual objects and contents are included in real environment images without disconnecting them from the real world (İçten & Bal, 2017). Increasingly functional components, especially in mobile devices, have benefited in terms of augmented reality applications. Many augmented reality applications such as Sky View, Google Sky Map, Night Sky, Solar Walk, Star Walk, Sky Guide AR and Stellarium have been developed to enrich the use of mobile devices in the field of astronomy. These applications, through mobile devices, provide learning from real images of celestial bodies and offer the opportunity to take various recordings. These features provide an easy, permanent, productive and enjoyable learning environment for individuals from all age groups in learning astronomy. In addition, educational studies using AR technology, which is rapidly developing and taking its place in the teaching process, are increasing day by day. When the literature is examined; In a study conducted by Aktamış and Arıcı (2013), it was revealed that seventh grade students' astronomy success increased and their knowledge was not forgotten after the implementation of virtual reality applications in astronomy teaching. In another study, Tian et., al. (2014), in their study at the university, revealed that the AR applications that university students use while observing are more effective. In the study conducted by Say and Pan (2017), it was stated that there was a significant increase in the academic achievement and attitudes of the students who participated in the courses conducted with AR applications. The process of teaching astronomy concepts with augmented reality applications was carried out by Danaia, McKinnon, and Fitzgerald (2017) with students and teachers. At the end of the teaching process, it was determined that there were significant developments in students' perceptions about science. In the study conducted by Şahin and Yılmaz (2020), it was observed that the academic achievements of the students and their attitudes towards the

astronomy lesson changed positively in the teaching of astronomy with AR applications. In their study, Tanık Önal and Önal (2021) observed that the academic achievement and interest of the students increased at the end of the AR supported astronomy courses with gifted students. Considering the researches, individuals who receive astronomy education using AR environments; their success in astronomy has increased (Buluş Kırıkkaya and Şentürk, 2018; Şahin and Yılmaz, 2020; Tanık Önal and Önal, 2021), forgetting about astronomy concepts is less (Aktamış and Arıcı, 2013), their attitudes towards astronomy have improved (Say and Pan, 2017; Şahin and Yılmaz, 2020; Tanık Önal and Önal, 2021), observation abilities increased (Tian et al., 2014). When the literature is examined; It is seen that the studies conducted on astronomy are carried out on academic achievement, permanence of learning or attitudes, interest and motivation towards astronomy. However, there has not been any research on students' "astronomy literacy" levels. In this context, it is thought that examining students' astronomy literacy levels in this study and improving their AR applications and astronomy literacy levels will fill the gap in the literature.

In this study, it is aimed to determine the astronomy literacy levels of secondary school seventh and eighth grade students and to investigate the effect of augmented reality [AR] applications on students' astronomy literacy levels. In line with the stated main purpose, the problem statement of the research is as follows: "Does the augmented reality applications have an effect on the astronomy literacy levels of secondary school students?" In line with the stated main purpose, the problem statement of the research is: "Does augmented reality applications have an effect on the astronomy literacy levels of secondary school students?" can be expressed as. Based on the problem statement of the research, the sub-problems determined are listed below:

1. Is there a significant difference between the pretest and posttest averages of astronomy literacy levels of 7th grade experimental group students?
2. Is there a significant difference between the pretest and posttest averages of astronomy literacy levels of 7th grade control group students?
3. Is there a significant difference between the astronomy literacy level pretest averages of 7th grade experimental and control group students?
4. Is there a significant difference between the astronomy literacy level posttest averages of 7th grade experimental and control group students?
5. Is there a significant difference between the pretest and posttest averages of the astronomy literacy level of the 8th grade experimental group students?
6. Is there a significant difference between the pretest and posttest averages of astronomy literacy levels of 6th and 8th grade control group students?
7. Is there a significant difference between the pretest averages of astronomy literacy levels of 7th and 8th grade experimental and control group students?
8. Is there a significant difference between the astronomy literacy level posttest averages of 8th grade experimental and control group students?

Method

In this section, information about the model of the research, the study group of the research, the collection of data, the data collection process and the analysis of the data are given.

Model of the Research

A quasi-experimental design with a pretest-posttest control group was used in the research. (Büyüköztürk, 2011). In this study, the independent variable whose effect on the experimental groups was examined is augmented reality applications. In the control groups, these are the practices recommended in the Science course curriculum. The dependent variable in the groups is astronomy literacy level. In the study, the astronomy literacy levels of the students participating in the study were monitored before and after the learning process, on the basis of astronomy concepts. The main feature of experimental research is that independent variables can be controlled (McMillan, 2000, p. 207). The experimental design model used in the research is shown in Table 1.

Table 1. *Quasi-experimental design model of the study with pretest-posttest control group*

Groups	Pretest	Method	Posttest
E1	Pr1	X1	Po1
C1	Pr1	X2	Po1
E2	Pr2	X1	Po2
C2	Pr2	X2	Po2

E1: Experimental group 7th grade

C1: Control group 7th Grade

E2: Experimental group 8th grade

C2: Control group 8th Grade

Pr1: 7th grade pretest measurements

Pr2: 8th grade pretest measurements

X1: The learning method whose effect was observed on the experimental groups

X2: The learning method whose effect was observed on the control groups

Po1: 7th grade posttest measurements

Po2: 8th grade posttest measurements When Table 1 is examined, the independent variable that has an effect on the learning outcomes (astronomy literacy levels) of the participants is the practices in the learning process based on astronomy concepts.

Studying Group

In this study, the study group was selected according to the convenience sampling method using non-probability sampling method. In this method, participants are selected from among individuals who are easily accessible to the researcher, volunteer and suitable for the research (Gravetter & Forzano, 2012). The study group consists of seventh and eighth grade students (n7th grade = 46 and n8th grade = 49) studying at a public secondary school in the central district of Ankara in the spring term of the 2021-2022 academic year. During the study, a total of four different classes, two experimental and two control groups, were studied. The descriptive statistics results for the participants in the study group in Table 2.

Table 2. Descriptive statistics results for the participants in the study group

Grade Level	Group	Gender				Total	
		Girl		Boy		n	%
		n	%	n	%		
7th Grade	Experimental	13	59	9	41	22	23.15
	Control	12	50	12	50	24	25.25
8th Grade	Experimental	12	46.1	14	53.9	26	27.35
	Control	12	52.2	11	47.8	23	24.25
Total		49	51.6	46	58.4	95	100

According to Table 2, 51.6% of the participants are 7th grade students and 58.4% are 8th grade students.

Data Collection Tools

The data obtained in this study were collected with the "Astronomy Literacy Scale" developed by the researcher.

Astronomy Literacy Scale

The "Astronomy Literacy Scale" developed by the researcher was used to measure the students' astronomy literacy levels (Benli Özdemir, 2022). The scale is a five-point Likert type, consists of 16 judgments and has a 3-factor structure. The scale includes the affective dimension for astronomy, the behavioral dimension for astronomy, and the cognitive dimension for astronomy. The 16 items in the scale are numbered from 1 point to 5 points, from the lowest to the highest level of students' astronomy literacy levels. While the highest score that can be obtained from the scale is 80; The lowest score is 16. In the scale, 1-15 point ranges are considered very low, 16-31 point ranges are considered low, 32-47 point ranges are considered medium, 48-63 points are considered high, and 64-80 point ranges are considered very high. A reliability study was conducted for the astronomy literacy scale developed by the researcher (Benli Özdemir, 2022). The scale was applied to 213 students different from the study group. According to the analysis obtained, the coefficients of internal consistency and sub-factors were determined. The reliability coefficient was found as $\alpha = .87$. Since this value is above $\alpha = .70$, the measurement tool has sufficient reliability to collect data (Büyüköztürk, 2011). When the reliability levels of the sub-factors of the scale were analyzed in the study, it was found that $\alpha = .77$, $\alpha = .82$ and $\alpha = .81$. The reliability levels of the sub-factors were also found to be reliable (Alpar, 2003).

Implementation Process

This research was carried out with a total of 95 students studying in four different branches in the seventh and eighth grades in the spring term of the 2021-2022 academic year in a state secondary school in the central district of Ankara. Attention was paid to the volunteering principle of the students in the participant group of the study. In order to increase the reliability of the research, it was carried out with four classes, two experimental groups and two control groups, studying in the 7th and 8th grades. Information about the learning process in practice is given in Table 3.

Table 3. Learning process carried out in practice

Grade Level	Studying Groups	Pretest	Application process	Application time	Posttest
7th grade	Experimental group 1	Astronomy Literacy Scale	Augmented Reality Applications	16 Lesson Hours	Astronomy Literacy Scale
7th grade	Control Group 1	Astronomy Literacy Scale	Recommended Practices in Textbooks	16 Lesson Hours	Astronomy Literacy Scale
8th grade	Experimental group 2	Astronomy Literacy Scale	Augmented Reality Applications	16 Lesson Hours	Astronomy Literacy Scale
8th grade	Control Group 2	Astronomy Literacy Scale	Recommended Practices in Textbooks	16 Lesson Hours	Astronomy Literacy Scale

Before the application, the "Astronomy literacy scale" was applied as a pre-test in order to measure the astronomy literacy levels of the students in the study group. Then, the application on the basis of astronomy concepts was completed by the researcher in the experimental and control groups in a total of 16 lesson hours as indicated in the table. With the experimental group students, astronomy subjects and concepts were taught with AR applications (Sky Guide AR, SkyView Lite, Night Sky 8, Sky Map, Star Walk 2, Solar Walk 2, Stellarium Plus, etc.). The activities carried out in the experimental and control groups during the application process are given in Table 4.

Table 4. Activities carried out in the experimental and control groups during the implementation process

Week	Experimental Group Activities	Control Group Activities
1st week (4 Lesson Hours)	"I am observing the sky using an augmented reality application" activity (2 Hours) "I am making virtual reality glasses" activity (2 hours)	"I am observing the sky with the naked eye" activity (2 hours) "I'm making a simple telescope" activity (2 Hours)
2nd week (4 Lesson Hours)	"I travel to space with the planetarium" activity (2 hours) "I see the sun using an augmented reality application" activity (2 Hours)	"I am building my dream spacecraft" activity (2 Hours) "I make a solar model using simple materials" activity (2 Hours)
3th week (4 Lesson Hours)	"I see the world using an augmented reality app" activity (2 Hours) "I see the Moon using an augmented reality app" activity (2 Hours)	"I make a world model using simple materials" activity (2 Hours) "I make a Moon model using simple materials" activity (2 Hours)
4th week (4 Lesson Hours)	"I see constellations using augmented reality app" activity (1 Hour) "Unique journey to the sky with Space 4D+ Augmented Reality Card Set" activity (2 Hours) Implementation of the posttest (1 hour)	"I make constellations with colorful pencils" activity (1 Hour) Preparation and playing activity of the game "sky in our classroom" (2 Hours) Implementation of the posttest (1 hour)



Photograph 1. Photos of the application process

Some photos of the augmented reality application and "I am observing the sky" activities carried out in the 7th and 8th grade experimental groups during the application process are given below.

Analysis of Data

The data of the "astronomy literacy scale", which is used to measure the astronomy literacy levels of the students before and after the application, were analyzed with the SPSS statistical package program. Appropriate statistical methods were determined for each sub-problem related to quantitative data. Then, dependent groups t-test was used for intragroup comparisons, and independent groups t-test analysis was performed for intergroup (experiment-control) comparisons.

Ethical Permits of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Ethics, principles and rules were followed at all stages of this research.

Findings

In the study, determining the astronomy literacy levels of secondary school seventh and eighth grade students and the effect of augmented reality applications on students' astronomy literacy levels were investigated.

Findings and Comments on the Data of the 7th Grade Experimental and Control Group Students

The findings and comments regarding the astronomy literacy levels of the students in the 7th grade study group are given below.

Findings and Comments on the Astronomy Literacy Levels Pretest and Posttest Scores of the 7th Grade Experimental Group Students

Is there a significant difference between the pretest and posttest scores of the 7th grade experimental group students' astronomy literacy levels? The results of the t-test analysis for the dependent samples related to the sub-problem are given in Table 5.

Table 5. *Dependent samples t-test results of pretest-posttest mean scores of 7th grade experimental group students' astronomy literacy levels*

	n	\bar{X}	ss	df	t	p	η^2
Pretest	22	41.59	8.47	21	-13.73	.00	.89
Posttest	22	67.00	4.40				

When Table 5 is examined, it is seen that there is a significant difference when the pretest-posttest mean scores of the 7th grade experimental group students' astronomy literacy levels are examined ($t_{21} = -13,73$, $p = 0.00 < 0.05$). The posttest mean score of the experimental group students ($\bar{X} = 67,00$), was higher than the pretest mean score ($\bar{X} = 41,59$). It has been seen that augmented reality applications make a positive contribution to students' astronomy literacy levels. It is possible to say that the effect size of augmented reality applications on the average score of astronomy literacy levels is large ($\eta^2 = .89$).

Findings and Comments on the Astronomy Literacy Levels Pretest and Posttest Scores of the 7th Grade Control Group Students

Is there a significant difference between the pretest and posttest scores of the 7th grade control group students' astronomy literacy levels? the t-test analysis results for the dependent samples related to the sub-problem are given in Table 6.

Table 6. *Dependent samples t-test results of pretest-posttest mean scores of 7th grade control group students' astronomy literacy levels*

	n	\bar{X}	ss	df	t	p
Pretest	24	39.17	7.28	23		.03
Posttest	24	41.96	4.71		-2.22	

When Table 6 is examined, it is seen that there is a significant difference when the pretest-posttest mean scores of the 7th grade control group students' astronomy literacy levels are examined ($t_{24} = -2,22$, $p = 0.03 < 0.05$). The mean score of the control group students after the application ($\bar{X} = 41.96$) was close to the pre-application scores ($\bar{X} = 39.17$).

Findings and Comments on Astronomy Literacy Levels Pretest Scores of 7th Grade Experimental and Control Group Students

Is there a significant difference between the astronomy literacy levels and pretest scores of the 7th grade experimental and control group students? the t-test analysis results for the independent samples related to the sub-problem are given in Table 7.

Table 7. *Independent samples t-test results of pretest mean scores of 7th grade experimental and control groups students' astronomy literacy levels*

Group	n	\bar{X}	ss	df	t	p
Experimental	22	41.59	8.47	44	1.04	.30
Control	24	39.17	7.28			

When Table 7 is examined, there is no significant difference between the average scores of the 7th grade students' pre-application astronomy literacy levels ($t_{44} = 1,04$, $p = 0.30 > 0.05$). The mean score of the experimental group students ($\bar{X} = 41.59$) and the mean score of the control group students ($\bar{X} = 39.17$) are close.

Findings and Comments on Astronomy Literacy Levels Posttest Scores of 7th Grade Experimental and Control Group Students

Is there a significant difference between the astronomy literacy levels and pretest scores of the 7th grade experimental and control group students? the t-test analysis results for independent samples related to the sub-problem are given in Table 8.

Table 8. *Independent samples t-test results of posttest average scores of 7th grade experimental and control groups students' astronomy literacy levels*

Group	n	\bar{X}	ss	df	t	p	η^2
Experimental	22	67.00	4.40	44	18.56	.00	.88
Control	24	41.96	4.71				

When Table 8 is examined, it is seen that there is a significant difference when the posttest mean scores of the 7th grade experimental and control group students' astronomy literacy levels are examined ($t_{44} = 18,56$, $p = 0.00 < 0.05$). The posttest average score ($\bar{X} = 67.00$) of the students studying with augmented reality applications is higher than the posttest average score ($\bar{X} = 41.96$) of the students studying with the applications suggested in the textbooks. When the effect value of augmented reality applications is examined, it is seen that the eta square value ($\eta^2 = .88$) has a large effect value. Eta square (η^2) value shows that this difference is not accidental (Cohen, 1988: 44).

Findings and Comments on the Data of the 8th Grade Experimental and Control Group Students

The findings and comments regarding the astronomy literacy levels of the students in the 8th grade study group are given below.

Findings and Comments on the Astronomy Literacy Levels Pretest and Posttest Scores of the 8th Grade Experimental Group Students

Is there a significant difference between the pretest and posttest scores of the 8th grade experimental group students' astronomy literacy levels? the t-test analysis results for the dependent samples related to the sub-problem are given in Table 9.

Table 9. *Dependent samples t-test results of pretest-posttest mean scores of 8th grade experimental group students' astronomy literacy levels*

	n	\bar{X}	ss	df	t	p	η^2
Pretest	26	40.57	8.46	25	-17.67	.00	.92
Posttest	26	66.73	3.90				

When Table 9 is examined, it is seen that there is a significant difference when the pretest-posttest mean scores of the 8th grade experimental group students' astronomy literacy levels are examined ($t_{25} = -17,67$, $p = 0.00 < 0.05$). The posttest mean score ($\bar{X} = 66.73$) of the experimental group students was higher than the pretest mean score ($\bar{X} = 40.57$). It has been seen that augmented reality applications make a positive contribution to students' astronomy literacy levels. It is possible to say that

the effect size of augmented reality applications on the average score of astronomy literacy levels is large ($\eta^2 = .92$).

Findings and Comments on the Astronomy Literacy Levels Pretest and Posttest Scores of the 8th Grade Control Group Students

Is there a significant difference between the pretest and posttest scores of the 8th grade control group students' astronomy literacy levels? the t-test analysis results for the dependent samples related to the sub-problem are given in Table 10.

Table 10. *Dependent samples t-test results of pretest-posttest mean scores of 8th grade control group students' astronomy literacy levels*

	n	\bar{X}	ss	df	t	p
Pretest	23	40.04	7.87	22	-7.55	.00
Posttest	23	45.69	6.52			

When Table 10 is examined, it is seen that there is a significant difference when the pretest-posttest mean scores of the 8th grade control group students' astronomy literacy levels are examined ($t_{22} = -7,55$, $p = 0.00 < 0.05$). The average score of the control group students after the application ($\bar{X} = 45.69$) is higher than the scores before the application ($\bar{X} = 40.04$).

Findings and Comments on the Astronomy Literacy Levels Pretest Scores of the 8th Grade Experimental and Control Group Students

Is there a significant difference between the pretest scores of the 8th grade experimental and control group students' astronomy literacy levels? the t-test analysis results for independent samples related to the sub-problem are given in Table 11.

Table 11. *Independent samples t-test results of pretest mean scores of 8th grade experimental and control groups students' astronomy literacy levels*

Group	n	\bar{X}	ss	df	t	p
Experimental	26	40.57	8.46	47	.22	.82
Control	23	40.04	7.87			

When Table 11 is examined, there is no significant difference between the average scores of the 7th grade students' pre-application astronomy literacy levels ($t_{47} = .22$, $p = 0.82 > 0.05$). The astronomy literacy scores of the experimental and control group students were close before the application.

Findings and Comments on the Astronomy Literacy Levels Posttest Scores of the 8th Grade Experimental and Control Group Students

Is there a significant difference between the pretest scores of the 8th grade experimental and control group students' astronomy literacy levels? the t-test analysis results for independent samples related to the sub-problem are given in Table 12.

Table 12. *Independent samples t-test results of the astronomy literacy levels posttest mean scores of the 8th grade experimental and control group students*

Group	n	\bar{X}	ss	df	t	p	η^2
Experimental	26	66.73	3.90	47	13.87	.00	.80
Control	23	45.69	6.52				

When Table 12 is examined, it is seen that there is a significant difference when the posttest mean scores of the 8th grade experimental and control group students' astronomy literacy levels are

examined ($t_{47} = 13.87, p = 0.00 < 0.05$). The posttest average score ($\bar{X} = 66.73$) of the students working with augmented reality applications is higher than the posttest average score ($\bar{X} = 45.69$) of the students working with the applications suggested in the textbooks. When the effect value of augmented reality applications is examined, it is seen that the eta square value ($\eta^2 = .80$) has a large effect value. Eta square (η^2) value shows that this difference is not accidental (Cohen, 1988: 44).

Discussion and Conclusion

In this study, the astronomy literacy levels of the seventh and eighth grade students were determined and the effect of augmented reality (AR) applications on the astronomy literacy levels of the students was investigated. In this context, the following conclusions have been reached on the basis of the stated objective:

It was noted that the seventh and eighth grade students of secondary school had a low level of astronomy literacy before the application. After the application, it was observed that the astronomy literacy levels of the seventh and eighth grade experimental group students in the courses conducted with augmented reality applications reached a high level. It has been determined that augmented reality (AR) applications have a positive effect on students' astronomy literacy levels. After the application, it was seen that the astronomy literacy levels of the control group students in the lessons carried out with the applications and activities recommended in the textbooks reached the medium level. The astronomy literacy levels of the control group students were lower than those of the experimental group students. When the literature is examined, it is seen that AR applications are an effective method among teaching methods and contribute positively to the cognitive learning of students (Abdüsselam, 2014; Abdüsselam & Karal, 2012; Akçayır et al., 2016; Bressler & Bodzin, 2013; Buchner & Zumbach, 2018; Chen et al., 2015; Chiang et al., 2014; Enyedy et al., 2012; Fleck et al., 2014; Hsiao et al., 2012; İbili & Şahin, 2013; Küçük et al., 2014; Lin et al., 2013; Tarng et al., 2021). When the literature is examined, it is seen that AR applications contribute positively to students' affective acquisitions such as attitude, interest and motivation (Buluş Kırıkkaya & Şentürk, 2018; Duman & Öncü, 2016; Delello, 2014; Ersoy, Huang, et al., 2016; Furió et al., 2015; Hsiao et al., 2012; Ibanez et al., 2014; Khan, et al., 2019; Megahed, 2014; Onur, 2021; Özeren, 2020; Pozharina, 2019; Tandoğan, 2019). It was observed that students achieved a higher motivation and success after Özeren (2020) realized with the AR material named CellAR. However, in the studies conducted by Eren (2019), Yetişir (2019) and Türksoy (2019), results were reached that AR applications increase the permanence of knowledge. Discovery Kırıkkaya and Şentürk (2018) concluded that there is a significant difference in academic achievement levels in favor of the experimental group students, as a result of the fact that the Science course solar system and beyond unit teaching was carried out with AR supported application. According to the results of the study, it can be said that augmented reality applications are effective on students' astronomy literacy levels. The partial effect size value also supports the result of the study. The literacy of the science of astronomy, which started from ancient times and became increasingly important with rapidly developing technology, is an important part of scientific literacy. In this context, studies on the development of astronomy literacy in individuals are very important.

Recommendations

According to the results obtained in this study, various suggestions were made to practitioners, program developers and researchers:

Recommendations for practitioners:

- As a result of this research conducted to determine the astronomy literacy levels of students and the effect of augmented reality (AR) applications on students' astronomy literacy levels; It was determined that the students' astronomy literacy levels were low before the application. In this regard, more space should be given to augmented reality applications that will increase students' astronomy literacy levels.

- The study included activities to increase the astronomy literacy levels of 7th and 8th grade secondary school students. In future studies, studies that will enable students to realize their astronomy talents at all levels of education can be included.

Recommendations for program developers:

- In Science courses, where the aim is to provide cognitive gains related to astronomy, practices aimed at gaining more cognitive, affective and behavioral gains can be included while preparing the gains and curriculum.

Recommendations for researchers:

- One of the limitations of the study is that different demographic characteristics were not taken into account in the research. By examining astronomy literacy levels in terms of different socio-demographic variables, the effects of these variables on astronomy literacy and the dimensions of this effect can be investigated.

- Including activities that increase the astronomy literacy levels of secondary school 7th and 8th grade students is among the limitations of the study. Experimental studies can be conducted to ensure and observe the development of astronomy literacy levels of individuals at all levels of education.

- Astronomy literacy levels of students studying in primary school, secondary school, high school or higher education can be examined and these levels can be compared among themselves.

References

- Abdüsselam, M. S., & Karal, H. (2012). Fizik öğretiminde artırılmış gerçeklik ortamlarının öğrenci akademik başarısı üzerine etkisi: 11. Sınıf manyetizma konusu [The effect of mixed reality environments on the students' academic achievement in physics education: 11th Grade magnetism topic example]. *Journal of Research in Education and Teaching*, 1(4), 170-182.
- Akçayır, M., Akçayır, G., Pektaş, H. M., & Ocak, M. A. (2016). Augmented reality in science laboratories: The effects of augmented reality on university students' laboratory skills and attitudes toward science laboratories. *Computers in Human Behavior*, 57, 334-342.
- Arıcı, V. A. (2013). *Fen eğitiminde sanal gerçeklik programları üzerine bir çalışma: "Güneş sistemi ve ötesi: Uzay bilmecesi" ünitesi örneği* [A study on 3d-virtual reality in science education programs: "Solar system and beyond: Space puzzle" unit sample]. (Tez No. 334877). [Master Thesis, Adnan Menderes University], National Thesis Center.
- Alpar, R. (2003). *Uygulamalı çok değişkenli istatistiksel yöntemlere giriş* [Introduction to applied multivariate routing]. (2nd ed.). Nobel Yayın Dağıtım.
- Baysal, Y. E. (2016). *Fen bilgisi öğretmenlerinin eğitim teknolojilerini kullanmaya yönelik motivasyon ve öz düzenleme düzeylerinin belirlenmesi* [Determining the motivation and self-regulation levels of science teachers regarding their use of instructional technologies]. (Tez No. 446068). [Master Thesis, Dicle University], National Thesis Center.
- Benli Özdemir, E. (2022). Astronomi okuryazarlık ölçeğinin geliştirilmesi: Geçerlik ve güvenirlik çalışması. [Development of astronomy literacy scale: A study of validity and reliability]. *International Online Journal of Education and Teaching*, 9(3), 1356-1376.
- Bressler, D. M., & Bodzin, A. M. (2013). A mixed methods assessment of students' flow experiences during a mobile augmented reality science game. *Journal of Computer Assisted Learning*, 29, 505-517.
- Buchner, J., & Zumbach, J. (2018). Promoting intrinsic motivation with a mobile augmented reality learning environment international association for development of the information society *Paper presented at the International Association for Development of the Information Society (IADIS). International Conference on Mobile Learning 14th*, Lisbon, Portugal.
- Buluş Kırıkkaya, E., & Şentürk, M. (2018). Güneş sistemi ve ötesi ünitesinde artırılmış gerçeklik teknolojisi kullanılmasının öğrenci akademik başarısına etkisi [The impact of using augmented reality technology in the solar system and beyond unit on the academic achievement of the students]. *Kastamonu Education Journal*, 26(1), 181-189.
- Büyüköztürk, Ş. (2011). *Deneyisel desenler* [Experimental patterns]. (3rd ed.). Pegem Akademi.
- Chen, C. H., Yang, J. C., Shen, S., & Jeng, M. C. 2007. A desktop virtual reality earth motion system in astronomy education. *Educational Technology and Society*, 10, 289-304.
- Chiang, T. H. C., Yang, S. J. H., & Hwang, G. J. (2014). An augmented reality-based mobile learning system to improve students' learning achievements and motivations in natural science inquiry activities. *Educational Technology and Society*, 17(4), 352-365.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159.
- Çankaya, B. (2019). *Artırılmış gerçeklik uygulamalarının ortaöğretim öğrencilerinin fen bilimleri dersi başarı, tutum ve motivasyonuna etkisi* [The effect of the augmented reality applications on the success, attitude and motivation of secondary education student]. (Tez No. 575383). [Master Thesis, Gazi University], National Thesis Center.
- Danaia, L., McKinnon, D. H., & Fitzgerald, M. (2017). Ideal pictures and actual perspectives of junior secondary school science: Comparisons drawn from Australian students in an astronomy education programme. *Research in Science & Technological Education*, 35(4), 445-460.
- Delello, J. A. (2014). Insights from pre-service teachers using science-based augmented reality. *Journal of Computers in Education*, 1(4), 295-311.

- Enyedy, N., Danish, J. A., Delacruz, G., & M. Kumar (2012). Learning physics through play in an augmented reality environment. *International Journal of Computer-Supported Collaborative Learning*, 7(3), 347-378.
- Ersoy H., Duman E., & Öncü S. (2016). Artırılmış gerçeklik ile motivasyon ve başarı: Deneysel bir çalışma. [Motivation and success with augmented reality: An experimental study]. *Journal of Instructional Technologies and Teacher Education*, 5(1), 39-44.
- Fleck, S., Simon, G., & Bastien, C. (2014). AIBLE: an inquiry-based augmented reality environment for teaching astronomical phenomena. *13th IEEE International Symposium on Mixed and Augmented Reality - ISMAR*, Munich, Germany.
- Furió, D., Juan, M.-C., Segui, I., & Vivó, R. (2015). Mobile learning vs. traditional classroom lessons: A comparative study. *Journal of Computer Assisted Learning*, 31(3), 189-201.
- Hsiao, K. F., Chen, N. S., & Huang, S. Y. (2012). Learning while exercising for science education in augmented reality among adolescents. *Interactive Learning Environments*, 20(4), 331- 349.
- Huang, T. C., Chen, C. C., & Chou, Y. W. (2016). Animating eco-education: To see, feel, and discover in an augmented reality-based experiential learning environment. *Computers & Education*, 96, 72-82.
- Ibáñez, M. B., Di Serio, A., Villarán, D., & Kloos, C. D. (2014). Experimenting with electromagnetism using augmented reality: Impact on flow student experience and educational effectiveness. *Computers ve Education*, 71, 1-13.
- İbili E., & Şahin, S. (2013). Artırılmış gerçeklik ile interaktif 3D geometri kitabı yazılımın tasarımı ve geliştirilmesi: ARGE3D [Software design and development of an interactive 3d geometry book using augmented reality: ARGE3D]. *Afyon Kocatepe University Journal of Science and Engineering*, 13(1), 1-8.
- İçten, T., & Bal, G. (2017). Artırılmış gerçeklik üzerine son gelişmelerin ve uygulamaların incelenmesi [Review of recent developments and applications in augmented reality]. *Gazi University Journal of Science Part C: Design and Technology*, 5(2) , 111-136.
- Khan, T., Johnston, K., & Ophoff, J.(2019).*The impact of an augmented reality application on learning motivation of students. Advances in Human-Computer Interaction 2019*, [7208494].
- Küçük, S., Yılmaz, R. M., Baydaş, Ö., & Göktaş, Y. (2014). Ortaokullarda artırılmış gerçeklik uygulamaları tutum ölçeği: Geçerlik ve güvenilirlik çalışması [Augmented reality applications attitude scale in secondary schools: Validity and reliability study]. *Education and Science*, 39(176), 383-392.
- Küçüksaraç, B., & Sayımer, İ. (2016). Deneysel pazarlama aracı olarak artırılmış gerçeklik: Türkiye'deki marka deneyimlerinin etkileri üzerine bir araştırma [Augmented reality as an experimental marketing tool: A research about brand experience impacts in Turkey]. *Istanbul University Faculty of Communication Journal*, 51, 73-95.
- Lin, T. J., Duh, H. B. L., Li, N., Wang, H. Y., & Tsai, C. C. (2013). An investigation of learners' collaborative knowledge construction performances and behavior patterns in an augmented reality simulation system. *Computers & Education*, 68, 314-32.
- Love, C., Murphy, A., & Bonora, S. (2013). Evaluating astronomy literacy of the general public. *Astronomical Journal*, August(9).
- McMillan, J. H. (2000). *Educational research: Fundamentals for the consumer*. Longman.
- Megahed, N. A. (2014). Augmented reality based-learning assistant for architectural education. *International Journal on Advances in Education Research*. 1, 35-50.
- Milli Eğitim Bakanlığı Talim ve Terbiye Kurulu Başkanlığı (2018). *İlköğretim kurumları (İlkokullar ve ortaokullar) Fen Bilimleri dersi (3, 4, 5, 6, 7 ve 8. sınıflar) öğretim programı* [Primary education ,institutions (Primary and secondary schools) science course (3, 4, 5, 6, 7 and 8th grades) curriculum]. Ankara.
- Milli Eğitim Bakanlığı Talim ve Terbiye Kurulu Başkanlığı (2010). *Ortaöğretim Astronomi ve Uzay Bilimleri dersi öğretim programı* (Secondary education Astronomy and Space sciences curriculum). Ankara.

- Onur, M. (2021). *Artırılmış gerçeklik ile desteklenen öğretimin, güneş sistemi ve ötesi ünitesinde öğrencilerin akademik başarılarına, öğrenmedeki kalıcılık düzeyine ve derse yönelik motivasyona etkisi* [The effect of augmented reality-supported teaching on students' academic achievement, level of learning permanence, and learning motivation in the solar system and beyond unit]. (Tez No.704680). [Master Thesis, Mustafa Kemal University]. National Thesis Center.
- Özeren, S. (2020). *Artırılmış gerçeklik uygulamalarının ortaokul öğrencilerinin başarı ve motivasyonuna etkisi* [The effects of augmented reality applications on the achievement and motivation levels of secondary school students]. (Tez No. 637685). [Master Thesis, Abant İzzet Baysal University]. National Thesis Center.
- Pozharına, G. (2019). *Yabancı dil olarak İngilizce akademik yazma derslerinde mobil artırılmış gerçeklik ile zenginleştirilmiş materyallerin öğrencilerin motivasyon ve tutum düzeyine etkileri* [The effects of using mobile augmented reality integrated materials on students' motivation and attitude level in EFL academic writing classes]. (Tez No. 569334). [Master Thesis, İstanbul Aydın University], National Thesis Center.
- Sarıca, R. (2019). Destekleme ve yetiştirme kurslarına (DYK) yönelik öğretmen görüşleri [Teachers' opinions about supporting and training courses]. *Milli Eğitim Dergisi*, 48(221), 91-122.
- Say, S., & Pan, V. (2017). The effect of instruction with augmented reality astronomy cards on 7th grade students' attitudes towards astronomy and academic achievement. *The Turkish Online Journal of Educational Technology (Special Issue for INTE 2017)*, 295-301.
- Şahin, D., & Yılmaz, R. M. (2020). The effect of augmented reality technology on middle school students' achievements and attitudes towards science education. *Computers & Education*, 144, 1-11.
- Tandoğan, B. (2019). *Özel amaçlı İngilizce öğretiminde artırılmış gerçeklik ile zenginleştirilmiş arcs model tabanlı öğretim materyallerinin öğrencilerin kelime başarısına ve motivasyonuna etkisinin incelenmesi* [Investigating the effectiveness of ARCS based instructional materials enhanced with augmented reality on esp vocabulary achievement and motivation]. (Tez No. 573364). [Master Thesis, Orta Doğu Teknik University], National Thesis Center.
- Tanık Önal, N., & Önal, N. (2021). The effect of augmented reality on the astronomy achievement and interest level of gifted students. *Education and Information Technologies*, 26, 4573-4599.
- Tarng W., Lin Y-J., & Ou K-L. (2021). A virtual experiment for learning the principle of Daniell cell based on augmented reality. *Applied Sciences*, 11(2), 762.
- Tian, K., Endo, M., Urata, M., Mouri, K., & Yasuda, T. (2014). Lunar observation support system using smartphone AR for astronomy education. *International Journal of Interactive Mobile Technologies*, 8(1), 32-39.

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 100%

Conflict Statement

There is no conflict of interest that the author will declare in the research.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Artırılmış Gerçeklik Uygulamalarının Ortaokul Öğrencilerinin Astronomi Okuryazarlık Düzeylerine Etkisinin İncelenmesi

Giriş

“Astronomi okuryazarlığı” kavramı, bireyin temel astronomi kavramlarının bilişsel boyutu ile beraber davranışsal ve duyuşsal boyutları hakkında çok boyutlu becerilere sahip olmaktır. Astronomi okuryazarı bir birey; bilişsel boyut açısından temel astronomi konularında kavramsal bilgiye; duyuşsal boyut açısından astronomiye yönelik olumlu tutum, ilgi ve motivasyona; davranışsal boyut açısından ise astronomi ile ilgili gözlem, katılım ve eyleme sahip olmalıdır.

Astronomi kavram ve konularının öğretiminde teknoloji ve uygulamalarının kullanılması, soyut kavramların somutlaştırılması ve görülmesi, zor konuların anlaşılması, duyuşsal ve davranışsal hedeflerin kazandırılması açısından çok önemli bir rol almaktadır. Öğrencinin öğretim sürecinde daha aktif olabilmesi, kazanımlara daha etkili bir şekilde ulaşabilmesi, verimin artması ve geniş kitlelere yönelik eğitim hizmetinin sunulması eğitimde teknoloji kullanımının temel hedefleridir (Baysal, 2016). Belirtilen hedefler dikkate alındığında, Fen bilimleri kavram ve konularının öğretiminde teknolojinin yer almasının ve kullanımının, öğrenmeyi daha kolay hale getirdiği, kalıcı etkili ve anlamaya dayalı öğrenme etkisiyle eğitime katkısının olduğu anlaşılmaktadır (Çankaya, 2019).

Yapılan birçok araştırma, teknoloji ve uygulamalarının öğretim yöntem ve stratejilerine zenginlik kattığını, öğrencilerin aktif bir şekilde öğrenme sürecinde olduğunu ve karşılıklı etkileşimi sağlayarak eğitimin daha verimli hale gelmesinde katkı sunduğunu ortaya koymuştur (Küçükşarac & Sayımer, 2016). Özellikle son yıllarda Fen eğitiminde teknoloji ve uygulamalarına daha fazla yer verilmektedir. Ancak eğitimde en az kullanılan materyallerden ancak eğitime güçlü bir katkı sağlayacak yöntem ve tekniklerden biri artırılmış gerçeklik [AG] teknolojisidir (Sarica, 2019). AG uygulamaları, gerçek dünyayla bağlantısını kesmeksizin sanal nesne ve içeriklerin gerçek ortam görüntülerine dahil edildiği, hem gerçek hem de sanal nesnelerin beraber bir ortamda görülmesini sağlayan bir teknolojidir

(İçten & Bal, 2017). Bu çalışmada, ortaokul yedinci ve sekizinci sınıf öğrencilerinin astronomi okuryazarlık düzeylerinin tespit edilmesi ve öğrencilerin astronomi okuryazarlık düzeyleri üzerine artırılmış gerçeklik (AG) uygulamalarının etkisinin araştırılması amaçlanmaktadır.

Yöntem

Araştırmada yarı deneysel yöntem (quasi-experimental research) ve öntest-sontest kontrol gruplu deneysel desen kullanılmıştır (Büyüköztürk, 2011). Bu çalışmada, deney grupları üzerinde etkisi incelenen bağımsız değişken, artırılmış gerçeklik uygulamalarıdır. Kontrol gruplarında ise, Fen Bilimleri dersi öğretim programında önerilen uygulamalardır. Gruplardaki bağımlı değişken ise, astronomi okuryazarlık düzeyidir. Araştırmada, çalışmaya katılan öğrencilerin astronomi kavramları temelinde, astronomi okuryazarlık düzeyleri öğrenme sürecinden önce ve sonra izlenmiştir. Deneysel araştırmaların temel özelliği bağımsız değişkenlerin kontrol edilebilmesidir (McMillan, 2000, s. 207). Bu araştırmada, olasılık temelli olmayan örnekleme yöntemi kullanılarak, uygun örnekleme yöntemine göre çalışma grubu seçilmiştir. Bu yöntemde, katılımcılar araştırmacının kolay ulaşabileceği, araştırma için gönüllü ve uygun bireyler arasından seçilmektedir (Gravetter & Forzano, 2012). Çalışma grubu, 2021-2022 eğitim-öğretim yılı bahar döneminde Ankara ili merkez ilçesinde bir devlet ortaokulunda öğrenim gören yedinci ve sekizinci sınıf öğrencilerinden ($n_{7.sınıf} = 46$ ve $n_{8.sınıf} = 49$) oluşmaktadır. Çalışma süresince iki deney, iki kontrol grubu olmak üzere dört ayrı sınıf ile çalışılmıştır. Araştırmanın verileri SPSS istatistik programı ile analiz edilmiştir.

Bulgular

Araştırmadan elde edilen verilerin analizi sonucunda ortaokul yedinci ve sekizinci sınıf öğrencilerinin uygulama öncesi astronomi okuryazarlık düzeylerinin düşük seviyede olduğu dikkat çekmiştir. Uygulama sonrasında artırılmış gerçeklik uygulamaları ile yürütülen derslerde deney grubu yedinci ve sekizinci sınıf öğrencilerinin astronomi okuryazarlık düzeylerinin yüksek düzeye ulaştığı gözlenmiştir. Artırılmış gerçeklik [AR] uygulamalarının öğrencilerin astronomi okuryazarlık düzeyleri üzerinde olumlu bir etkiye sahip olduğu tespit edilmiştir. Uygulama sonrasında kontrol grubu öğrencilerinin MEB ders kitaplarında önerilen uygulamalarla yürütülen derslerde astronomi okuryazarlık düzeylerinin orta düzeye ulaştığı görülmüştür. Kontrol grubu öğrencilerinin astronomi okuryazarlık düzeyleri deney grubu öğrencilerine göre daha düşüktür. Özellikle deney grubu öğrencilerinin; astronomi okuryazarlık düzeylerinin duyuşsal ve davranışsal boyutunun oldukça yüksek düzeyde geliştiği ortaya çıkmıştır.

Tartışma ve Sonuç

AG uygulamalarının öğretim yöntemleri arasında etkili bir yöntem olduğu ve öğrencilerin bilişsel, duyuşsal ve davranışsal öğrenmelerine olumlu katkı sağladığı görülmektedir (Abdüsselam, 2014; Abdüsselam & Karal, 2012; Akçayır et al., 2016; Bressler & Bodzin, 2013; Buchner & Zumbach, 2018; Chen et al., 2015; Chiang et al., 2014; Enyedy et al., 2012; Fleck et al., 2014; Hsiao et al., 2012; İbili & Şahin, 2013; Küçük et al., 2014; Lin et al., 2013; Tarng et al., 2021). Uygulamalarının bilginin kalıcılığını artırdığı yönündeki sonuçlara ulaşılmıştır. Buluş Kırıkkaya ve Şentürk (2018) Fen Bilimleri dersi güneş sistemi ve ötesi ünitesi öğretiminin AG destekli uygulama ile gerçekleştirilmesi sonucu deney grubu öğrencileri lehine akademik başarı düzeylerinde anlamlı bir fark olduğu sonucuna ulaşmıştır. Çalışma sonuçlarına göre, artırılmış gerçeklik uygulamalarının, öğrencilerin astronomi okuryazarlık düzeyleri üzerinde etkili olduğu söylenebilir. Kısmi etki büyüklüğü değeri de, çalışmanın sonucunu destekler

niteliktedir. Alanyazın incelendiğinde, AG uygulamalarının öğrencilerin tutum, ilgi, motivasyon gibi duyuşsal kazanımlarına olumlu katkı sağladığı görülmektedir (Buluş Kırıkkaya & Şentürk, 2018; Duman & Öncü, 2016; Delello, 2014; Ersoy , Huang, et al., 2016; Furió et al., 2015; Hsiao et al., 2012; Ibanez et al., 2014; Khan, et al., 2019; Megahed, 2014; Onur, 2021; Özeren, 2020; Pozharina, 2019; Tandoğan, 2019). Özeren (2020) HücreAR adlı AG materyali ile gerçekleştirmesi sürecinden sonra öğrencilerin daha yüksek bir motivasyon ve başarı elde ettikleri görülmüştür. Eski çağlardan başlayan ve hızla gelişen teknoloji ile önemi giderek artan astronomi biliminin okuryazarlığı, bilimsel okuryazarlığının önemli bir parçasıdır. Bu bağlamda, bireylerdeki astronomi okuryazarlığının geliştirilmesine yönelik yapılan çalışmalar oldukça önemlidir.

Öneriler

Bu araştırmada elde edilen sonuçlara göre; çeşitli önerilerde bulunulabilir: Öğrencilerin astronomi okuryazarlık düzeylerinin tespit edilmesi ve öğrencilerin astronomi okuryazarlık düzeyleri üzerine artırılmış gerçeklik (AG) uygulamalarının etkisini tespit üzere yapılan bu araştırma sonucunda; uygulama öncesi öğrencilerin astronomi okuryazarlık düzeylerinin düşük olduğu belirlenmiştir. Bu bakımdan öğrencilerin astronomi okuryazarlık düzeylerini arttıracakları artırılmış gerçeklik uygulamalarına daha çok yer verilebilir. Çalışmada ortaokul 7. ve 8. sınıf öğrencilerinin astronomi okuryazarlık düzeylerini artırıcı etkinliklere yer verilmiştir. Daha sonraki çalışmalarda, eğitimin her kademesinde, öğrencilerin astronomiye yönelik yeteneklerini fark etmelerine olanak tanıyacak çalışmalar yapılabilir.

Appendix

Appendix 1. Astronomy Literacy Scale

CHAPTER 1 (Astronomy Literacy Self-Perception)

1. How much do you think you know about astronomy?

- A. Too much
- B. More
- C. Intermediate
- D. Not much
- E. None

2. How would you describe yourself about doing studies/research on astronomy?

- A. I do a lot of study/research.
- B. I do more work/research.
- A. I do a moderate amount of study/research.
- D. I don't do much study/research.
- E. Never

3. Which of the following contributes the most to learning the subjects and concepts related to astronomy?

- A. Lessons at school
- B. Internet
- C. Television
- D. Article/book/magazine/newspaper
- E. Family/Friends

4. Which of the following do you talk about studies, researches or subjects related to astronomy?

- A. Teachers
- B. Friends
- C. Family
- D. People in the virtual environment
- E. Nobody

5. How often do you talk to people around you about astronomy-related topics?

- A. Too much
- B. More
- C. Intermediate
- D. Not much
- E. None

CHAPTER 2 (The Affective Dimension of Astronomy Literacy)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1. 1. I am interested in astronomy.					
2. 2. I enjoy learning new information about astronomy.					
3. 3. I can easily learn the concepts and subjects related to astronomy.					
4. 4. I make mistakes when explaining astronomy concepts.					
5. 5. Astronomy has no contribution to my daily life.					
6. 6. I don't want to work on the sky.					

CHAPTER 3 (The Behavioral Dimension of Astronomy Literacy)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
7. 1. I observe the sky using sky survey programs (Google sky, sky map, NASA, sky walk etc.).					
8. 2. I watch the sky with the naked eye (without any observation tool) at night when the weather conditions are suitable.					
9. 3. I follow the astronomer or astronauts who work on the sky on social media.					

CHAPTER 4 (Cognitive Dimension of Astronomy Literacy)


	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
10. 1. I can express the geometric shape of the sun.					
11. 2. I can explain the direction, duration and consequences of the Sun's rotation.					
12. 3. I can express the geometric shape of the Earth.					
13. 4. I cannot tell the size of the moon.					
14. 5. I can explain the moon's age.					
15. 6. I can express the geometric shape of the moon.					
16. 7. I cannot explain how stars are formed.					



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

A Comparative Analysis of Turkish and English Language Curriculum as Foreign Languages

 Nilay Çağlayan Dilber, Asst. Prof. Dr., Corresponding Author
Kırşehir Ahi Evran University, Türkiye
nilaynilaycaglayan@gmail.com
Orcid ID: 0000-0001-5314-5754

Article Type: Research Article
Received Date: 05.06.2023
Accepted Date: 11.10.2023
Published Date: 30.10.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: 10.29329/tayjournal.2023.610.02

Citation: Çağlayan Dilber, N. (2023). A comparative analysis of Turkish and English language curriculum as foreign languages. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 706-737.

Abstract

In Türkiye, many languages are taught as foreign languages, especially English, which is taught within the framework of the curriculum determined by the Ministry of National Education [MoNE] from primary education level onwards. Turkish, on the other hand, is taught as a foreign language both in Türkiye and abroad. The aim of this study is to compare the Turkish language curriculum as a foreign language with the English teaching programs in terms of basic foundations and implementation methods. The document analysis method was used to examine the MoNE Turkish Language Curriculum as a Foreign Language (MoNE, 2020), the English Course Curriculum (Primary School Grades 2, 3, 4, 5, 6, 7, and 8) (MoNE, 2018a), and the Secondary School English Course (Grades 9, 10, 11, and 12) Curriculum (Mone, 2018b). Through document analysis, it has been revealed that the Turkish Language Curriculum as a Foreign Language (Mone, 2020) has a greater diversity and currency of basic foundations compared to the English Curriculum. Furthermore, in terms of implementation methods, the Turkish Language Curriculum as a Foreign Language (Mone, 2020) is more detailed.

Keywords: Turkish teaching, English teaching, foreign language teaching, curriculum.

Introduction

Language, as Chomsky also indicated, is a natural ability. An individual born with the faculty of language gradually acquires it when appropriate environmental conditions are provided and linguistic inputs are generated. Certainly, just like walking or eating, acquiring language also requires a specific process. Once an individual completes certain biological and neural developments over time, they gain the competence to use language and acquire it. However, unlike acquisition, "learning" does not naturally develop as a process. Senemoğlu (2007) has summarized various definitions of learning in the literature by stating the following: learning is a relatively enduring, experience-based change in behavior or potential behavior that cannot be attributed to growth and transient changes in the body. Within the context of this definition, it becomes evident that the concepts of language acquisition and language learning entail two distinct processes with different semantic contents.

When the literature is examined, it is observed that the term "learning" is mostly used in the field of foreign language, while the term "acquisition" is preferred in the domain of native language. The acquisition of a native language takes place in a natural environment where the language is commonly spoken, within social interactions. On the other hand, foreign language learning occurs intentionally in constructed environments, often later in life, and frequently in artificial settings such as language classes (Aydın, 2016). The foreign language learning process, which does not naturally occur, requires the guidance and supervision of an instructor, following a specific curriculum with the use of certain methods, techniques, and materials (Onursal, 2019).

In the Regulation on Foreign Language Education and Instruction of the Ministry of National Education (MoNE, 2017), the purpose of foreign language education and instruction in formal and distance learning institutions is expressed as follows:

In accordance with the general aims and basic principles of National Education, the aim of education and instruction in the foreign language, considering the goals and levels of schools and institutions, is to enable individuals to acquire listening-comprehension, reading-comprehension, writing, speaking skills in the foreign language, to communicate in the language they have learned, and to develop a positive attitude towards foreign language teaching.

In line with this stated objective, foreign language curriculums and instructional materials, including textbooks and educational tools, are being developed in accordance with the foreign language teaching curriculum and educational programs. The instructional curriculum can be defined as the entirety of lesson plans, encompassing all processes related to learning and teaching, both within and outside the school context (Demirel, 2015a; Küçükahmet, 2008; Saracoğlu, 2019). In our country, foreign language teaching in institutions and schools affiliated with the Ministry of National Education is conducted within the framework of the designated existing instructional curriculums.

In Türkiye, the systematic foreign language teaching has a historical context that encompasses the Ottoman Empire era. During that period, languages such as Arabic, French, English, Persian, Bulgarian, Italian, and Greek were known to be taught, corresponding to the regions with which the empire had expanded relations. Over time, due to Türkiye's North Atlantic Treaty Organization [NATO] membership and candidacy for the European Union, English has become the primary choice for foreign language teaching in the country (Çakır, 2017; Demirel, 1999).

With the implementation of the Eight-Year Education reform in 1997 in Türkiye, although the traditional approach to foreign language teaching, particularly English, was not completely abandoned, the decision was made to begin foreign language education in schools affiliated with the Ministry of National Education starting from the 4th grade (Haznedar, 2004). In the 2012-2013 academic year, the 4+4+4 education reform was introduced in Türkiye, which lowered the age of starting school to 5 years (1st grade of primary school) and the age of beginning foreign language learning to 6 years (2nd grade of primary school) (Bayyurt, 2014). Accordingly, the Ministry of National Education prepared the English Language Curriculum for Primary Schools, which includes grades 2 to 8, based on the principles of the Common European Framework of Reference for Languages [CEFR], emphasizing a communicative and action-oriented approach (MoNE, 2013). As of 2018, the previous curriculum for primary education has been partially updated for English language teaching at the primary level. This update took into account the opinions and contributions of various stakeholders, including English teachers, universities, and non-governmental organizations, and was revised to encompass values education within the same philosophical and pedagogical principles (Yaman, 2018, p. 163). For secondary education level (high school), English language curriculums were designed specifically for Anatolian high schools after the decision to transform general high schools into Anatolian high schools in 2010. These curriculums were structured in alignment with the Common European Framework of Reference for Languages [CEFR] and were finalized as the Ministry of National Education Secondary Education English Course (9th, 10th, 11th, and 12th grades) Curriculum in 2018.

In the present day, in addition to English being taught as a foreign language, Türkiye offers foreign language instruction in several other languages such as German, Chinese, French, Italian, and Arabic, alongside teaching Turkish as a foreign language. Although there is no official historical record of when Turkish as a foreign language instruction began, its origins can be traced back to the emergence of the Turkish people (Durmuş & Okur, 2013). Over the past three decades, Türkiye's active role in international relations, the increase in the number of foreign students coming to Türkiye for higher education, the prominence of Anatolia as a cradle of civilizations in terms of tourism, the popularity of Turkish TV series abroad, and Türkiye's open-door policy for incoming migrants have all made it necessary for Turkish to be used as a means of communication. As a result of these factors, the teaching of Turkish as a foreign language has become increasingly important to meet the communication needs

of various international contexts and to facilitate interaction with foreigners who are either studying, working, or visiting Türkiye. In recent times, the inclusion of Turkish language instruction in school curriculums among European Union countries, the growing interest in Turkish language and culture in all the countries along the historical Silk Road, and the international significance of the Turkish language have become evident (Demirel, 2015b, p. 6). Furthermore, with the onset of the Syrian civil war in 2011, a vast number of refugees from Syria sought asylum in the Republic of Türkiye, ranging from three-year-old children to seventy-year-old adults. As a result, Turkish has become the target language for refugees to sustain their daily lives (Melanlıoğlu, 2020). Therefore, Turkish continues to fulfill its role worldwide as both a native language spoken by millions and a foreign language taught to learners around the globe (Güzel & Barın, 2013).

Both domestically and internationally, the teaching of Turkish as a foreign language is carried out by various institutions and organizations, including the Ministry of National Education, the Presidency for Turks Abroad and Related Communities, the Türkiye Maarif Foundation, the Türkiye Diyanet Foundation, and the Yunus Emre Institute, as well as Turkish language teaching centers [TÖMER] within universities. The Ministry of National Education first published the "Turkish Language Curriculum as a Foreign Language" in 1986, followed by a revised edition in 2000. In 2015, Ankara University's Turkish and Foreign Languages Research and Application Center [TÖMER] prepared the "Turkish Language Curriculum as a Foreign Language". However, these curriculums have not been well known in the literature and have not been able to achieve standardization in the teaching of Turkish as a foreign language (Şen, 2016). Until today, the need for establishing an international standard for the teaching carried out by all these institutions has highlighted the necessity of revising the Turkish language curriculum for foreigners. Responding to this fundamental need, the Türkiye Maarif Foundation prepared the "Turkish Language Curriculum as a Foreign Language" (MoNE, 2020) based on the Common European Framework of Reference for Languages [CEFR]. Subsequently, an additional protocol was signed between the Ministry of National Education and the Türkiye Maarif Foundation on 18th August 2017, in accordance with the cooperation protocol, and curriculum guidelines for teaching Turkish as a foreign language within the country were added to the existing curriculum. The curriculum is designed according to the language proficiency levels specified in the "Common European Framework of Reference for Languages" (A1, A2, B1, B2, C1) and is intended for formal education (preschool, primary school, middle school, and secondary education) as well as for general education (MoNE, 2020, p. 5). The updated curriculum is now known as the "MoNE Turkish Language Curriculum for Foreigners (MoNE, 2020)" and has been finalized.

When looking at the literature on foreign language teaching in Türkiye, various research studies are available that examine the problems, explore teacher and student perspectives, and analyze teaching materials. Additionally, there are studies that focus on foreign language curriculums. Given that the subject of this research includes English and Turkish as foreign languages, some examples of studies that investigate the curriculums for these languages are as follows: Ertem (2023) conducted a comprehensive examination of the English language curriculum at the secondary education level; Yücel et al. (2017) determined teacher perspectives regarding English language curriculums; Merter et al. (2012) and Dursun et al. (2017) identified teacher views on English language curriculums; Haznedar (2004) evaluated the English language curriculum at the primary education level; Dağistan Yalçınkaya and Beydoğan (2019) examined the English language curriculum at the primary education level; Şahin and Aykaç (2019) conducted comparative analyses of foreign language curriculums in European

countries; Ipek Eğilmez (2018) conducted a comparative analysis of mother tongue teaching programs across countries. These studies have contributed valuable insights into foreign language teaching and its curriculums in Türkiye, offering significant contributions to the field of foreign language education. When examining the studies that focus on teaching Turkish as a foreign language, the following works can serve as fundamental examples: Aydın and Tunagür (2021), Balcı and Melanlıoğlu (2020), Erdil and Açık (2021), Kaya and Kardaş (2020), Kılıç (2021), Koyuncu (2021), have analyzed and examined the Maarif Foundation Turkish Language Curriculum (2020) from various aspects. Demirel (2015b) and Ulutaş and Kara (2019) have conducted an examination of the Turkish Language Curriculum using the example of TÖMER. Görgüç et al., (2021) have comparatively analyzed the Ministry of National Education Turkish Language Curriculum (MoNE, 2020) with the preschool curriculum and the primary school English language curriculum. Starting from the year 2020, the Ministry of National Education has prepared curriculums for teaching Turkish as a foreign language, including preschool, elementary, and secondary education levels, aligning them with international standards. Therefore, the Ministry of National Education Turkish Language Curriculum (MoNE, 2020) is a very recent and up-to-date curriculum. On the other hand, as mentioned above, English language teaching as a foreign language has been carried out in various curriculums for many years in our country. Comparatively examining the curriculums of these two languages in terms of various variables will provide a new perspective on foreign language curriculums in Türkiye. Thus, the aim of this study is to compare the Ministry of National Education Turkish Language Curriculum (MoNE, 2020) with the Ministry of National Education English Language Curriculum (Primary School Grades 2, 3, 4, 5, 6, 7, and 8) (MoNE, 2018a) and the Ministry of National Education Secondary School English Language Curriculum (Grades 9, 10, 11, and 12) (MoNE, 2018b). By doing so, the study aims to analyze the content of foreign language curriculums published by the Ministry of National Education in terms of their basic principles and implementation methods, and thereby contribute to the field. The following questions were investigated in the study in line with the stated objectives:

1. Do the Turkish Language Curriculum for Foreigners (MoNE, 2020) and the English Language Curriculums (MoNE, 2018a; MoNE, 2018b) differ from each other in terms of their basic principles?
2. Do the Turkish Language Curriculum for Foreigners (MoNE, 2020) and the English Language Curriculums (MoNE, 2018a; MoNE, 2018b) differ from each other in terms of their implementation methods?

Method

The qualitative research approach has been adopted in line with the aim of the study, and it has been described as the Turkish Language Curriculum for Foreigners [TURC] (MoNE, 2020), the Primary School English Language Curriculum [PriEngC] (MoNE, 2018a) and the Secondary School English Language Curriculum [SecEngC] (MoNE, 2018b). Qualitative research provides an in-depth picture of a specific individual, group, situation, or problem (Fraenkel & Wallen, 1996). This research is of the nature of a case study among qualitative research models. Qualitative research is conducted to identify the natural contexts of the subject, event, phenomenon, perception, or issues under investigation, and techniques such as interviews, observations, and document analysis are generally used in qualitative research (Ekiz, 2003; Karasar, 1999; Yıldırım & Şimşek, 2013). Since the sources of research data consist of the Turkish Language Curriculum as a Foreign Language and English curriculums, document analysis

has been employed. In this context, the research constitutes a descriptive case study. A case study is a research strategy aiming to understand a social phenomenon of an individual or a small group in their natural settings. The purpose of a case study is, for example, to provide a detailed description (Bloor & Wood, 2006). In this study, a detailed comparative description of the Turkish Language Curriculum as a Foreign Language and English curriculums has been attempted.

The Source of the Data

In the study, since the data source consists of the curriculum approved by the Ministry of National Education, purposive sampling method of criterion sampling has been utilized. Criterion sampling is a sampling method in which the researcher selects a sample based on specific criteria or qualities. In this method, individuals or units to be included in the sample are chosen because they possess a certain characteristic or quality. Thus, a sample group with a significant feature related to the research question or purpose is formed (Teddlie & Yu, 2007; Yıldırım & Şimşek, 2013).

The data source of the research consists of the Ministry of National Education Turkish Language Curriculum for Foreigners [TURC] (MoNE, 2020), the Ministry of National Education Primary School English Language Curriculum (Grades 2, 3, 4, 5, 6, 7, and 8) [PriEngC] (MoNE, 2018a), and the Ministry of National Education Secondary School English Language Curriculum (Grades 9, 10, 11, and 12) [SecEngC] (MoNE, 2018b). TURC (MoNE, 2020) is a curriculum that includes explanations and guidelines for preschool, primary school, and secondary school levels. On the other hand, PriEngC (MoNE, 2018a) and SecEngC (MoNE, 2018b) separately address the primary school and secondary school levels in two different curriculums. Therefore, in the research, the that includes the teaching of Turkish as a foreign language is considered as a single curriculum, while the curriculum that includes English language teaching is treated as two separate curriculums as data sources.

The Data Collection and Analysis

In the study, the document analysis technique, one of the qualitative data collection methods, was used for data collection. As expressed by Yıldırım and Şimşek (2013), document analysis encompasses the analysis of written materials containing information about the phenomena under investigation. The research was conducted following the stages of document analysis. Furthermore, in order to enhance the transferability of this study, detailed descriptions were provided; the data collection process, characteristics of the data source, how they were selected, the data analysis process, and the limitations of the research were presented in detail in the study. In this way, contributions were made to the transferability of the research (Creswell & Miller, 2000).

In the data collection process, the first step involved accessing the documents. The teaching programs were accessed from the relevant access addresses of the Ministry of National Education, as indicated in the bibliography. Subsequently, the authenticity of the documents was verified. As mentioned by Bowen (2009), the documents should include independently recorded images and text, regardless of the researcher. While TURC (MoNE, 2020) is in Turkish, PriEngC (MoNE, 2018a) and SecEngC (MoNE, 2018b) have been published by the ministry in English except for certain explanatory sections in Turkish. The English curriculums were translated into Turkish by the researcher, and an expert in the field was asked to evaluate the translation. The expert confirmed that the translation of the English curriculums was the same as the original text. Thus, the authenticity of the examined documents

was ensured through this verification process. Following this, an analysis study was conducted on the teaching programs.

During the analysis phase, elements encompassing fundamental principles and the implementation manner of the curriculum were examined in all three curriculums to acquire the study's data. Additionally, apart from the aforementioned headings, the curriculums were thoroughly scrutinized in their entirety for each of the three curriculums to attain accurate information. This comprehensive analysis involved investigating the concepts and implementation methods that directly constitute the basis of the curriculum, leading to the findings.

While conducting the analysis concerning the fundamental principles, the concepts and phenomena identified as the core basis of the curriculums were subject to examination. The assessment of whether the curriculum content aligned with the specified fundamental principles was kept separate from the focus of the research. Similarly, when analyzing the curriculums in terms of their implementation methods, the explanations directly related to implementation within the curriculums were scrutinized. Furthermore, aspects such as the level of education, student age, language proficiency, duration of program implementation, and language skills to be acquired were analyzed under relevant headings in relation to the curriculum's implementation.

Ethical Permits of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

This research, as it involves document analysis, does not require ethics committee permission.

Findings

In this section, the findings are presented in line with the research questions, sequentially.

Findings Regarding the Fundamental Principles Included in the Analyzed Curriculums

In this section, the three curriculums have been analyzed in terms of the fundamental principles explicitly stated in the curriculums. While the term "Fundamental Principles" is directly mentioned as a heading in TURC (MoNE, 2020), in PriEngC (MoNE, 2018a) and SecEngC (MoNE, 2018b), the fundamental principles are included within the headings of "Philosophy", "Values Education", and "Key Competencies". In addition to the mentioned headings, all three have been comprehensively examined to identify the concepts directly forming the foundation (basis) of the curriculum.

Table 1. According to the fundamental principles the curriculums include

TURC. (MoNE, 2020)	PriEngC. (MoNe, 2018a)	SecEngC. (MoNE, 2018b)
1. Common European Framework of Reference for Languages (CoE, 2018)	1. Common European Framework of Reference for Languages (CoE, 2001)	1. Common European Framework of Reference for Languages (CoE, 2001)
2. Root Values	2. Root Values	2. Root Values
3. European and Turkish Qualifications Framework	3. European Qualifications Framework	
4. 21st Century Skills		

When looking at Table 1, it can be observed that all three curriculums compared have both common and different fundamental bases. In all three curriculums, the most fundamental basis is expressed as the "Common European Framework of Reference for Languages" (The Common European Framework). Although the English and Turkish language curriculums express the Common European Framework of Reference for Languages in different linguistic forms, it is referred to as the same source and fundamental basis. However, as seen in the table, TURC (MoNE, 2020) includes the Common European Framework of Reference for Languages in its most recently updated form. The updates in TURC (MoNE, 2020) from "The Common European Framework (CoE, 2018)" are as follows:

The Common European Framework of Reference for Languages [CEFR] was initially published in 2001 and has been developed over time with some updates and additions to the text. These changes were published as an additional document titled "Common European Framework of Reference for Languages: Learning, Teaching, Assessment Companion Volume With New Descriptors Provisional Edition" in 2018, alongside the 2001 version. Upon examining the additional document, it is evident that the descriptor criteria for all activities in the reception, production, and interaction domains have been updated. In the interaction domain, the concept of "online" has been added, and descriptor criteria have been defined for this concept. Additionally, the text for the "mediation" domain includes different criteria compared to the 2001 version, specifically for the concepts and communication activities. In terms of language proficiency, the communicative language competence section has been updated in the Common European Framework of Reference for Languages [CEFR], and linguistic and pragmatic competences have been revised with the addition of phonetics to define descriptor criteria. Moreover, new descriptor criteria related to plurilingualism and pluriculturalism have been added. Additionally, while the previous version defined six language proficiency levels as A1, A2, B1, B2, C1, and C2, the updated version includes a seventh language proficiency level labeled as "A1 Pre-Level." The sections that were updated and added to the document in 2018 have been reflected in the Turkish Language Curriculum for Foreigners [TURC] in the sections concerning language use domains, communicative functions, and language objectives (MoNE, 2020, p. 6).

Based on the updated Common European Framework of Reference for Languages [CEFR] from 2018, the Turkish Language Curriculum for Foreigners [TURC] (MoNE, 2020) has linked language use domains and socio-cultural knowledge to themes, and each class and level includes these concepts. Additionally, while the concept of "mediation" is theoretically explained in the curriculum, it is also emphasized that this concept is integrated into the learning process and is considered a part of the achievements within the curriculum.

The PriEngC (MoNE, 2018a) and SecEngC (MoNE, 2018b), as stated in the curriculums themselves, were designed based on the descriptive and pedagogical principles of the Common

European Framework of Reference for Languages [CEFR] from 2001. Both curriculums have adopted the teaching approach, instructional strategies, assessment methods, and language proficiency levels in alignment with the Common European Framework of Reference for Languages [CEFR] as stated in the curriculums. However, the concepts and updates introduced in the Common European Framework of Reference for Languages [CEFR] from 2018 are not present in both PriEngC (MoNE, 2018a) and SecEngC (MoNE, 2018b). Therefore, although these English Language Curriculums and the Turkish Language Curriculum for Foreigners were based on the same foundational source, they may exhibit conceptual differences due to the lack of alignment with the updated version of the Common European Framework of Reference for Languages [CEFR].

As seen in Table 1, another common foundation found in the examined curriculums is "core values." As of 2018, with the updated curriculum, the Ministry of National Education has introduced the term "core values" and identified ten core values associated with different disciplines, including national, spiritual, and universal values. Accordingly, "justice, friendship, honesty, self-control, patience, respect, love, responsibility, patriotism, and altruism" are the core values that should be included in the curriculums.

In all three curriculums, it is stated that each of the core values mentioned above should be instilled in students through the curriculum. In both English language curriculums, it is emphasized that those preparing the teaching materials and teachers should design the materials in a way that is suitable for the students' level and psychology to instill the core values. It is emphasized that stakeholders play a significant role in values education.

One of the other core references found in Table 1 is the "European and Turkish Qualifications Framework". The Turkish Qualifications Framework [TQF] is designed to be compatible with the European Qualifications Framework [EQF] and shows all the qualifications based on learning paths, including primary, secondary, and higher education, as well as vocational, general, and academic education and training programs and other learning pathways (TQF, 2015).

In TURC (MoNE, 2020), it is stated that the curriculum is prepared based on the European Qualifications Framework and the Turkish Qualifications Framework. Although the curriculum does not provide conceptual explanations about the contents of qualifications, it is detailed how students will be facilitated in acquiring certain qualifications in accordance with the Turkish Qualifications Framework.

In PriEngC (MoNE, 2018a), qualifications are presented under the heading "Main Competences in the Curriculum". The European Qualifications Framework is detailed in the curriculum and it is stated that the curriculum includes these qualifications. Additionally, the Ministry of National Education has emphasized the need for revision in all curriculums, including English language curriculums, to incorporate these qualifications. However, there is no specific mention or statement about the Turkish Qualifications Framework in PriEngC (MoNE, 2018a).

In SecEngC (MoNE, 2018b), it is stated that this curriculum is a continuation and includes updates and changes to PriEngC (MoNE, 2018a). However, despite the emphasis in PriEngC (MoNE, 2018a) on the need to include qualifications in all curriculums, including English language curriculums, SecEngC (MoNE, 2018b) does not include both qualifications frameworks.

In Table 1, one of the fundamental bases found in the curriculums is "21st Century Skills." Although there are different perspectives in the literature regarding what constitutes 21st Century

Skills, MoNE (2011) addresses these skills under four main themes in its publication titled "21st Century Student Profile": working methods, thinking methods, tools for work, and integration with the world. Among the examined curriculums, TURC (MoNE, 2020) is the only curriculum where "21st Century Skills" are directly expressed as a fundamental basis. The curriculum states that the selection of themes, achievements, and communicative functions are prepared considering these skills. It is explicitly stated in the curriculum that the teaching materials and activities should also incorporate these skills.

Findings Related to the Implementation of the Examined Curriculums

The findings related to the second research question, "Do the Turkish Language Curriculum as a Foreign Language and English Language Curriculums differ in terms of their implementation?" have been presented under two subheadings. In this section, the findings are not solely based on the contents under the "implementation" headings in the curriculums but are derived from the analysis of all the examined curriculums. First, the implementation of the PriEngC (MoNE, 2018a) and SecEngC (MoNE, 2018b) was discussed, followed by the implementation of TURC. (MoNE, 2020).

Findings Related to the Implementation of English Language Curriculums

The Primary and Secondary Foreign Language Curriculums (MoNE, 2018a; MoNE, 2018b) are English language curriculums designed for students studying in Türkiye. Both curriculums emphasize that they are prepared considering the students' age levels, interests, and needs. Both Primary and Secondary Foreign Language Curriculums describe themselves as action-oriented, communicative, and functional curriculums with a flexible structure. Additionally, both curriculums highlight the interconnectedness between class levels and language proficiency levels. Since the English language curriculums were examined as separate curriculums, the findings related to their implementation are presented separately.

Findings regarding the implementation of the Ministry of National Education English language curriculum (primary school, grades 2, 3, 4, 5, 6, 7, and 8) (MoNE, 2018a): The English Language Curriculum for Primary School (Grades 2, 3, 4, 5, 6, 7, and 8) (MoNE, 2018a) includes students between the ages of six and thirteen. The curriculum acknowledges the wide age range and takes into account differences such as cognitive load, assessment, covered language skills, and tasks. Due to these variations, the curriculum is divided into three learning stages, considering language usage, functions, and teaching materials. The first stage includes Grades 2, 3, and 4; the second stage includes Grades 5 and 6, and the third stage includes Grades 7 and 8. According to Table 2, the English Language Curriculum for Primary School (MoNE, 2018a) aims to start language teaching at the A1 level for students in Grade 2 and reach the A2 level by the end of Grade 8. However, the curriculum does not explicitly specify which sub-levels (e.g., A1.2) correspond to which grades.

Table 2. Implementation model of the Ministry of National Education English Language Curriculum for Primary School (Grades 2, 3, 4, 5, 6, 7, and 8) (MoNE, 2018a).

Grade	Age	Level (CEFR)	Implementation Period (Hours/Week)	Skills
2nd Grade		A1	2	Listening Speaking
3rd Grade		A1	2	Listening Speaking Very Limited Reading Very Limited Writing
4th Grade		A1	2	Listening Speaking Very Limited Reading Very Limited Writing
5th Grade		A1	3	Listening Speaking Limited Reading Very Limited Writing
6th Grade	It is not specified in the curriculum.	A1	3	Listening Speaking Limited Reading Limited Writing
7th Grade		A2	4	Listening (Primary) Speaking (Primary) Reading (Secondary) Writing (Secondary)
8th Grade		A2	4	Listening (Primary) Speaking (Primary) Reading (Secondary) Writing (Secondary)

As seen in Table 2, in PriEngC (MoNE, 2018a), the specified language levels, implementation duration, and skills to be acquired vary for each grade level. Although the curriculum is intended for children aged 6-13, the age of students according to their grades is not specified in the implementation model of the curriculum. For 2nd, 3rd, and 4th-grade students, the weekly implementation duration is stated as 2 hours, for 5th and 6th grades as 3 hours, and for 7th and 8th grades as 4 hours.

In PriEngC (MoNE, 2018a), it is emphasized that teaching practices should particularly focus on listening and speaking skills for 2nd, 3rd, and 4th grades. Looking at Table 2, it is evident that the implementation of the curriculum should include listening and speaking practices for 2nd graders, and for 3rd and 4th graders, it should include listening, speaking, very limited reading, and very limited writing practices. In these grade levels, the curriculum highlights that children will learn the language better through songs, games, and practical activities, and therefore, limited emphasis is given to reading,

writing, and grammar structures, or they are included to a limited extent. Furthermore, the curriculum mentions that homework, projects, and other extracurricular activities for 2nd graders should not exceed ten words in terms of reading and writing tasks.

For 2nd and 3rd grades, implementation recommendations are provided in a separate section in PriEngC (MoNE, 2018a). These implementation recommendations can be summarized as follows: Activities should be carried out in a known context, communication-focused, enjoyable, and educational to increase students' interest and attitude towards English. Enhancing the memorization of what is learned, particularly through songs, and motivating students to sing the songs at home are suggested. Learning between themes should be connected and related to each other. Since reading and writing are the main focus skills, notebooks should not be used in these grades. It is recommended for teachers to use headlines, emphasizing key words or phrases when speaking English.

As seen in Table 2, the skills to be acquired for 5th graders in the curriculum are listening, speaking, limited reading, and very limited writing. For 6th graders, the skills to be acquired are listening, speaking, limited reading, and limited writing. In both of these grade levels, there is a limitation on developing reading and writing skills. In PriEngC (MoNE, 2018a), the skills mentioned as "very limited" are explained to refer to simple and short oral/written texts and materials. It is also mentioned that activities involving reading and writing up to 25 words can be carried out to develop the skills described as "limited."

Looking at Table 2 for 7th and 8th grades, it can be observed that practices focusing on speaking and listening skills at the A2 level should be prioritized, followed by activities to develop writing and reading skills. The curriculum emphasizes that theme-based instructional practices are used to shape the curriculum for these grades. When looking at the achievements in PriEngC (MoNE, 2018a), it is observed that there are differences in terms of the skills to be acquired, as indicated in Table 2. The units prepared for grades 2, 3, and 4 focus on listening and speaking skills, while units for grade 5 emphasize listening, speaking, and reading skills. In grade 6 units, the focus is on listening, oral interaction, oral expression, and reading skills, and for grades 7-8, the units cover listening, oral interaction, oral expression, reading, and writing skills. In PriEngC (MoNE, 2018a), a series of 10 example units are provided for each grade level, and these units are structured around related themes. It is explained that the selected themes for each unit are based on topics from students' daily lives. The curriculum also includes explanations about the materials that can be used for each grade level, emphasizing the importance of using authentic materials, especially.

In PriEngC (MoNE, 2018a), there is a separate section that includes explanations about the general implementation of the curriculum. The implementations can be summarized briefly as follows: It is stated that communication in the classroom should be in English, but Turkish can also be used when necessary. Since the aim of English lessons is to develop students' English communication skills, teachers are advised not to correct students' communication errors immediately and to motivate them to learn. It is emphasized that parents should also be involved in the language learning process, and informing parents about students is highlighted. The importance of providing students with a love and awareness of their native language through foreign language education is also emphasized.

Findings regarding the implementation of the Ministry of National Education secondary school English course (9th, 10th, 11th, and 12th grades) curriculum (MoNE, 2018b): In the introduction section of the Secondary School English Course (MoNE, 2018b), it is stated that this curriculum is a continuation of the Primary School English Course (MoNE, 2018a). Additionally, in the Secondary School English Course (MoNE, 2018b), it is emphasized that English lessons are designed to address all aspects of communicative competence, functions, and the four language skills according to students' age levels and needs. Furthermore, the promotion of student autonomy is highlighted as an important principle in both in-class and out-of-class activities. For the development of student autonomy, it is recommended to provide support and guidance from teachers, peers, learning materials, and learning tasks rather than relying on competition.

Table 3. *Implementation model of the Ministry of National Education Secondary School English Course (9th, 10th, 11th, and 12th Grades) (MoNE, 2018b)*

Grade	Age	Level (CEFR)	Implementation Period (Hours/Week)	Skills
9th Grade	14-14.5	A1 / A2	4	Listening
10th Grade	15-15.5	A2+ / B1	4	Speaking
11th Grade	16-16.5	B1+ / B2	4	Reading
12th Grade	17-17.5	B2+	4	Writing

In SecEngC (MoNE, 2018b), the language levels for high school students have been organized based on the needs of the students, taking into account the Common European Framework of Reference for Languages. As seen in Table 3, the 9th-grade classes begin with A1 level applications, and the goal is for 12th-grade students to graduate at least at B2 level, depending on whether they go to a preparatory class or not. In PriEngC (MoNE, 2018a), it is expected that 8th-grade students graduate at A2 level. However, since the language learning levels and needs of students starting high school may vary, it is stated in SecEngC (MoNE, 2018b) that the teaching practices for 9th-grade have been adapted again according to A1 and A2 levels. Additionally, it is emphasized that the practices designed for 9th-grade students, containing A1 level content, are more advanced in terms of vocabulary and structures compared to PriEngC (MoNE, 2018a).

As seen in Table 3, SecEngC (MoNE, 2018b) has been designed for four hours per week for all classes. However, it is stated in the program that this weekly hour may vary according to institutions. The curriculum emphasizes that each lesson should start with listening and speaking activities to mimic the process of first language acquisition, and then proceed to reading and writing materials.

In SecEngC (MoNE, 2018b), there are explanations regarding the practices to be carried out at each class level as indicated in Table 3. For 9th grade, it is emphasized that linguistic practices should be conducted at the A1 level for students with lower language proficiency, and for those with higher proficiency, A2 level structures should be taught, with a focus on speaking and writing practices at the A1 level. In 10th grade, integrated language skills should be taught, and special emphasis should be given to pronunciation exercises. Throughout all class levels, both teachers and students are expected to constantly communicate in English, which is also highlighted in the curriculum.

The curriculum has been prepared with a thematic approach, and for each class, 10 themes have been included in the curriculum. In order to meet the interests and needs of the target students, the themes for each class were determined through a survey conducted with a focus group of students from grades 9 to 12. The curriculum includes syllabi for each theme, which contain language functions and useful language, language skills and achievements, as well as material and task suggestions. While it is

emphasized that all four fundamental language skills should be integrated throughout all class levels, there is a particular emphasis on practices related to speaking and listening skills, which should be predominant in the curriculum.

In SecEngC (MoNE, 2018b), the number of new words to be learned in each lesson is limited to seven in order to improve vocabulary in all class levels. The specific words to be taught in each theme are not mentioned in the curriculum; the selection of words to be taught is left to the discretion of teachers and material developers, taking into consideration the relevance to the theme.

In the curriculum designed for 9-12 grade levels, there is a particular emphasis on the use of both in-class and out-of-class teaching materials, and detailed explanations are provided about instructional materials. The curriculum aims to provide students with auditory and linguistic input through materials while also teaching the language's culture. To achieve this, the use of authentic materials such as documentaries and films is recommended. Additionally, the curriculum encourages students to use technology, and it is mentioned that online materials can also be adapted into the curriculum.

Findings regarding the implementation of the Turkish as a foreign language curriculum: The Ministry of National Education Turkish as a Foreign Language Curriculum (MoNE, 2020) has been designed for the teaching of Turkish both domestically and internationally. Therefore, variations in implementation are addressed in the syllabus and guidelines to accommodate different contexts. The curriculum includes diverse syllabi and justifies the reasons behind these variations due to differences in domestic and international settings. As mentioned in the first findings of the research, the curriculum is based on the Common European Framework of Reference for Languages (2018), and the descriptions of language proficiency levels in the curriculum are also derived from this framework. While the curriculum exhibits diversity in terms of domestic and international applications, age groups, and language proficiency levels, it follows a communicative approach with a focus on functional, communicative, task-oriented, and skill-based elements. Consequently, the curriculum adopts a spiral, thematic, functional, communicative, task-based, and skill-oriented approach, as explicitly stated.

The curriculum is described as flexible because the application will vary depending on the country and cultures in which it is implemented. Therefore, while the core elements under the headings of vocabulary and language structures are fundamental, the program emphasizes that different structures and words can also be taught according to the specific needs and context of each implementation location.

The Ministry of National Education's Turkish as a Foreign Language Curriculum (MoNE, 2020) includes detailed syllabi that can be applied to students' learning levels, ages, and proficiency levels both domestically and abroad. The syllabi contain essential language skills-related achievements, communicative functions associated with these achievements, language structures required by communicative functions, and the components of vocabulary relevant to the theme (MoNE, 2020, p. 16). In Table 4, the syllabi for abroad, and in Table 5, the syllabi for domestic settings, the minimum duration-based application models according to the students' learning levels are presented in the curriculum.

Table 4. *The Ministry of National Education's Turkish as a Foreign Language Curriculum (MoNE, 2020) implementation model for abroad*

Grade	Age	Level (CEFR)	Implementation Period	Skills
Preschool	Month 36-48	Beginning I	72 Hours	Listening/Viewing
	Month 49-60	Beginning II	72 Hours	Speaking
	Month 61-72	Beginning III	72 Hours	Listening/Viewing Speaking Early Literacy Skills
Elementary School	7	A1.1	72+72 Hours	Listening/Viewing Speaking Reading (Pre-Literacy) Writing (Pre-writing)
	8	A1.2	72+72 Hours	Listening/Viewing
	9	A1.3	72+72 Hours	Speaking
	10	A1.4	72+72 Hours	Reading Writing
Middle School	11	A1	144 Hours	Listening/Viewing
	12	A2.1	144 Hours	Speaking
	13	A2.2	144 Hours	Reading
	14	A2.3	144 Hours	Writing
High School	-	A1	144 Hours	
	-	A2	144 Hours	Listening/Viewing
	-	B1	144 Hours	Speaking
	-	B1+	144 Hours	Reading
	-	B2	144 Hours	Writing
	-	C1	144 Hours	

Table 5. *The Ministry of National Education's Turkish as a Foreign Language Curriculum (MoNE, 2020) domestic implementation model*

Grade	Age	Level (CEFR)	Implementation Period	Skills	
Preschool	36-48 Month	Beginning I	72 Hours	Listening/Viewing	
	49-60 Month	Beginning II	72 Hours	Speaking	
	61-72 Month	Beginning III	72 Hours	Listening/Viewing Speaking Early Literacy Skills	
Elementary School	7-10	A1	A1.1	60 Hours	Listening/Viewing Speaking Reading (Pre-literacy) Writing (Pre-writing)
			A1.2	60 Hours	
			A1.3	60 Hours	Listening/Viewing
		A2	A1.4	60 Hours	Speaking
			A2.1	120 Hours	Reading
			A2.2	120 Hours	Writing
Middle School	11-14	A1	A2.1	120 Hours	Listening/Viewing
			A2	120 Hours	Speaking
			A2.2	120 Hours	Reading
High School	15 +	A1	A2	120 Hours	Writing
			A2	240 Hours	Listening/Viewing
		B1	B1	120 Hours	Speaking
			B1+	120 Hours	Reading
			B2	240 Hours	Writing
		C1	240 Hours		

According to Tables 4 and 5 in TURC (MoNE, 2020), different levels of implementation models are designed for each educational level for both domestic and international settings. As children encounter Turkish for the first time, the curriculum starts with the preschool level. The initial level includes A1 pre-elementary and A1 levels, targeting the appropriate achievements for the preschool period. Additionally, the developmental characteristics of preschool children provide a common ground, resulting in similar implementation models for both domestic and international settings. When preparing the curriculum for preschool, the basic principles of the MoNE Preschool Education Curriculum (2013) have been taken into consideration. Preschool practices are divided into three levels: 36-48 months, 49-60 months, and 61-72 months, based on the developmental characteristics of each age group. The curriculum includes appropriate achievements for the preschool level in accordance with their age-related developmental characteristics. According to this, there are 31 achievements for speaking skills and 31 achievements for listening skills, and early literacy skills are included for children aged 61-72 months. In addition to developing language skills in the preschool period, the curriculum aims to enhance cognitive, affective, and psychomotor skills according to the needs of children. Therefore, a spiral and play-based approach is emphasized for the preschool level in the curriculum. Syllabi have been created for each of the three levels in the preschool period. These syllabi, targeting communicative language teaching, include achievements, communicative functions, vocabulary, and language expressions. The syllabi consist of 10 themes, and each level includes achievements that build upon and repeat the previous ones. The minimum application time for each level is stated as 72 hours. The section on syllabi according to levels provides more detailed explanations for the preschool level compared to other educational levels. The curriculum includes specific details regarding general objectives, principles of Turkish language teaching, teacher's role, methods and techniques, educational environment and materials, classroom language and instructions, assessment and evaluation, and achievements for preschool Turkish language teaching practices.

According to Table 4 and Table 5, the curriculum is designed for the age group of 7-10 years both for domestic and international implementations. In the international application of the curriculum, for elementary school, level divisions (A1.1, A1.2, A1.3, A1.4) are made according to age groups within A1 level, and syllabi are prepared accordingly. In the domestic implementation, syllabi are provided for both A1 (A1.1, A1.2, A1.3, A1.4) and A2 (A2.1, A2.2) levels for elementary school. The reason for including the A2 level in the domestic implementation is explained as enabling students to be exposed to the target language in a natural environment and facilitating their adaptation to the formal education system more quickly. For the elementary school level, like other educational levels, the curriculum includes 10 different themes in the syllabi. Additionally, there is a starting/preparatory theme that covers the transition to primary school and includes preschool achievements. The skills to be acquired by students at the elementary school level include reading, writing, speaking, and listening/viewing, along with readiness skills for reading and writing. The curriculum includes the stages of phonics-based reading and writing instruction and the initial reading and writing achievements under the heading of "Reading and Writing Instruction for Primary Education." While creating the syllabi in the curriculum, the MoNE Turkish Language Curriculum and Turkish Language and Turkish Culture Curriculum are taken into consideration. Additionally, it is emphasized that phonics-based reading and writing instruction practices are applicable for the 1st grade of primary education, and for other grades, reading and writing instruction should be tailored according to the students' readiness levels. For students who are already literate in their native language, alphabet instruction will be sufficient. It is also highlighted

that initial reading and writing instruction should progress simultaneously with Turkish language instruction. When looking at the minimum application times for the primary school syllabi, there are differences between domestic and international implementations. While the minimum application time for each level is 72+72 hours in international applications, it is specified as 60 hours for A1 level and 120 hours for A2 level in domestic implementations.

The curriculum's implementation model for the 2nd stage of primary education, covering the age group of 11-14, shows differences in language levels between domestic and international implementations, as seen in Table 4 and Table 5. In international applications, the curriculum emphasizes the A2 level (A2.1, A2.2, A2.3) for middle school students, indicating that the A1 level is the starting point for new middle school students. For domestic implementations, the curriculum starts with the A1 level and continues with A2 (A2.1, A2.2), and additionally includes syllabi for the B1 level. The curriculum includes 10 different themes for both domestic and international implementations at the middle school level. For international implementations, the minimum implementation time for all levels (A1 and A2) for middle school students is set at 144 hours. For domestic implementations at the middle school level, the minimum implementation times are 240 hours for the A1 level, and 120 hours each for the A2 and B1 levels.

Looking at Table 4 and Table 5, the curriculum's implementation model for the secondary education level shows similarities in terms of targeted language proficiency levels for both domestic and international implementations. The curriculum emphasizes that the targeted level for secondary education students is B2 and that both domestic and international implementations start with a review of A1 and A2 levels. Additionally, the curriculum includes syllabi for the C1 level, which is designed to cater to specific needs of students at the implementation location and considerations like the school system for high school students. As with other levels, the curriculum for secondary education also includes 10 different themes in the syllabi. The minimum application time for international implementations for secondary education students is set at 144 hours for each level (A1, A2, B1, B2, C1). For domestic implementations targeting secondary education students, the minimum application time is set at 240 hours for the A1, A2, B2, and C1 levels, and 120 hours for the B1 and B1+ levels.

The curriculum includes 21 recommendations under the title "Suggestions for the Implementation of the Curriculum" to make the teaching of Turkish as a foreign language more effective at all educational levels. The recommendations for implementation can be summarized as follows:

The achievements are placed in a spiral and consecutive order based on the themes in the curriculum, so it is necessary to follow the themes to acquire the achievements. In grammar instruction, functionality should be prioritized over rules. All language skills should be activated and integrated through various activities and applications. Extra-curricular activities and practices should be included to involve families in the teaching process. Teachers' feedback should be constructive to enhance students' self-confidence and attitudes. In-class and out-of-class activities should be diversified. During assessment and evaluation, students' readiness and progress throughout the process should be taken into account, and assessment tools should be prepared according to their age and level. Individual work should be planned considering the characteristics of students' native languages. The use of a language other than standard Turkish should be avoided during the learning process. Cultural elements should be included in activities and materials for teaching. For students' practical use in their daily lives, sentence patterns like "Can you help me?" should be taught regardless of grammar structure. Teaching

materials for online environments should be prepared for students' use. Weekly class hours can be adjusted as needed, and additions can be made to the themes in the curriculum. The names of the themes can be changed in teaching materials.

Discussion and Conclusion

This research compared the core concepts and implementation methods of the current MoNE Turkish as a Foreign Language Curriculum (MoNE, 2020), the MoNE English Language Curriculum (Primary School Grades 2, 3, 4, 5, 6, 7, and 8) (MoNE, 2018a), and the MoNE Secondary School English Language Curriculum (Grades 9, 10, 11, and 12) (MoNE, 2018b). Based on the findings of the study, the following conclusions have been reached:

In terms of foundational principles, all three foreign language curriculums compared, Turkish as a Foreign Language Curriculum, MoNE English Language Curriculum (Primary School Grades 2, 3, 4, 5, 6, 7, and 8) (MoNE, 2018a), and MoNE Secondary School English Language Curriculum (Grades 9, 10, 11, and 12) (MoNE, 2018b), consider the Common European Framework of Reference for Languages [CEFR] as the primary basis. However, a significant difference arises in the fact that the English Language Curriculums refer to the CEFR version from 2001, while the Turkish as a Foreign Language Curriculum is based on the updated version of the Common European Framework of Reference for Languages (2018). This distinction in the source of reference leads to conceptual differences in the structuring and content of the curriculums, even though they all originated from a common foundation.

In the analyzed curriculums, the only common foundational element is the core values. As of 2018, with the updated curriculum, the Ministry of National Education has emphasized the inclusion of core values in all educational curriculums. All three curriculums reviewed state that core values form the basis for developing the curriculums. However, none of the curriculums clearly specify in which sections the core values are included as content. In their study examining the values in the Secondary School English Language Curriculum and textbooks, Çoban and Akyol (2020) found that the curriculum's content did not fully reflect the core values. Therefore, further research on the inclusion of core values in the curriculums, considering the extent to which the foundational elements are concretely defined, would be indicative of the curriculum's basis.

Based on the analysis of foundational elements in the curriculums, it has been found that the Turkish Language Curriculum as a Foreign Language is based on both the European Framework and the Turkish Competencies Framework, while the Primary School English Language Curriculum is solely based on the European Framework. The Secondary School English Language Curriculum does not mention any foundational elements related to competency frameworks. Therefore, it can be said that the Turkish Language Curriculum as a Foreign Language is more comprehensively established based on competency frameworks.

The only curriculum that references 21st-century skills as its foundational element is the Turkish Language Curriculum as a Foreign Language. Aydın and Tangür (2021), in their study evaluating the Turkish Language Curriculum (MoNE, 2020) in terms of 21st-century skills, found that the curriculum is compatible with these skills. On the other hand, Çelebi and Altuncu (2019) assessed the achievements in the 9th-grade English Language Curriculum for secondary education in terms of 21st-century skills and concluded that the curriculum did not adequately address these skills. These studies align with the findings of the current research.

In general, when comparing the Turkish Language Curriculum as a Foreign Language (MoNE, 2020) with English Language Curriculums, it can be concluded that the content of the Turkish curriculum is constructed based on more diverse and varied foundational elements. However, it is important to note that this study focused on how the foundational elements were expressed in the curriculum. Therefore, conducting different studies that analyze how the stated foundational elements are actually reflected in the content of foreign language curriculums would provide more clarity and insight into the results.

The Turkish Language Curriculum as a Foreign Language and the English Language Curriculums aim to bring students at the primary and secondary education levels to similar language proficiency levels by the end of the academic year. However, both the Primary School English Language Curriculum (MoNE, 2018a) and the Secondary School English Language Curriculum (MoNE, 2018b) do not have detailed classifications (such as A1.1) regarding language proficiency levels at each grade level. The descriptions of language levels in the English curriculums are more broadly defined. In contrast, the Turkish Language Curriculum as a Foreign Language provides detailed language proficiency levels for each grade level, including the preschool curriculum. This curriculum covers language teaching both domestically and abroad, allowing for flexibility in presenting language levels. Additionally, the curriculum includes a separate list of achievements and language structures for each language proficiency level, providing convenience for educators and practitioners.

The Turkish Language Curriculum as a Foreign Language stands out from the English Language Curriculums in terms of including the Turkish language curriculum for the preschool period. For the preschool period, the curriculum defines language proficiency levels based on the updated version of the Common European Framework of Reference for Languages (2018) and provides detailed in-class applications. In Türkiye, English language teaching typically begins in public schools starting from the 2nd grade, which is why the English Language Curriculums examined in this study cannot be evaluated for this level. However, a different research could be conducted by comparing the Turkish Language Curriculum as a Foreign Language with the MoNE Private Preschool English Language Curriculum (MoNE, 2016) to explore differences and similarities between the curriculums.

The Turkish Language Curriculum as a Foreign Language emphasizes that it benefits from various curriculums in terms of its breadth and content. Therefore, it can be said that this curriculum contains more detailed contents compared to English language curriculums in terms of its implementation.

The analysis of the curriculums indicates that there are differences in terms of the skills to be acquired in practice. The Primary English Language Curriculum focuses on listening and speaking skills for elementary school level students. Additionally, it suggests that students may have limited or very limited exposure to reading and writing skills until they reach 7th and 8th grade. On the other hand, the Turkish Language Curriculum as a Foreign Language includes four basic skills from the 1st grade onwards, with specific achievements and practices for each skill. Evaluating the outcomes of these differences in terms of student achievement can help determine which curriculum is more effective in foreign language teaching.

The implementation durations of English Language Curriculums are provided in terms of weekly hours in both curriculums. However, in the Turkish Language Curriculum as a Foreign Language, the

minimum application duration required for each language level is specified at the class level. It can be said that the specified durations in the English curriculums are relatively shorter compared to the Turkish language curriculum as a foreign language.

As a conclusion, the Turkish Language Curriculum as a Foreign Language (MoNE, 2020) is a detailed program in terms of its implementation method, including language proficiency levels, educational levels, duration of implementation, and skills to be acquired. The program provides more detailed information on lesson plans, themes, objectives, language structures, and assessment methods for the implementation of the teaching program. This makes it more convenient for teachers, textbook authors, and instructional material creators. The program also includes more comprehensive details about the implementation compared to the English Curriculums. Although the English Curriculums also provide explanations for the implementation method, they are more limited compared to the Turkish language curriculum. Additionally, the basic foundations on which the curriculums are based show more diversity in the Turkish Language Curriculum as a Foreign Language (MoNE, 2020) compared to the English Curriculums.

Recommendations

In general, it can be concluded that the content of the Turkish Language Teaching Program as a Foreign Language (MoNE, 2020) is based on different and diverse foundations compared to the English Teaching Programs. However, this study focused on the expression of basic foundations in the programs. Therefore, different studies examining how well and in what way the foreign language teaching programs reflect the expressed basic foundations in their content will clarify the results.

The Turkish Language Teaching Program as a Foreign Language differs from the English Teaching Programs in terms of including a Turkish language teaching program for preschool education. For the preschool period, the program determines language proficiency levels based on the updated version of the Common European Framework of Reference for Languages (2018) and covers in-class applications in detail. English teaching, on the other hand, starts from the 2nd grade in state schools in our country; therefore, the English Teaching Programs reviewed in this study couldn't be evaluated in terms of this educational level. However, a comparison between the MoNE Private Preschool English Teaching Program (MoNE, 2016) and the Turkish Language Teaching Program as a Foreign Language can be made in a different research context.

References

- Aydın, B. (2016). Ruhdilbilim, bilişsel dilbilim ve dil öğretimi [Psycholinguistics, cognitive linguistics and language teaching]. In E. Korkut & İ. O. Ayırır (Eds.), *Dil bilimleri ve dil öğretimi* [Linguistics and language teaching]. (pp. 227-260). Seçkin.
- Aydın, E., Tangür, M. (2021). Yabancı dil olarak Türkçe Öğretimi Programı'nın 21. yüzyıl becerileri açısından incelenmesi [Examination of the Curriculum of Turkish as a Foreign Language in terms of 21st century skills]. *Journal of Bayburt Education Faculty*, 16(32), 349-374.
- Balcı, M., & Melanlıoğlu, D. (2020). Türkçenin yabancı dil olarak öğretimi programı üzerine [On the curriculum of teaching Turkish as a foreign language]. *Kırıkkale University Journal of Science*, 10(2), 173-198.
- Bayyurt, Y. (2014). 4+ 4+ 4 Eğitim sisteminde erken yaşta yabancı dil eğitimi [Early foreign language education in the 4+4+4 Education system]. *Proceedings of the Foreign Language Education Workshop* (12-13 October 2012), (pp. 117-127). Hacettepe Üniversitesi.
- Bloor, M., & Wood, F. (2006). *Keywords in qualitative methods: A vocabulary of research concepts*. Sage.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40.
- Council of Europe [CoE]. (2001). Common European framework of reference for languages: Learning, teaching, assessment. modern languages division. Cambridge University.
- Council of Europe [CoE]. (2018). *The CEFR companion volume with new descriptors*. <https://rm.coe.int/common-european-framework-of-reference-for-languages>
- Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124-130.
- Çakır, A. (2017). Türkiye'de YÖK öncesi ve sonrası yabancı dil eğitimi [Foreign language education in Turkey before and after CoHE (Council of Higher Education)]. *Journal of Language Research (JLR)*, 1(1), 1-18.
- Çelebi, M., & Altuncu, N. (2019, April 26-27). 21. yüzyıl becerilerinin İngilizce öğretim programında yeri [The place of 21st century skills in the English teaching curriculum]. 6th International Multidisciplinary Studies Congress Full Text Proceedings, 231-244. Gaziantep, Türkiye.
- Çoban, A., & Akyol, Z. (2020, February 7-8). *Değerler açısından İngilizce öğretim programı ve ders kitaplarının incelenmesi* [Analyzing English curriculum and textbooks in terms of values]. ATLAS International Congress on Social Sciences 5., 264-276. Diyarbakır, Türkiye.
- Demirel, Ö. (1999). *İlköğretim okullarında yabancı dil öğretimi* [Foreign language teaching in primary schools]. Milli Eğitim Basımevi.
- Demirel, Ö. (2015a). *Eğitimde program geliştirme kuramdan uygulamaya* [Program development in education: from theory to practice]. Pegem Akademi.
- Demirel, Ö. (2015b). Yabancı dil olarak Türkçe öğretim programı: TÖMER örneği [Turkish language teaching program as a foreign language: the example of TÖMER]. *Journal of Language*, 166/1, 5-15. <https://dspace.ankara.edu.tr/xmlui/bitstream/handle/20.500.12575/62674/22368.pdf?sequence=1&isAllowed=y>
- Durmuş, M., & Okur, A. (2013). *Yabancılar için Türkçe öğretimi el kitabı* [Handbook for teaching Turkish to foreigners]. Grafiker.
- Dursun, F., Bedir, S. B., & Gülcü, E. Ö. (2017). Lise İngilizce dersi öğretmenlerinin öğretim programına ilişkin görüşlerinin incelenmesi [Teachers' views on English course curriculum]. *Journal of National Education*, 46(216), 135-163.
- Ekiz, D. (2003). *Eğitimde araştırma yöntem ve metodlarına giriş* [Introduction to research methods and methodologies in education]. Anı.
- Erdil, M., & Açıık, F. (2021). Türkiye Maarif Vakfı Türkçenin yabancı dil olarak öğretimi programı ile Türkçe öğretim setlerinde dil bilgisi içeriklerinin incelenmesi [Investigation of grammar contents in Turkey Maarif Foundation's Teaching Turkish as a Foreign Language Program and in Turkish teaching sets]. *International Journal of Languages' Education and Teaching*, 9(4), 129-161.
- Ertem, Z. S. (2023). Ortaöğretim İngilizce öğretim programlarındaki işlevler ve öğrenme çıktılarının bilişsel düzeylerinin değerlendirilmesi [Evaluation of the cognitive levels of functions and learning outcomes in secondary education English curricula]. *RumeliDE Journal of Language and Literature Studies*, (32), 1402-1418.

- Fraenkel, J. R., & Wallen, N. E. (1996). *How to design and evaluate research in education*. McGraw-Hill.
- Güzel, A., & Barın, Erol. (2013). *Yabancı dil olarak Türkçe öğretimi* [Turkish language teaching as a foreign language]. Akçağ.
- Haznedar, B. (2004). Türkiye’de yabancı dil öğretimi: İlköğretim yabancı dil programı [Primary foreign language learning and curriculum development in Turkey]. *Bogazici University Journal of Education*, 21(2), 15-19.
- İpek Eğilmez, N. (2018). Comparison of mother tongue teaching curriculums implemented at the middle school level in Turkey and England. *Universal Journal of Educational Research*, 6(10), 2384-2398.
- Karasar, N. (1999). *Bilimsel araştırma yöntemi* [Scientific research model]. Nobel .
- Kaya, M., & Kardaş, M. N. (2020). Yabancı dil olarak Türkçe öğretim programı üzerine bir inceleme [A study on Turkish curriculum as a foreign language]. *Social Sciences: Theory and Practice*, 4(1), 1- 20.
- Kılıç, A. (2021). Türkiye Maarif Vakfı yabancı dil olarak Türkçe öğretimi programı A1-A2 dinleme/izleme ve okuma/anlama kazanımlarının 21. yüzyıl okuryazarlık becerileri kapsamında değerlendirilmesi [Evaluation of Turkish Maarif Foundation Teaching Turkish as a Foreign Language Program A1-A2 listening/watching and reading/comprehension achievements in the scope of 21st century literacy skills]. *International Journal of Turkish Teaching as a Foreign Language*, 4(1), 148-164.
- Küçükahmet, L. (2008). *Öğretimde planlama ve değerlendirme* [Planning and assessment in teaching]. Nobel.
- Ministry of National Education [MoNE]. (2011). *MEB 21. yüzyıl öğrenci profili* [MoNE 21st Century student profile]. Access of date: 20.03.2023. https://www.meb.gov.tr/earged/earged/21.%20yy_og_pro.pdf
- Ministry of National Education [MoNE].(2016). *MEB özel okul öncesi İngilizce öğretim programı* [MONE private preschool English language curriculum]. Access of date: 18.04.2023. https://ookgm.meb.gov.tr/meb_iys_dosyalar/2016_06/23023701_ozel_okul_onesi_ingilizce_ogretim_programi.pdf
- Ministry of National Education [MoNE]. (2017). *MEB yabancı dil eğitimi ve öğretimi yönetmeliği* [MoNE foreign language education and teaching regulation]. Access of date: 15.04.2023. <https://mus.meb.gov.tr/www/milli-egitim-bakanligi-yabanci-dil-egitimi-ve-ogretimi-yonetmeliği/icerik/5238>
- Ministry of National Education [MoNE]. (2018a). *MEB İngilizce dersi öğretim programı (İlkokul ve ortaokul 2, 3, 4, 5, 6, 7, ve 8. sınıflar)* [MoNE English course curriculum (Primary school 2nd, 3rd, 4th, 5th, 6th, 7th, and 8th grades)]. Access of date:10.03.2023. <http://mufredat.meb.gov.tr/ProgramDetay.aspx?PID=327>
- Ministry of National Education [MoNE]. (2018b). *Ortaöğretim İngilizce dersi (9, 10, 11 ve 12. sınıflar) öğretim programı* [Secondary school English course (grades 9, 10, 11 and 12) curriculum]. Access of date: 20.03.2023. Access address: <http://mufredat.meb.gov.tr/ProgramDetay.aspx?PID=342>
- Ministry of National Education [MoNE]. (2020). *Türkçe’nin yabancı dil olarak öğretimi programı* [Curriculum for teaching Turkish as a foreign language]. Access of date: 10.03.2023. https://piktes.gov.tr/linkler/turkce_dil_programi.pdf
- Melanlıoğlu, D. (2020). Kardeş veya yük: Mülteci çocuk kahramanların bakış açısıyla kültürlerarası etkileşim [Brother or burden: Intercultural interaction from the perspective of refugee child heroes]. *RumeliDE Journal of Language and Literature Studies*, (20), 95-115.
- Merter, F., Kartal, Ş., & Çağlar, İ. (2012). Ortaöğretim İngilizce dersi yeni öğretim programının öğretmen görüşlerine göre değerlendirilmesi [The evaluation of new high school english curriculum in terms of teachers’ opinions]. *Mehmet Akif Ersoy University Journal of Education Faculty*, 1(23), 43-58.
- Mesleki Yeterlilikler Kurumu. (2015). Türkiye yeterlilikler çerçevesi [The turkish qualifications framework]. Access of date: 26.03.2023. https://myk.gov.tr/images/articles/editor/130116/TYC_tebliğ_2.pdf
- Onursal, İ. (2019). Yabancı dil öğretimi/öğreniminde yaş etkeni üzerine bir değerlendirme [An evaluation on the age factor in foreign language teaching/learning]. *Language Journal*, 170/1, 40-53.
- Senemoğlu, N. (2007). *Gelişim öğrenme ve öğretim kuramdan uygulamaya* [From development, learning, and teaching theory to practice]. Gönül.
- Şahin, H., & Aykaç, N. (2019). Avrupa ülkelerinde ve Türkiye’de ilkokullarda uygulanan yabancı dil öğretim programlarının karşılaştırılması [Comparison of foreign language teaching programs in primary schools in European countries and Turkey]. *Journal of National Education*, 48(1), 571-594.
- Şen, Ü. (2016). Yabancı dil olarak Türkçe öğretiminde ihmal edilmiş iki program:1986 ve 2000 programları [Neglected curricula in teaching Turkish as a foreign language: The 1986 and 2000 curricula]. *Journal of Mother Tongue Education*, 4(4), 545-558.

- Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research, 1*(1), 77-100.
- Türkiye Maarif Vakfı. (2020). *Türkçenin yabancı dil olarak öğretimi programı* [The Turkish language teaching program as a foreign language]. Access of date: 10.03.2023. https://www.turkiyemaarif.org/uploads/Turkcenin_Yabanci_Dil_Olarak_Ogretimi_Programi_2_Baski.pdf
- Ulutaş, M., & Kara, M. (2019). TÖMER Türkçe öğretim programları okuma kazanımlarının bilişsel stratejiler açısından incelenmesi [Analysis of Turkish language curriculums' reading acquisitions of Turkish teaching centers in terms of cognitive strategies]. *Journal of Language Education and Research, 5*(2), 232-250.
- Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in social sciences]. Seçkin.
- Yücel, E., Dimici, K., Yıldız, B., & Bümen, N. T. (2017). Son 15 yılda yayımlanan ilk ve ortaöğretim İngilizce dersi öğretim programları üzerine bir analiz [An Analysis of the primary and secondary school English language curricula published over the last 15 years]. *Ege Journal of Education, 18*(2), 702-737.

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 100%

Conflict Statement

In the research, there are no situations or relationships that could constitute a conflict of interest for the author.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Yabancı Dil Olarak Türkçe ve İngilizce Öğretim Programlarının Karşılaştırmalı Bir Analizi

Giriş

Milli Eğitim Bakanlığı [MEB] tarafından “Yabancı Dil Olarak Türkçe Öğretimi Programı” ilk kez 1986 yılında, ardından 2000 yılında hazırlanmıştır. 2015 yılında da Ankara Üniversitesi Türkçe Öğretim Merkezi [TÖMER] tarafından “Yabancı Dil Olarak Türkçe Öğretimi Programı” hazırlanmıştır. Ancak bu programlar, alanyazında çok iyi bilinmemekle birlikte Türkçenin yabancı dil olarak öğretilmesinde standartlaşmayı da sağlayamamıştır (Şen, 2016). Milli Eğitim Bakanlığı tarafından Türkçe'nin yabancı dil olarak öğretimi, 2020 yılından itibaren okul öncesi de dahil olmak üzere ilköğretim ve ortaöğretim kademelerine göre öğretim programı hazırlanarak uluslararası alandaki standartlara uygun hale getirilmeye başlanmıştır. Dolayısıyla MEB Türkçenin Yabancı Dil Olarak Öğretim Programı (MEB, 2020), çok yeni ve güncel bir program olma niteliği taşımaktadır. Ülkemizde İngilizcenin yabancı dil olarak öğretimi ise uzun yıllardır çeşitli öğretim programları dahilinde yapılmaktadır.

Türkiye’de yabancı dil öğretimine dönük alanyazın çalışmalarına bakıldığında hem Türkçe hem İngilizce öğretim programları açısından yabancı dil öğretimini ele alan çalışmalar (Aydın ve Tunagür, 2021; Balcı ve Melanlıoğlu, 2020; Dursun vd., 2017; Erdil ve Açık, 2021; Ertem, 2023; Haznedar, 2004; Kardaş, 2020; Kılıç, 2021; Koyuncu, 2021; Merter vd., 2012; Yücel vd., 2017) yer almaktadır. Ancak yapılan bu araştırma ile yeni olan Türkçenin Yabancı Dil Olarak Öğretimi Programı (MEB, 2020) ile İngilizce dersi öğretim programlarının çeşitli değişkenler açısından karşılaştırmalı olarak incelenmesi, Türkiye’deki yabancı dil öğretim programlarına karşılaştırmalı olarak yeni bir bakış açısı getirecektir. Dolayısıyla bu çalışma ile MEB Türkçenin Yabancı Dil Olarak Öğretim Programı (MEB, 2020) ile MEB İngilizce Dersi Öğretim Programı (İlkokul ve Ortaokul 2, 3, 4, 5, 6, 7 ve 8. sınıflar) (MEB, 2018a) ve MEB Ortaöğretim İngilizce Dersi (9, 10, 11 ve 12. sınıflar) Öğretim Programı’nı (MEB, 2018b) temel dayanak

ve uygulanma biçimleri açısından karşılaştırmak amaçlanmaktadır. Belirtilen amaç doğrultusunda araştırmada şu soruların yanıtları aranmıştır:

1. Türkçenin Yabancı Dil Olarak Öğretimi Programı (MEB, 2020) ile İngilizce Öğretimi Programları (MEB, 2018a; MEB, 2018b), temel dayanaklar açısından birbirinden farklılık göstermekte midir?

2. Türkçenin Yabancı Dil Olarak Öğretimi Programı (MEB, 2020) ile İngilizce Öğretimi Programları (MEB, 2018a; MEB, 2018b), uygulanma biçimleri açısından birbirinden farklılık göstermekte midir?

Yöntem

Nitel araştırma yaklaşımı benimsenen bu çalışma, durum araştırması niteliğindedir. Araştırmanın veri kaynağını, MEB Türkçenin Yabancı Dil Olarak Öğretim Programı [TYDÖP] (MEB, 2020), MEB İngilizce Dersi Öğretim Programı (İlkokul ve Ortaokul 2, 3, 4, 5, 6, 7 ve 8. sınıflar) [İlkİÖP] (MEB, 2018a) ve MEB Ortaöğretim İngilizce Dersi (9, 10, 11 ve 12. sınıflar) Öğretim Programı [OrtaİÖP] (MEB, 2018b) oluşturmaktadır. Bu nedenle amaçsal örnekleme yöntemlerinden ölçüt örnekleme kullanılmıştır.

TYDÖP (MEB, 2020), okul öncesi, ilköğretim ve ortaöğretim düzeylerinin üçüne de dair açıklamalar ve yönergeler içeren bir öğretim programıdır. İlkİÖP (MEB, 2018a) ve OrtaİÖP (MEB, 2018b) ise ilköğretim ve ortaöğretim düzeylerini iki farklı öğretim programında ele almaktadır. Bu nedenle araştırmada, yabancı dil olarak Türkçe öğretimini içeren program, tek bir öğretim programı olarak; İngilizce öğretimini içeren program ise iki ayrı öğretim programı olarak veri kaynağını oluşturmaktadır. Araştırmada verilerin toplanmasında nitel veri toplama yöntemlerinden doküman analizi incelemesi tekniği kullanılmıştır. Yıldırım ve Şimşek' in (2013) ifade ettiği gibi doküman analizi, araştırılması amaçlanan olgu ve olgular hakkında bilgi içeren yazılı materyallerin analizini kapsamaktadır. Öğretim programlarına, kaynakçada da belirtilen Milli Eğitim Bakanlığının ilgili erişim adreslerinden ulaşılmıştır. TYDÖP (MEB, 2020), Türkçe olarak; İlkİÖP (MEB, 2018a) ve OrtaİÖP (MEB, 2018b) ise Türkçe olan bazı açıklama bölümlerinin dışında İngilizce olarak bakanlık tarafından yayımlanmıştır. Araştırmacı tarafından İngilizce öğretim programları Türkçeye çevrilmiş ve bir alan uzmanından çeviriyi değerlendirmesi istenmiştir. Alan uzmanı, İngilizce öğretim programına ilişkin çevirinin orijinal metinle aynı olduğunu belirtmiştir. Böylelikle incelenen dokümanların orijinallik kontrolü sağlanmıştır. Ardından programlar üzerinde analiz çalışması yapılmıştır.

Çalışmanın verilerini elde etmek için her üç öğretim programında da temel dayanaklar ve programın uygulanma biçimi alt başlıklarını içeren ögeler incelenmiştir. Bununla birlikte her üç program için doğru verilere ulaşabilmek için yukarıda belirtilen başlıkların dışında programlar bütünüyle de incelenmiş ve programa doğrudan dayanak (temel) oluşturduğu ifade edilen kavramlar ve öğretim programlarının uygulanma biçimleri analiz edilmiştir. Temel dayanaklara ilişkin analiz yapılırken, programlara temel dayanak oluşturduğu ifade edilen kavram ve olgular incelemeye alınmıştır. Programların içeriklerinin programlarda belirtilen temel dayanaklara uygun olup olmadığına yönelik inceleme, araştırmanın inceleme konusu dışında tutulmuştur. Yine sözü edilen öğretim programları uygulanma biçimleri açısından analiz edilirken, programlarda doğrudan uygulamaya dair açıklamalar incelenmekle birlikte uygulamaya dair öğrenim düzeyi, öğrenci yaşı, dil seviyesi, programın uygulanma süresi, kazandırılacak dil becerileri başlıkları altındaki veriler analiz edilmiştir.

Bulgular

Araştırmanın soruları doğrultusunda incelemesi yapılan üç öğretim programı, ilk olarak programlarda açıkça ifade edilen temel dayanaklar açısından analiz edilmiştir. “Temel dayanaklar” ifadesi TYDÖP’de (MEB, 2020) bir başlık olarak doğrudan yer almaktayken; İlkİÖP’de (MEB, 2018a) ve OrtaİÖP’de (MEB, 2018b) “temel felsefe”, “değerler eğitimi”, “anahtar yeterlilikler” başlıklarının içerisinde temel dayanaklara yer verilmiştir. Her üç program da yukarıda belirtilen başlıkların dışında bütünüyle incelenerek, programa doğrudan dayanak (temel) oluşturduğu ifade edilen kavramlar açısından da incelenerek bulgulara ulaşılmıştır.

İncelemesi yapılan öğretim programlarının içerdikleri temel dayanaklara ilişkin bulgular şu şekilde özetlenebilir:

Her üç programda da ortak ve farklı temel dayanaklar yer almaktadır. Her üç programda da en temel dayanak, Avrupa Dilleri Ortak Çerçeve Programı (The Common European Framework) olarak ifade edilmektedir. İngilizce öğretim programlarında ve Türkçe öğretim programında Avrupa Dilleri Ortak Çerçeve Programı farklı biçimlerde dilsel olarak ifade edilse de (TYDÖP’de Diller için Avrupa Ortak Başvuru Metni (CoE, 2018), İngilizce öğretim programlarında Avrupa Dilleri Öğretimi Ortak Çerçeve Programı (CoE, 2001) biçiminde) aynı kaynak, temel dayanak olarak işaret edilmektedir. Ancak TYDÖP’de (MEB, 2020) Avrupa Dilleri Ortak Çerçeve Programı 2018 yılındaki güncellenmiş biçimiyle yer almaktadır.

İlkİÖP (MEB, 2018a) ve OrtaİÖP (MEB, 2018b), programlarda belirtildiği üzere Avrupa Dilleri Ortak Çerçeve Programı’nın (2001) tanımlayıcı ve pedagojik ilkelerine göre tasarlanmıştır. Her iki programda da öğretim yaklaşımı, öğretim stratejileri, ölçme değerlendirme biçimleri, dil düzeyleri programlarda ifade edildiği biçimiyle Avrupa Dilleri Öğretimi Ortak Çerçeve Programı’na (CoE, 2001) dayandırılmıştır. Ancak yukarıda Avrupa Dilleri Ortak Çerçeve Programı’nda (CoE, 2018) yapılan güncellemeler bağlamında ortaya çıkan kavramlar ve güncellemeler İlkİÖP’nin (MEB, 2018a) ve OrtaİÖP’nin (MEB, 2018b) her ikisinde de yer almamaktadır. Bu nedenle incelenen İngilizce Öğretim Programları, Türkçenin Yabancı Dil Olarak Öğretimi Programı ile aynı temel kaynaktan hareketle hazırlanmış olsa da güncelliği karşılamadığı için programlar Avrupa Dilleri Ortak Çerçeve Programı’na göre temel dayanaktaki kavramsal açılardan farklılık sergilemektedir.

Her üç programda da kök değerlerin her birinin program aracılığı ile öğrencilere kazandırılması gereken değerler olduğu ifade edilmiştir. İngilizce öğretim programlarının ikisinde de kök değerlerin kazandırılması için öğretmen ve ders materyalleri hazırlayanlara, öğrenci seviyesine ve psikolojisine uygun bir şekilde ders materyalleri hazırlamaları gerektiği vurgulanmış ve değerler eğitiminde paydaşların da etkisi olduğu belirtilmiştir.

TYDÖP’de (MEB, 2020) Avrupa Yeterlilikler Çerçevesi ve Türkiye Yeterlilikler Çerçevesi esas alınarak programın hazırlandığı belirtilmiştir. Programda yeterliliklerin içeriklerine dair kavramsal açıklamalar yapılmasa da Türkiye Yeterlilikler Çerçevesi’ne göre programla birlikte öğrencilerin ne tür yeterliliklere sahip olmaya aracılık edileceği detaylandırılmıştır. İlkİÖP’de (MEB, 2018a) yeterliliklere “Programda Anahtar Yeterlilikler” başlığı altında yer verilmiştir. Avrupa Yeterlilikler Çerçevesi, programda ayrıntılı olarak açıklanmış ve öğretim programının bu yeterlilikleri de içerdiği belirtilmiştir. Ayrıca Milli Eğitim Bakanlığı’nın İngilizce Öğretim Programları da dahil olmak üzere tüm öğretim programlarında revizyon yaparak, programların bu yeterliliklere yer vermesi gerektiği vurgulanmıştır.

Ancak Milli Eğitim Bakanlığı tarafından ifade edilen ve bir diğer yeterlilik çerçevesi olan Türkiye Yeterlilikler Çerçevesi'ne dair bir açıklama ya da ifadeye İlkÖP'de (MEB, 2018a) rastlanılmamıştır. OrtaİÖP'de (MEB, 2018b) ise bu programın İlkÖP'nin (MEB, 2018a) devamı niteliğinde güncelleme ve değişiklikler içerdiği belirtilmektedir. Buna rağmen Milli Eğitim Bakanlığı'nın tüm öğretim programlarında yeterliliklere yer verilmesi gerektiği İlkÖP'de (MEB, 2018a) vurgulanmış olsa da OrtaİÖP'de (MEB, 2018b) her iki yeterlilikler çerçevesine de yer verilmemiştir.

İncelenen öğretim programları arasında "21. Yüzyıl Becerileri"nin temel dayanak olarak doğrudan ifade edildiği tek program, TYDÖP'dir (MEB, 2020). Programda, tema seçimi, kazanımlar ve iletişimsel işlevler arasındaki ilişkide bu becerilerin dikkate alınarak hazırlandığı belirtilmiştir. Ders materyalleri, etkinlik ve görevlerin hazırlanmasında da bu becerilerin bulunması gerektiği programda açıkça ifade edilmiştir.

Türkçenin Yabancı Dil Olarak Öğretimi Programının Uygulanma Biçimine İlişkin Bulgular

TYDÖP'de (MEB, 2020) yurt içi ve yurt dışındaki her öğrenim düzeyi için farklı dil seviyelerinde bir uygulama modelinin oluşturulduğu görülmektedir. Çocuklar Türkçe ile ilk kez karşılaşacaklarından okul öncesi dönemin başlangıç seviyesi olarak verildiği, programda ifade edilmektedir. Başlangıç seviyesi, A1 öncesi ve A1 düzeylerini içermekte olup okul öncesi dönemine uygun kazanımlara yer vermektedir. Ayrıca okul öncesi çocukların gelişim özellikleri ortaklık sağladığı için yurt içi ve yurt dışı için uygulama modelinin programda benzer olduğu, okul öncesi için program hazırlanırken MEB Okul Öncesi Eğitim Programı'nın (2013) temel ilkelerinin dikkate alındığı programda belirtilmiştir.

İlköğretim 1. kademe uygulama biçimine bakıldığında programın hem yurt içi hem de yurt dışı için 7-10 yaş grubuna yönelik olduğu görülmektedir. Programın yurt dışı uygulamasında ilköğretim için A1 düzeyinde yaş gruplarına göre seviyelendirmeler (A1.1, A1.2, A1.3, A1.4) yapılmış ve izlenceler buna göre oluşturulmuştur. Programın yurt içi uygulamasında ise ilköğretim için hem A1 (A1.1, A1.2, A1.3, A1.4) hem de A2 (A2.1, A2.2) düzeyinde izlencelere yer verilmiştir. Programda yurt dışı uygulamasına A2 düzeyinin yerleştirilme sebebi, öğrencilerin hedef dile doğal ortamda maruz kalmaları ve örgün eğitim sistemine hızlı şekilde uyum sağlayabilmeleri olarak açıklanmaktadır.

Programda 11-14 yaş grubu aralığını kapsayan ilköğretim 2. kademe uygulama modeli, yurt dışı ve yurt içi uygulamalarında dil düzeyleri açısından farklılık sergilemektedir. Program, yurt dışı uygulamalarında ortaokul düzeyindeki öğrenciler için A2 (A2.1, A2.2, A2.3) düzeyinin hedeflendiğini vurgulamakta; A1 seviyesinin de yeni başlayan ortaokul öğrencileri için başlangıç seviyesi olduğunu belirtmektedir. Yurt içindeki uygulamalar içinse program, A1 seviyesi ile başlamakta A2 (A2.1, A2.2) ile devam etmekte ve ek olarak da B1 seviyesine dönük izlenceler içermektedir.

Programın ortaöğretim düzeyindeki uygulama modeli, hedeflenen dil düzeyleri açısından hem yurt dışı hem de yurt içi için benzerlik göstermektedir. Program, ortaöğretimdeki öğrenciler için hedeflenen düzeyin B2 olduğunu vurgulamakta, yurt dışı ve yurt içindeki uygulamaların A1 ve A2 düzeylerinin tekrarı ile başladığını belirtmektedir. Ayrıca uygulama yapılan yerdeki öğrenci ihtiyaçları, okul sistemi gibi özel durumlardan kaynaklı lisedeki öğrenciler için C1 düzeyini içeren izlencelerin de programda yer aldığı ifade edilmektedir.

TYDÖP (MEB, 2020), tüm öğrenim düzeylerinde hem yurt içi hem de yurt dışı uygulamalar için 10 farklı temadan oluşan izlenceleri içeriğinde barındırmaktadır. Öğrenim düzeylerine ve dil

seviyelerine göre yurt içi ve yurt dışı asgari öğretim uygulaması saatleri de birbirinden farklılık sergilemektedir. Ayrıca yaş döneminin gelişimsel özelliklerine göre programda farklı dilsel becerilere yer verilmiştir. Okul öncesi dönemine dair uygulamalar, programda 36-48, 49-60, 61-72 aylık üç farklı düzeye ayrılmıştır. Yaş döneminin gelişimsel özelliklerine göre programda okul öncesi düzeyine uygun kazanımlara da ayrıca yer verilmiştir. Dinleme ve konuşma becerilerinin yanında ayrıca 61-72 aylık çocuklar için erken okur yazarlık becerisi kazanımları da yer almaktadır.

İlkokulda öğrencilere kazandırılacak beceriler arasında okuma, yazma, konuşma ve dinleme/izlemenin yanında okumaya hazırlık ve yazmaya hazırlık becerilerinin de kazandırılması bulunmaktadır. Programda ilkokuma yazma öğretimi başlığı altında ses temelli okuma yazma öğretiminin aşamaları ve ilk okuma yazma öğretimi kazanımları belirtilmiştir. Programdaki izlenceler için okuma ve yazma öğretimi bölümleri oluşturulurken MEB Türkçe Dersi Öğretim Programı ile Türkçe ve Türk Kültürü Dersi Öğretim Programı'nın göz önünde bulundurulduğu ifade edilmiştir. Bununla birlikte ses temelli okuma yazma öğretimi uygulamalarının ilköğretim 1. kademe için geçerli olduğu, diğer kademelerde öğrencilerin hazırbulunuşluk düzeyine göre okuma yazma öğretimi yapılması gerektiği, kendi dilinde okur yazar öğrenciler için de alfabe öğretiminin yeterli olacağı vurgulanmıştır. İlk okuma yazma öğretimi ile Türkçe öğretiminin eş zamanlı olarak ilerletilmesi gerektiği de belirtilmiştir. Diğer öğrenim düzeylerinde ise dört temel dil becerisi kazandırılacak beceriler olarak programda gösterilmektedir. Programda tüm öğretim kademelerinde yabancı dil olarak Türkçenin öğretiminin daha etkili olabilmesi için 21 maddeden oluşan öneriler, "Program'ın Uygulanmasına Dair Öneriler" başlığı altında yer almaktadır.

İngilizce Öğretim Programlarının Uygulanma Biçimine İlişkin Bulgular

İlkİÖP (MEB, 2018a), altı ve on üç yaş aralığındaki öğrencilere İngilizce öğretimini içermektedir. Bu nedenle program dil kullanımları, işlevleri, öğretim materyalleri dikkate alınarak üç öğrenme aşamasına bölünmüştür. İlk aşama 2, 3 ve 4. sınıfları, ikinci aşama 5-6. sınıfları, üçüncü aşama ise 7-8. sınıfları içermektedir. İlkİÖP (2018) ile 2. sınıfta öğrencilerin A1 seviyesinde dil öğretimine başlanıp, 8. sınıfın sonunda A2 dil seviyesinde olmaları hedeflenmektedir. Belirtilen dil seviyelerinin hangi alt seviyelerinin (A1.2. gibi) hangi sınıflara yönelik olduğu programda açıkça belirtilmemektedir.

İlkİÖP'de (MEB, 2018a) her sınıf düzeyi için belirlenen dil seviyeleri, uygulama süresi ve kazandırılacak beceriler farklılık sergilemektedir. Programın hedef kitlesinin 6-13 yaş aralığındaki çocuklar olduğu programda belirtilse de programın uygulama modeli içerisinde sınıflara göre öğrenci yaşı belirtilmemiştir. Her sınıf için programın haftalık uygulama süresi farklılık göstermektedir.

İlkİÖP'de (MEB, 2018a), 2,3 ve 4. sınıflar için özellikle dinleme ve konuşma becerileri üzerine öğretim uygulamaları yapılması gerektiği vurgulanmaktadır. Öğretim programının uygulanmasında 2. sınıflar için dinleme ve konuşma, 3-4. sınıflar için dinleme, konuşma, çok sınırlı okuma ve çok sınırlı okuma yazma uygulamalarının olması gerektiği görülmektedir. 5. sınıflara kazandırılacak beceriler dinleme, konuşma, sınırlı okuma ve çok sınırlı yazmadır. 6. sınıflara kazandırılacak beceriler ise dinleme, konuşma, sınırlı okuma ve sınırlı yazmadır. Bu iki sınıf düzeyinde de okuma ve yazma becerilerinin kazandırılmasında bir sınırlama getirildiği görülmektedir. İlkİÖP'de (MEB, 2018a) çok sınırlı olarak ifade edilen becerilerin, basit ve kısa sözlü/yazılı metinleri ve materyalleri ifade ettiği belirtilmektedir. Sınırlı olarak belirtilen becerileri geliştirmek için de 25 sözcüğe kadar okuma ve yazma etkinlikleri yapılabileceği açıklaması yer almaktadır.

7-8. sınıflar için A2 düzeyinde öncelikle konuşma ve dinleme becerilerinin ardından yazma ve okuma becerilerinin geliştirilmesine yönelik uygulamaların yapılması gerektiği programda görülmektedir. Programda 7-8. sınıflarda tema bazlı öğretim uygulamalarıyla, bu sınıfların programlarının şekillendirildiği ifade edilmektedir.

İlkİÖP'ye (MEB, 2018a) kazanımlar açısından bakıldığında ise kazandırılacak beceriler açısından sınıf düzeylerine göre kazanımlarda farklılık olduğu görülmektedir. 2, 3 ve 4. sınıflar için hazırlanmış ünitelerde dinleme ve konuşma becerilerine yönelik kazanımlar; 5. sınıflar için hazırlanmış ünitelerde dinleme, konuşma ve okuma becerilerine yönelik kazanımlar; 6. sınıflar için hazırlanmış ünitelerde dinleme, sözlü etkileşim, sözlü anlatım ve okuma becerilerine yönelik kazanımlar; 7-8. sınıflar için hazırlanmış ünitelerde ise dinleme, sözlü etkileşim, sözlü anlatım, okuma ve yazma becerilerine yönelik kazanımlar yer almaktadır.

OrtaİÖP'de (MEB, 2018b) 9. sınıflar A1 düzeyinde uygulamalar ile başlamakta, 12. sınıftaki öğrencilerin de hazırlık sınıfına gidip gitmeme durumlarına göre en az B2 düzeyinde mezun olmaları hedeflenmektedir. İlkİÖP'de (MEB, 2018a) 8. sınıf öğrencilerinin A2 düzeyinde mezun olmaları beklenmektedir. Ancak ortaöğretime başlayan öğrencilerin dil öğrenme düzeyleri ve ihtiyaçları farklılık sergileyebileceği için OrtaİÖP'de (MEB, 2018b) 9. sınıflardaki öğretim uygulamalarının A1 ve A2 seviyelerine göre yeniden uyarıldığı ifade edilmektedir. Yine 9. sınıflar için belirlenen A1 seviyesini içeren uygulamaların İlkİÖP'ye (MEB, 2018a) göre sözcük bilgisi ve yapılar bakımından daha ileri düzeyde olduğu programda vurgulanmaktadır.

OrtaİÖP (MEB, 2018b), tüm sınıflarda haftada dört saat olarak tasarlanmıştır. Ancak belirtilen bu haftalık saatin kurumlara göre de farklılaşabileceği, programda belirtilmektedir. Programda, her dersin birinci dil edinimi sürecini taklit etmek amacıyla dinleme ve konuşma etkinlikleriyle başlayıp ardından okuma ve yazma materyallerine geçecek şekilde sıralanması gerektiği belirtilmektedir.

OrtaİÖP'de (MEB, 2018b) tüm sınıf düzeylerinde söz varlığını geliştirmek için her derste öğrenilecek yeni kelime sayısı, yedi ile sınırlandırılmıştır. Temalarda hangi kelimelerin öğretileceği programda belirtilmemiş, öğretilecek kelime seçimi temaya uygun olarak öğretmenlere ve ders materyali hazırlayanlara bırakılmıştır.

Tartışma ve Sonuç

Temel dayanaklar açısından karşılaştırması yapılan yabancı dil öğretim programlarının her üçü de Avrupa Dilleri Ortak Çerçeve Programı'nı en temel dayanak olarak ifade etmektedir. Ancak İngilizce Öğretim Programlarının 2001 yılında hazırlanan Avrupa Dilleri Ortak Çerçeve Programı'nı dayanak olarak göstermesi, Türkçenin Yabancı Dil Olarak Öğretimi Programının ise Avrupa Dilleri Ortak Çerçeve Programı'nın (CoE, 2018) güncellenmiş biçimini dayanak olarak göstermesi, programlarda temel dayanaklar açısından ifade edilen kavramlarda (örnek: aracılık kavramı) farklılıkların ortaya çıkmasına neden olmuştur. Bu nedenle incelenen İngilizce Öğretim Programları, Türkçenin Yabancı Dil Olarak Öğretimi Programı ile aynı temel kaynaktan hareketle hazırlanmış olsa da güncelliği karşılamadığı için Avrupa Dilleri Ortak Çerçeve Programı'na göre kavramsal açılardan farklılıklar sergilemektedir.

İncelemesi yapılan programlarda temel dayanaklar açısından ortaklık sağlayan tek dayanak, kök değerlerdir. 2018 yılı itibarıyla yenilenen öğretim programlarıyla birlikte Millî Eğitim Bakanlığı, kök değerlerin tüm öğretim programlarında yer alması gerektiğini belirtmiştir. İncelemesi yapılan her üç program da kök değerlerin programın hazırlanmasında temel oluşturduğunu ifade etmektedir. Ancak

kök değerlerin programların tam olarak hangi bölümlerine içerik olarak yerleştirildiği hiçbir programda net olarak ifade edilmemektedir. Çoban ve Akyol (2020) değerler açısından Ortaöğretim İngilizce Öğretimi Programını (MEB, 2018) ve ders kitaplarını inceledikleri çalışmalarında, programın içeriğinin kök değerleri tamamıyla yansıtmadığı sonucuna ulaşmışlardır. Bu nedenle farklı araştırmalarla programların temel dayanak olarak gösterdiği kök değerleri bulundurma durumlarının incelenmesi, programlarda yer alan temel dayanak ifadesinin ne kadar somutlaştırıldığına göstergesi olacaktır.

21. Yüzyıl Becerileri'nin temel dayanak olarak gösterildiği tek program, Türkçenin Yabancı Dil Olarak Öğretimi Programı'dır. Aydın ve Tangür (2021), Türkçenin Yabancı Dil Olarak Öğretimi Programı'nı (MEB, 2020) 21. Yüzyıl- Becerileri açısından inceledikleri çalışmalarında programın 21. yüzyıl. becerileri ile uyumlu olduğu sonucuna ulaşmışlardır. Çelebi ve Altuncu (2019) ise ortaöğretim 9. sınıf İngilizce Öğretim Programı'ndaki kazanımları 21. yüzyıl becerileri açısından değerlendirdikleri araştırmada, programda bu becerilere yeteri kadar yer verilmediği sonucuna ulaşmışlardır. Yapılan bu çalışmalar, araştırmada elde edilen sonuçlarla da uyum sağlamaktadır.

Türkçenin Yabancı Dil Olarak Öğretimi Programı ile İngilizce Öğretimi Programları, ilköğretim ve ortaöğretim düzeyindeki öğrencileri öğretim yılının sonunda benzer dil seviyelerine ulaştırmayı hedeflemektedir. Ancak hem İlköğretim İngilizce Dersi Öğretim Programı'nda (MEB, 2018a) hem de Ortaöğretim İngilizce Dersi Öğretim Programı'nda (MEB, 2018b) sınıf düzeylerinde dil seviyelerine ilişkin detaylı bir düzenleme (A1.1., A2.2. gibi) bulunmamaktadır. İngilizce öğretim programlarındaki dil düzeylerine dair tanımlamalar daha genel kapsamdadır. Oysaki Türkçenin Yabancı Dil Olarak Öğretimi Programı'nda okul öncesi programı da dahil olmak üzere her sınıf seviyesi için dil düzeyleri detaylı bir şekilde sunulmuştur. Bu program hem yurt içi hem de yurt dışında dil öğretimini içerdiği için dil seviyelerinin sunumlarında da esneklik olduğu görülmektedir. Ayrıca program her dil seviyesine göre kazanımları ve dil yapıları listesini ayrıca içeriğinde barındırarak uygulayıcılar açısından kolaylık sağlamaktadır.

Türkçenin Yabancı Dil Olarak Öğretimi Programı (MEB, 2020) hazırlanırken programın genişliği ve içeriği bakımından pek çok öğretim programından da yararlandığı vurgulanmaktadır. Bu nedenle bu programın İngilizce öğretim programlarına göre uygulanma biçimi açısından daha ayrıntılı içerikleri barındırdığı söylenebilir.

İncelemesi yapılan programlara, uygulamada kazandırılacak beceriler açısından bakıldığında farklılıklar olduğu sonucuna ulaşılmıştır. İlköğretim İngilizce Dersi Öğretim Programı'nda (MEB, 2018a) ilköğretim düzeyi için kazandırılması hedeflenen becerilerin dinleme ve konuşma olduğu görülmektedir. Ayrıca programa göre, öğrencilere 7. ve 8. sınıfa gelene kadar okuma ve yazma becerileri ile de sınırlı ya da çok sınırlı düzeyde öğretim uygulamaları gerçekleştirilmektedir. Ancak Türkçenin Yabancı Dil Olarak Öğretimi Programı (MEB, 2020), 1. sınıftan itibaren dört temel beceriye dönük kazanım ve uygulamalara yer vermektedir. İki program arasındaki bu farklılığın sonuçlarının öğrenci başarısı açısından değerlendirilmesi, yabancı dil öğretimi bakımından hangi programın daha verimli olduğunu gösterebilir.

İngilizce Öğretim Programlarının uygulanma süreleri, her iki programda da haftalık saat üzerinden verilmiştir. Türkçenin Yabancı Dil Olarak Öğretimi Programı'nda ise sınıf düzeyinde belirtilen dil seviyesinin öğretimi için gerekli asgari uygulama süresi verilmiştir. İngilizce öğretim programlarında

belirtilen sürelerin Yabancı Dil Olarak Türkçe Öğretimi Programı'na oranla daha kısa olduğu söylenebilir.

Sonuç olarak, Türkçenin Yabancı Dil Olarak Öğretimi Programı (MEB, 2020), uygulama biçimine göre dil seviyeleri, öğrenim düzeyleri, uygulama süresi ve kazandırılacak beceriler açısından ayrıntılı bir programdır. Ayrıca bu programda öğretim programının uygulanmasına dönük izlenceler, temalar, kazanımlar, dil yapıları listesi, ölçme değerlendirme biçimleri daha detaylı bir biçimde yer almaktadır. Bu sebeple program öğretmenler, ders kitabı ve öğretim materyali hazırlayanlar için kolaylık sağlayıcı, uygulamaya dönük ayrıntılar içermektedir. İngilizce Öğretim Programlarında da uygulanma biçimine dönük açıklamalara yer verilse de Türkçe öğretimi programına göre daha sınırlı kalmaktadır. Programların temel aldığı dayanaklar da Türkçenin Yabancı Dil Öğretimi Programı'nda (MEB, 2020) İngilizce öğretim programlarına göre daha fazla çeşitlilik ve güncellik göstermektedir.

Öneriler

Genel olarak bakıldığında Türkçenin Yabancı Dil Olarak Öğretimi Programı'nın (MEB, 2020) içeriğinin İngilizce Öğretimi Programlarına göre daha farklı ve çeşitli dayanaklardan temel alınarak oluşturulduğu sonucuna ulaşılabilir. Ancak bu çalışmada temel dayanaklar, programda ifade edilme durumları açısından ele alınmıştır. Bu nedenle incelemesi yapılan yabancı dil öğretimi programlarının ifade edilen temel dayanakları içeriklerine ne kadar ve nasıl yansıtıklarını inceleyen farklı çalışmalar, sonuçların netliğini ortaya çıkaracaktır.

Türkçenin Yabancı Dil Olarak Öğretimi Programı, okul öncesinde Türkçe öğretimi programını içermesi bakımından İngilizce Öğretimi Programlarından farklılık sergilemektedir. Okul öncesi dönem için programda Avrupa Dilleri Ortak Çerçeve Programı'nın (2018) güncel halinden hareketle dil seviyeleri belirlenmiş ve sınıf içi uygulamalar detaylı olarak ele alınmıştır. İngilizce öğretimi, ülkemizde devlet okullarında 2. sınıftan itibaren gerçekleştirildiği için incelemesi yapılan İngilizce Öğretim Programları bu öğrenim düzeyi açısından değerlendirilememiştir. Ancak MEB Özel Okul Öncesi İngilizce Öğretim Programı (MEB, 2016) incelenerek programlar arası bir karşılaştırma, farklı bir araştırmada yapılabilir.



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Counselors' Psychological Counseling Skills And Attitudes Towards Providing Counseling Help On Professional Satisfaction*

Senem Özdamar, Psychological Counselor, M. Sc., Corresponding Author
Özel Zincirlikuyu Uğur Anatolian High School, Türkiye
senemozdamar@hotmail.com
Orcid ID: 0000-0002-0569-6559

Ezgi Özeke Kocabaş, Assist. Prof. Dr.
Mimar Sinan Fine Arts University, Türkiye
ezgi.ozeke@msgsu.edu.tr
Orcid ID: 0000-0001-5886-8097

Article Type: Research Article
Received Date: 16.06.2023
Accepted Date: 17.10.2023
Published Date: 30.10.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software
Doi: 10.29329/tayjournal.2023.610.03

Citation: Özdamar, S., & Özeke Kocabaş, E. (2023). Counselors' psychological counseling skills and attitudes towards providing counseling help on professional satisfaction. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 738-765.

* This study was derived from master's thesis submitted by the first author in 2021 at Bahçeşehir University, and partly presented in 23rd International Guidance and Psychological Counseling Congress held at İstanbul Kültür University on June 13-15, 2022.

Abstract

In training of qualified counselors and supporting their individual and professional development, it is considered important to reveal the quality of the relationship between the counseling skills of psychological counselors and their attitudes towards providing psychological help and their professional satisfaction. In this context, it was investigated whether there is a significant difference in psychological counselors' professional satisfaction, counseling skills, and attitudes towards providing counseling assistance in terms of their views on the efficiency of the courses of individual and group counseling practice, counseling principles and techniques or their equivalents. In addition, the effects of psychological counselors' counseling skills and their attitudes towards providing counseling help on their professional satisfaction are examined. For this purpose, 309 school counselors from different levels of educational institutions constitute the study group. Occupational Satisfaction Scale (OSS), Counseling Self-Estimate Inventory (COSI), Attitude Scale Towards Giving Psychological Counseling Helping (ASTGPCH) and Personal Information Form were used to collect data. Significant differences were found from nonparametric analysis of opinions of efficiency of the course of individual and group counseling, as well as the principles and techniques of psychological counseling course. Analyzed by multiple regression, counselor's counseling skills and attitudes toward counseling services explain their professional satisfaction by 20.9%. All evaluated together, quality of the education received by psychological counselors during their undergraduate education, their psychological counseling skill competencies and their positive attitudes towards providing psychological counseling help were found important factors in terms of their professional satisfaction.

Keywords: Counseling skills, counseling help, professional satisfaction.

Introduction

Successful completion of the psychological counseling process depends on the relationship quality between the psychological counselor and the client (Cormier & Hackney, 2018). The psychological counseling relationship is defined as confidential, protected, safe, and healing, which is quite different from the relationship between family members, close friends, and non-professional individuals (Cormier & Hackney, 2018). The foundation of the unique assisting relationship is based on the theoretically individual-centered approach in psychological counseling (Cormier & Hackney, 2018). In the psychological counseling process, the psychological counselor stays important as an effective therapeutic force for establishing a therapeutic relationship and achieving behavioral goals (Voltan-Acar, 2015). The favorable attitude of the psychological counselor toward providing assistance will intensify the effectiveness of the process and the quality of the relationship (Aslan et al., 2018a).

Providing effective assistance to people, having communication and counseling skills, and understanding human behavior are included among the expectations of the students in psychological counseling and guidance undergraduate programs regarding the competencies that they are required to possess (Aslan et al., 2018b). The competencies that students must acquire upon the completion of the program, the knowledge obtained through theoretical education, and the skills that they are expected to possess reveal the characteristics of a well-equipped psychological counselor (Aslan et al., 2018b). In this sense, psychological counselor skills stand out as a factor that affects the adaptation and development of clients who prevail as targets of psychological counseling and guidance services. The significance of the personal competencies and skills of counselors originates from the gravity of the education they receive. In the psychological counseling process, there is a professional interaction between the psychological counselor who is trained and acquired expertise on this subject, and the client (Uslu, 2005). The inability to provide adequate quality and quantity of psychological counseling

services to students in schools, which are among the prominent institutions where psychological counseling services are provided, negatively influences the academic and social issues that students may encounter in the years ahead (Aslan et al., 2018a).

Therapeutic approaches and interventions encompass psychological counseling theories and the skills of applying the strategies, interventions, as well as techniques of such theories (Cormier & Hackney, 2018). For effective psychological counseling to be successful, the counselor must prove his/her competence in psychological counseling skills. To ensure this competence, the most crucial responsibility of the trainers of psychological counselors is to train and teach psychological counselors who are novices in the profession (Aladağ, 2013).

Differences in study programs amongst educational institutions, counselor candidate and supervisor communication, their prospect of receiving adequate supervision, qualifications of the instructors teaching the course, lack of role models, ethical standards, adequate distribution of theoretical and applied courses, internship opportunities, practice rooms, and sufficient supply of course tools and equipment, etc., can be mentioned when considering the items that are effective in the training of psychological counselors (Uslu, 2005).

Training effective psychological counselors dwell at the center of psychological counselor education. Therapeutic approaches and interventions, technical and cognitive skills are emphasized considerably, and the benefits of skills training and supervision are indicated for the competence of the psychological counselors. In the process of skills training, in-class training should be integrated with psychological counseling practices which are the most basic elements. Participating in applied psychological counseling processes and supervision provides students with the opportunity to apply what they have acquired and develop their own self-awareness (Aladağ & Bektaş, 2009). In addition to their personal professional feelings and professional commitments, psychological counselors strive to achieve the standard that lies between competence and excellence. To exceed the minimum acceptable level in terms of proficiency, they advance their skills and improve themselves by obtaining training in numerous fields (Bond, 2021).

The personal and professional sense of competence of psychological counselors influences their explicit and implicit behaviors. Psychological counselors who feel inadequate also experience the feeling of failure (Savicky & Cooley, 1982 as cited in İkiz, 2006), and they doubt and question their competence, regardless of the education they have received and the experience they have accumulated. This emerges as an issue that prevents psychological counselors from providing psychological counseling assistance to clients in line with their education and competence. Hesitation in questioning their competence not only prevents the psychological counselor from dwelling on issues that exceed his education and competence but also stops him/her from becoming self-confident (Ikiz, 2006).

Corey (2008) stated that the attitude and personality characteristics of a psychological counselor were emphasized when defining the characteristics that he/she was supposed to possess. People must make decisions in many situations throughout their lives and may naturally experience anxiety in some settings. Psychological counseling services try to assist individuals in coping with such situations (Can, 2019). The attitudes of psychological counselors during psychological counseling services are reflected in their behavior and it is predicted that it will influence the progress towards the successful conclusion of the process.

The therapeutic relationship, which is critical in the psychological counseling process, is also influenced by the conduct and attitudes of the people providing psychological counseling services during this process (Voltan-Acar, 2015). It is thought that psychological counselors with positive attitudes will favorably affect the quality of the help they give to the client and will also increase the satisfaction of the counselor (Aslan et al., 2018a). It is believed that it is significant for the psychological counselor to have a favorable attitude in being able to include himself in the session, intervene effectively, and accurately organize the information brought by the client to the session (Aslan et al., 2018a).

On the other hand, while people meet their basic physiological needs through professional activities and financial gain, they also meet their social and psychological needs such as productivity, display of talent, self-improvement, and maintaining a status in society. For a healthy person, being a member of a profession that suits his/her nature and personality and working in a business environment brings happiness. In this context, professional satisfaction has become the subject of research examined by career psychological counselors and industrial psychologists as people's happiness in their professional lives also influences their happiness in their regular lives (Kuzgun et al., 2012).

It is believed that psychological counselors who maintain a positive attitude towards psychological counselor assistance will favorably influence the quality of the help they provide to the client as well as intensify the satisfaction of the counselor. Among the most important factors affecting professional satisfaction is having a positive attitude about the profession (Aslan et al., 2018a). The attitudes of individuals towards their profession, the institution they are employed at, and their own personal activities are seen as significant factors influencing professional satisfaction (Cherniss, 1980; as cited in İkiz, 2010). An increase in professional satisfaction, gratification, state of well-being, and success provides not only individual benefits but also organizational achievement in terms of work efficiency and productivity (Ekşi et al., 2015). Different results were observed in numerous studies examining the professional sense and job satisfaction of psychological counselors in our country. In some studies, it has been observed that counselor self-efficacy and listening skills predicted job satisfaction significantly (Ekşi et al., 2015) and that there was a moderately significant relationship between the level of professional satisfaction and professional development efforts (Kocabaş, 2019). In Uslu's (1999) study, while there was a significant difference between those who were professionally and partially competent, no significant difference was found between competent and fully competent. Kocayörük (2000), Köksal (2019), and Taşdelen-Karçkay (2008) found that there was no significant difference between professional competence and the undergraduate program studied and professional satisfaction. It has been discovered in studies conducted abroad that while psychological counselors with high levels of self-confidence provided more effective psychological assistance to their clients (Wiggins & Giles, 1984); possessing a high level of self-efficacy positively predicted professional satisfaction (Baggerly & Osborn, 2006; Boon et al., 2015).

Psychological counselors' consideration of themselves as inadequate in their professional lives and being employed in a challenging work environment negatively affects their enjoyment of their work and professional satisfaction. Their thoughts and attitudes towards their work are reflections of their reactions to the job. Studies also revealed that positive thoughts and attitudes intensified professional satisfaction (Ekşi et al., 2015). In this regard, it becomes vitally important to investigate issues such as

the quality of the education psychological counselors receive, their professional self-efficacy, and the situations that prevent them from providing psychological counseling services. Experienced psychological counselors are experts who can develop a consistent style with their clients while remaining in the process with them. It reflects personality traits and psychological counseling experiences. Guiding principles and skills are necessary for psychological counselors to establish therapeutic relationships. When the psychological counselor is inconsistent in the way s/he manages the counseling process, the client may not be able to easily involve himself/herself in the process as s/he considers the counselor to be indecisive (Hackney & Cormier, 2008). In this case, it is thought that the psychological counselor will not be able to provide any benefit to the client and will experience dissatisfaction in terms of professional satisfaction due to the feeling of inadequacy.

In this context, as mentioned above, there are limited studies examining the training and qualifications of psychological counselors and their psychological counseling skills although there are studies examining the professional self-efficacy, attitudes towards the profession, and professional satisfaction of psychological counselors. According to Yaka (2011), although the history of psychological counseling education in Turkey dates back approximately fifty years, there is no psychological counseling skills training program with a specific theoretical basis, systematic, effective, and suitable for psychological counselor education. He stated that the significance of qualified psychological counseling skills training within general psychological counselor education in Turkey was not properly perceived. He emphasized that there was a need for research to train effective psychological counselors and increase psychological counseling skills training. In this context, it was believed that examining the efficiency opinions regarding the basic practice courses offered in psychological counselor education together with the competencies, attitudes and professional satisfaction of psychological counselors could contribute to the quality of the education offered and the prominence of the relevant courses. It was considered crucial to reveal the factors affecting the quality of services for the professional development of psychological counselors. The basic courses that psychological counselors took during their training and learned about the psychological help process and the extent to which they considered them to be useful provide information about the quality of the training they underwent. In light of this information, it was thought that it could contribute to the examination of the curriculum from a different perspective. Similarly, it was deemed important to evaluate the competence of psychological counselors in psychological counseling skills, which are examined within the framework of self-efficacy, with a measurement tool related to the psychological counseling skills they possess, and its relationship with occupational satisfaction.

In this context, this research aimed to highlight the importance of compulsory course programs on psychological counseling skills in the undergraduate education process of the psychological counseling and guidance department, to contribute to the efficiency of compulsory course programs for individual and group psychological counseling practices, to render the attitudes of psychological counselors towards providing psychological counseling services positive for education, and to be able to offer suggestions for training professional staff and supporting their professional development as well as to improve occupational conditions. It was deemed significant to train qualified psychological counselors and to obtain data that will support individual and professional development in this regard, to examine the psychological counseling skills of psychological counselors, their attitudes towards providing psychological counseling assistance, and their relationship with professional satisfaction and for the development of the psychological counseling and guidance profession and its staff.

In light of this, the main objective of this study was to examine the professional satisfaction of psychological counselors who are employed at different institutions affiliated with the Ministry of Education (primary school, secondary school, secondary education levels, and the Guidance and Research Center) and graduated from different education programs (Psychological Services in Education, Program Development and Instruction in Education) together with the factors influencing the professional satisfaction of psychological counselors, their counseling skills and attitudes towards providing psychological counseling assistance, and whether or not their views differed on the effectiveness of two basic courses in psychological counselor education (e.g. individual and group counseling practice; psychological counseling principles and techniques) or undergraduate courses that are thought to be equivalent. Secondly, to investigate the predictive power of psychological counselors' psychological counseling skills and attitudes towards providing psychological counseling assistance to their professional satisfaction

Method

Research Model

Studies that collect data to determine certain characteristics of a group are defined as survey research (Büyüköztürk et al., 2019). In this context, this study is a relational screening model examining whether two or more variables changed together and, if so, how this change occurred (Karasar, 2009). The data collection in this study was carried out through administrating surveys and their analysis by a computer application (Büyüköztürk et al., 2019).

Study Group

The convenience sampling method, one of the non-random sampling methods, was used in line with the scope of the study. This method was selected for the purpose of reaching more professionals as hybrid education was still in progress while conducting the study, the opportunity to collect face-to-face data in schools was limited, and the data size was vast and massive. Considering the target population of the study, careful attention was paid to including professional staff who actively provide school psychological counseling services in public and private institutions in various provinces of Turkey.

Following the ethics committee's approval from the relevant university in the Fall Semester of the 2020-2021 Academic Year, the data collection instrument was transferred to the electronic environment via "Google Forms" application software between January and April 2021 and was sent to the participants online. Participants were asked to take part in the study on a voluntary basis and received written information about the study. They were informed that the items of the data collection tools could be answered in an average of 15-20 minutes.

The population of the study consisted of psychological counselors and graduates of psychology and other undergraduate programs (Program Development and Instruction in Education, Curriculum and Instruction) who worked and studied actively in the 2020-2021 academic year. The sample of the study consisted of 359 people who participated voluntarily; however, a total of 50 participants could not be included in the analysis part of the study as they were not actively employed (7 people), graduated from different departments (8 people), their field of study was not from the specified educational institutions (30 people) and they were extreme data (5 people). In the end, the study was

carried out with the participation of 309 school psychological counselors working at different types and levels of institutions. Descriptive statistical information about the study group was shown in Table 1.

Table 1. *Descriptive statistics about the study group*

Variables		N	%
Gender	Male	79	25.6
	Female	230	74.4
Type of Institution They are Employed at	Public	258	83.5
	Private	51	16.5
Individual Counseling Practice Course	Wasn't productive	26	8.4
	Somewhat productive	90	29.1
	Productive	193	62.5
Grup Counseling Practice Course	Wasn't productive	34	11.0
	Somewhat productive	118	38.2
	Productive	157	50.8
Principles and Techniques of Counseling Course	Wasn't productive	22	7.1
	Somewhat productive	83	26.9
	Productive	204	66.0
Level of School They are Employed at	Preschool	23	7.4
	Primary School	75	24.3
	Secondary	97	31.4
	Secondary Education	93	30.1
	GRC	21	6.8
Years of Service in the Profession	0-5 years	145	46.9
	6-10 years	89	28.8
	11-15 years	26	8.4
	15 years and +	49	15.9
Department They Graduated from	GPC	295	95.5
	Psychology	11	3.6
	Other	3	.9

GRC: Guidance and Research Centers, GPC: Guidance and Psychological Counseling

As seen in Table 1, the study group consisted of a total of 309 people including 79 (25.6%) men and 230 (74.4%) women. While 258 (83.5%) of the participants worked in public schools, 51 (16.5%) of them worked in private schools. While 26 (8.4%) of the participants stated that the individual psychological counseling course they took at the undergraduate level was not productive, 90 (29.1%) of them declared that it was somewhat productive, and 193 (62.5%) of them stated that it was productive. Similarly, 34 (11%) of the participants asserted that the group psychological counseling course they took at the undergraduate level was not productive, 118 (38.2%) of them thought that it was somewhat productive, and 157 (50.8%) of them believed that it was productive. In addition, 22 (7.1%) of the participants believed that the psychological counseling principles and techniques course they took at the undergraduate level was not productive, 83 (26.9%) of them thought it was somewhat productive, and 204 (66%) believed it was productive.

Considering the level of the school where the participants were employed, 23 (7.4%) of them were seen to work in kindergarten, 75 (24.3%) of them were in primary school, 97 (31.4%) of them were employed at secondary school, 93 (30.1%) of them were in secondary education and 21 (6.8%) of them worked at Guidance and Research Centers. Additionally, 145 (46.9%) of the participants had been working for 0-5 years, 89 (28.8%) of them were working for 6-10 years, 26 (8.4%) of them had been working for 11-15 years and 49 (15.9%) of them had been working for 15 years or more.

Data Collection Tools

"Personal Information Form", "Occupational Satisfaction Scale (OSS)", "Counseling Self-Estimate Inventory (COSI)", and "Attitude Scale Towards Giving Psychological Counseling Helping (ASTGPCH)" were used as data collection tools in the study. The personal information form was prepared by the researcher. Information about data collection tools was presented below.

Occupational Satisfaction Scale

"Occupational Satisfaction Scale" was developed by Kuzgun, Sevim, and Hamamcı in 1998 as a result of a study conducted with the participation of 114 people to determine how satisfied individuals working in any job were in being employed in that profession. The scale was in a five-point Likert scale format and consisted of 20 items. Positive items were scored as A: 5, B: 4, C: 3, D: 2, and E: 1, and negative items as A: 1, B: 2, C: 3, D: 4, and E: 5. Most of the items in the scale were related to the essence of professional activities. It was accepted that if the scores obtained were high, individuals' professional satisfaction, i.e., the satisfaction they received from the essence of the job, would also be high. When examining the coefficients regarding the reliability of the scale, it was concluded that the coefficient value for the entire scale was .90 and the internal consistency (Cronbach Alpha) coefficient value was .91. The reliability coefficient of the Occupational Satisfaction Scale was found to be .91 in line with the data obtained within the scope of this study.

Counseling Self-Estimate Inventory

Counseling Self-Estimate Inventory (COSI), developed by Larson and Daniels in 1992 to measure the counselor self-efficacy levels of school counselor candidates, was adapted into Turkish by Gençdoğan and Özpölat in 2007. The study included 262 volunteer participants, including psychological counseling and guidance department students, psychiatrists, and psychologists. The scale consists of 37 items and 5 sub-dimensions: "Basic Therapeutic Communication Skills", "Analytical Skills", "Difficult Clients and Sociocultural Differences", "Being Neutral in the Counseling Process" and "Ability to Manage the Counseling Process". In the adapted version, the internal consistency coefficients of the scale were found to be .32 at the lowest and .92 at the highest level, which was significant at the $p < .05$ level (Gençdoğan & Özpölat, 2007). The reliability coefficients of the sub-dimensions of the scale (Cronbach Alpha) were found to be .88 for basic therapeutic communication skills, .85 for analytical skills, .72 for difficult clients and sociocultural differences, .76 for being neutral in the counseling process, .73 for being able to manage the counseling process, and the total reliability coefficient (Cronbach Alpha) was .92 within the scope of this study.

Attitude Scale Towards Giving Psychological Counseling Helping

In 2018, Aslan, İnceman-Kara, Kayır, and Kan developed a scale by working with a research group consisting of psychological counselors who provide psychological assistance in schools with 336 4th year students of psychological counseling and guidance department in 104 schools to measure the attitudes of professional members who provide psychological assistance towards providing psychological assistance. The 24-item scale consisted of three factors: "Positive tendency", "Negative tendency" and "Behavioral tendency". It was concluded that the internal consistency coefficient for the entire scale was .94, .93 for the positive trend dimension, .84 for the negative tendency dimension, and .85 for the behavioral tendency dimension. For this study, the reliability coefficients (Cronbach Alpha) of the sub-dimensions of the Attitude Scale Towards Giving Psychological Counseling Helping were

calculated as .88 for positive tendency, .80 for negative tendency, .77 for behavioral tendency, and .90 for total reliability coefficient (Cronbach Alpha).

Personal Information Form

It was a form that included participants' gender, the undergraduate department they graduated from, years of service in their profession, type, and level of the institution they were employed at, whether or not they took "Individual Psychological Counseling Practice, Group Psychological Counseling Practice, Principles and Techniques of Psychological Counseling " or their equivalent undergraduate courses, and if they did, their opinions on the efficiency of these courses. The participants were emphatically asked not to state their first and last names. Within the scope of the Personal Information Form, participants were given brief information about the study content and the people conducting the study.

Data Analysis

Following the implementation of the data collection tools used in the study, the collected data were checked, and 50 deficient and incomplete data were excluded from the evaluation. Data were analyzed with a total of 309 participants remaining in the data set. First, the frequency and percentage distributions of the demographic characteristics of the sample group were extracted, and then \bar{x} , ss , reliability coefficient, skewness, and kurtosis values were calculated for the scores of the Occupational Satisfaction Scale, the Counseling Self-Estimate Inventory and the Attitude Scale Towards Giving Psychological Counseling Helping. SPSS (Statistical Package for Social Sciences) for Windows 22.0 program was used to analyze the data obtained in the study.

As sufficient data could not be obtained in the "Wasn't Productive" sub-group regarding the efficiency opinions of individual and group psychological counseling practice and psychological counseling principles and techniques courses, ($N < 30$) was assumed not to show a normal distribution and Kruskal Wallis and Mann-Whitney U analyses were conducted as non-parametric tests (Büyükoztürk et al., 2019).

Stepwise regression analysis, one of the multiple regression analysis methods, was conducted to analyze whether psychological counseling skills and attitudes toward providing psychological counseling predicted the professional satisfaction of psychological counselors at a significant level.

Ethical Permits of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Bahçeşehir University Scientific Research and Publication Ethics Committee

Date of ethical review decision= 22.10.2020

Ethics assessment document issue number= 20221704-604.01.01

Findings

Kruskal Wallis and Mann-Whitney U test and descriptive statistical analyses regarding the variables of efficiency opinions on individual counseling practice, group counseling practice, and principles and techniques of psychological counseling courses, which were realized through the data collected from the population of the study, and multiple regression analysis results regarding what extent psychological counselors' psychological counseling skills and attitudes towards providing psychological counseling assistance predicted their professional satisfaction was shown in tables and explained in this section.

Findings Regarding the Efficiency Opinions Variable on the Individual Counseling Practice Course

The results and interpretations of the analyses carried out to show whether the total scores of professional satisfaction, psychological counseling skills and psychological counselors' attitudes towards providing psychological counseling assistance were significantly different according to the variable of efficiency opinions on individual counseling practice course were provided in Table 2.

Table 2. Descriptive statistics and Kruskal Wallis test results of OSS, COSI, and ASTGPCH scores according to the efficiency opinions variable on individual counseling practice course.

Dimensions	Categories	N	\bar{X}	SD	S. Mean	χ^2	P	Significant Difference
OSS	Wasn't Productive (A)	26	3.6865	.6862	111.08	13.18	.001*	A-C
	Somewhat productive (B)	90	3.6922	.6579	125.91			
	Productive (C)	193	3.9505	.6386	174.48			
COSI	Wasn't Productive (A)	26	4.1944	.6307	108.38	21.09	.000*	A-C, B-C
	Somewhat productive (B)	90	4.3054	.6576	130.85			
	Productive (C)	193	4.6121	.5886	172.54			
ASTGPCH	Wasn't Productive (A)	26	4.1987	.5849	132.73	25.03	.000*	A-C, B-C
	Somewhat productive (B)	90	4.2843	.5454	130.78			
	Productive (C)	193	4.5723	.3581	169.30			

* $P < .05$

OSS: Occupational Satisfaction Scale, COSI: Counseling Self-Estimate Inventory, ASTGPCH: Attitude Scale Towards Giving Psychological Counseling Helping

As seen in Table 2, the results of the Kruskal Wallis Test are included to determine whether the OSS, COSI, and ASTGPCH scores showed a significant difference compared to the efficiency opinions on individual counseling practice courses. According to the results of these analyses, OSS ($\chi^2 = 13.18$; $p < .05$), COSI ($\chi^2 = 21.09$; $p < .05$) and ASTGPCH ($\chi^2 = 25.03$; $p < .05$) were determined to show a statistically significant difference in line with the efficiency opinions on individual counseling practice course.

According to the results of the Mann-Whitney U-test conducted to determine the significant difference observed in OSS, COSI, and ASTGPCH, there was a statistically significant difference in OSS scores between the group that thought the individual counseling practice course was not productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$).

In COSI scores, there was a statistically significant difference between the group that thought the individual counseling practice course was not productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$). Additionally, there was a statistically

significant difference between the group that thought it was somewhat productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$).

In ASTGPCH scores, there was a statistically significant difference between the group that thought the individual counseling practice course was not productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$). Additionally, there was a statistically significant difference between the group that thought it was somewhat productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$).

Findings Regarding the Efficiency Opinions Variable on the Group Counseling Practice Course

The results and interpretations of the analyses carried out to show whether the total scores of professional satisfaction, psychological counseling skills and psychological counselors' attitudes towards providing psychological counseling assistance were significantly different according to the efficiency opinions variable on group counseling practice course were provided in Table 3.

Table 3. Descriptive statistics and Kruskal Wallis test results of OSS, COSI, and ASTGPCH scores according to the efficiency opinions variable on group counseling practice course.

Dimensions	Categories	N	\bar{X}	SD	S. Mean	χ^2	p	Significant Difference
OSS	Wasn't Productive (A)	34	3.83	.595	150.06	8.20	.017*	B-C
	Somewhat productive (B)	118	3.74	.654	137.94			
	Productive (C)	157	3.94	.665	168.89			
COSI	Wasn't Productive (A)	34	4.29	.792	132.94	13.03	.001*	A-C, B-C
	Somewhat productive (B)	118	4.37	.587	137.39			
	Productive (C)	157	4.61	.603	173.01			
ASTGPCH	Wasn't Productive (A)	34	4.31	.562	131.07	17.42	.000*	A-C, B-C
	Somewhat productive (B)	118	4.34	.508	134.17			
	Productive (C)	157	4.57	.371	175.84			

* $P < .05$

OSS: Occupational Satisfaction Scale, COSI: Counseling Self-Estimate Inventory, ASTGPCH: Attitude Scale Towards Giving Psychological Counseling Helping

As seen in Table 3, the results of the Kruskal Wallis Test are included to determine whether the OSS, COSI, and ASTGPCH scores showed a significant difference compared to the efficiency opinions on group counseling practice course. According to the results of these analyses, OSS ($\chi^2 = 8.20$; $p < .05$), COSI ($\chi^2 = 13.03$; $p < .05$) and ASTGPCH ($\chi^2 = 17.42$; $p < .05$) were determined to show a statistically significant difference in line with the efficiency opinions on individual counseling practice course.

According to the results of the Mann-Whitney U-test conducted to determine the significant difference observed in OSS, COSI, and ASTGPCH, there was a statistically significant difference in OSS scores between the group that thought the group counseling practice course was somewhat productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$).

In COSI scores, there was a statistically significant difference between the group that thought the group counseling practice course was not productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$). In addition, there was a statistically significant difference between the group that thought it was somewhat productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$).

In ASTGPCH scores, there was a statistically significant difference between the group that thought the group counseling practice course was not productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$). In addition, there was a statistically significant difference between the group that thought it was somewhat productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$).

Findings Regarding the Efficiency Opinions Variable on Principles and Techniques of Psychological Counseling Course

The results and interpretations of the analyses carried out to show whether the total scores of professional satisfaction, psychological counseling skills and psychological counselors' attitudes towards providing psychological counseling assistance were significantly different according to the efficiency opinions variable on psychological counseling principles and techniques course were provided in Table 4.

Table 4. *Descriptive statistics and Kruskal Wallis test results of OSS, COSI, and ASTGPCH scores according to the efficiency opinions variable on principles and techniques of psychological counseling course*

Dimensions	Categories	N	\bar{X}	SD	S. Mean	χ^2	p	Significant Difference
OSS	Wasn't Productive (A)	22	3.73	.681	139.23	16.18	.000*	B-C
	Somewhat productive (B)	83	3.61	.712	123.73			
	Productive (C)	204	3.96	.607	169.42			
COSI	Wasn't Productive (A)	22	4.25	.657	118.41	27.01	.000*	A-C, B-C
	Somewhat productive (B)	83	4.22	.621	118.13			
	Productive (C)	204	4.61	.595	173.95			
ASTGPCH	Wasn't Productive (A)	22	4.34	.437	126.68	34.34	.000*	A-C, B-C
	Somewhat productive (B)	83	4.21	.537	110.47			
	Productive (C)	204	4.56	.392	176.17			

* $P < .05$

OSS: Occupational Satisfaction Scale, COSI: Counseling Self-Estimate Inventory, ASTGPCH: Attitude Scale Towards Giving Psychological Counseling Helping

As seen in Table 4, the results of the Kruskal Wallis Test are included to determine whether the OSS, COSI, and ASTGPCH scores showed a significant difference compared to the efficiency opinions on psychological counseling principles and techniques course. According to the results of these analyses, OSS ($\chi^2 = 16.18$; $p < .05$), COSI ($\chi^2 = 27.01$; $p < .05$), and ASTGPCH ($\chi^2 = 34.34$; $p < .05$) were determined to show a statistically significant difference in line with the efficiency opinions on principles and techniques of psychological counseling course.

According to the results of the Mann-Whitney U-test conducted to determine the significant difference observed in OSS, COSI, and ASTGPCH, there was a statistically significant difference in OSS scores between the group that thought the psychological counseling principles and techniques course was somewhat productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$).

In COSI scores, there was a statistically significant difference between the group that thought the psychological counseling principles and techniques course was not productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$). Additionally,

there was a statistically significant difference between the group that thought it was somewhat productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$).

In ASTGPCH scores, there was a statistically significant difference between the group that thought the psychological counseling principles and techniques course was not productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$). Additionally, there was a statistically significant difference between the group that thought it was somewhat productive and the group that thought it was productive, in favor of the group that thought it was productive ($p < .05$).

Findings of Multiple Regression Analysis on the extent to which Psychological Counseling Skills and Attitude Towards Providing Psychological Counseling Predicted Professional Satisfaction

Multiple regression analysis was conducted to determine the extent to which psychological counselors' counseling skills and attitudes toward providing psychological counseling assistance predicted their professional satisfaction. To perform stepwise regression analysis, one of the multiple regression analysis methods, first, a test was conducted to determine whether the assumptions of ensuring multivariate normality and linearity and the absence of multicollinearity problems were met, and it was seen as a result of the analysis that the assumptions were met. To measure the Occupational Satisfaction Scale (OSS), the Counseling Self-Estimate Inventory (COSI), and the Attitude Scale Towards Giving Psychological Counseling Helping (ASTGPCH), their sub-dimensions, and the Psychological Counseling Skills, it can be said that the skewness and kurtosis values of the scales and their sub-dimensions were between 1.5 and -1.5 and showed a normal distribution.

In addition, the relationship between the variables was analyzed by calculating the value of Pearson Product Moment Correlation Coefficient (r). Pearson Product-Moment Correlation Coefficients among all variables regarding the prediction of Occupational Satisfaction were given in Table 5.

Table 5. *Pearson product-moment correlation coefficients among all variables regarding the prediction of occupational satisfaction*

Scale and sub-dimensions	1	2	3	4	5	6	7	8	9	10	11
1-OSS	1										
2- COSI	.386**	1									
3-Ability to Manage the Process	.275**	.746**	1								
4. Being Neutral	.263**	.649**	.388**	1							
5. Challenging Client and Sociocultural Differences	.235**	.791**	.518**	.465**	1						
6. Analytical Skills	.349**	.843**	.712**	.396**	.543**	1					
7. Therapeutic Communication	.383**	.954**	.638**	.506**	.715**	.764**	1				
8. ASTGPCH	.434**	.591**	.496**	.371**	.444**	.557**	.540**	1			
9- Positive Tendency	.408**	.539**	.469**	.315**	.378**	.553**	.492**	.915**	1		
10-Negative Tendency	.255**	.387**	.312**	.353**	.367**	.296**	.311**	.667**	.471**	1	
11-Behavioral Tendency	.364**	.489**	.398**	.256**	.346**	.451**	.480**	.813**	.627**	.311**	1

* $p < .05$; ** $p < .01$

OSS: Occupational Satisfaction Scale, COSI: Counseling Self-Estimate Inventory, ASTGPCH: Attitude Scale Towards Giving Psychological Counseling Helping

According to Table 5, it could be seen that there was a moderately positive and significant relationship ($r=.386$; $p<.01$) between the COSI total score and the OSS total score. Similarly, there was a moderately positive and significant relationship between the OSS total score and the analytical skills ($r=.349$; $p<.01$) and basic therapeutic communication skills ($r=.383$; $p<.01$), the sub-dimensions of the COSI. Additionally, there was a low-level positive and significant relationship among the other sub-dimensions of the ability to manage the counseling process ($r=.275$; $p<.01$), challenging clients, and sociocultural differences ($r=.235$; $p<.01$) and being neutral in the counseling process ($r=.265$; $p<.01$).

A moderately positive and significant ($r=.434$; $p<.01$) relationship was seen between the total scores of OSS and ASTGPCH total score. While there was a moderately positive and significant relationship between positive tendency ($r=.408$; $p<.01$) and behavioral tendency ($r=.364$; $p<.01$), which are the sub-dimensions of ASTGPCH, there was a low level positive and significant relationship with negative tendency ($r=.255$; $p<.01$).

The results and interpretations of the stepwise regression analysis regarding the prediction of Occupational Satisfaction were presented in Table 6.

Table 6. *Stepwise regression analysis results for prediction of occupational satisfaction*

Step	Selected Predictor Variable	β	Predictive Power (R)	Explained Variance (R ²)
Steady		.929		
1	COSI	.447	.434a	.186
2	ASTGPCH	.207	.463b	.209

COSI: Counseling Self-Estimate Inventory, ASTGPCH: Attitude Scale Towards Giving Psychological Counseling Helping

In Table 6, the variance in the occupational satisfaction of psychological counselors was seen to explain 20.9% by using COSI and ASTGPCH. The variance analysis of the stepwise regression analysis was presented in Table 7.

Table 7. *Variance analysis results regarding the prediction of occupational satisfaction competencies*

Step	Variance Source	KT	sd	KO	F	P
1	Regression	25.125	1	25.125	71.170	.000b
	Residual	108.380	307	.353		
2	Regression	28.571	2	14.285	41.658	.000c
	Residual	104.934	306	.343		

The stepwise regression analysis for the occupational satisfaction of school psychological counselors was carried out in two steps. Upon the examination of Table 7, it was seen that both steps of the stepwise regression analysis presented in Table 6 were significant. According to the results, COSI explained 18.6% of the variance, and ASTGPCH explained 2.3% of the explained variance. Both variables explained 20.9% of the total variance as significant predictors. According to the results of this analysis, it was seen that two variables entered the regression equation as significant predictors and explained 20.9% of the total variance.

Discussion and Conclusion

The discussion content regarding the findings of the study was given under the subheadings of discussion regarding the efficiency opinions on individual and group psychological counseling practice course and psychological counseling principles and techniques course respectively. Finally, a discussion was included on the extent to which psychological counseling skills and attitudes toward providing

psychological counseling assistance of psychological counselors predicted their occupational satisfaction.

Discussion on the Efficiency Opinions Variable of Individual and Group Psychological Counseling Courses

An examination was conducted on whether there was a significant difference in the occupational satisfaction of psychological counselors, their psychological counseling skills, and their attitude levels towards providing psychological counseling assistance according to the efficiency opinions on individual and group counseling practice courses. According to the findings, there was a significant difference between the groups in their efficiency opinions regarding the relevant courses.

Atıcı and Çam (2013) stated in their study that practical courses were especially effective in applying theoretical knowledge and developing school psychological counseling skills. Psychological counselor trainees who received psychological counseling training with the group participating in Lüleci's (2015) study stated that receiving supervision feedback was effective in the development of psychological counseling skills and their shortcomings and that the number of practices should be increased. On the other hand, Yıldırım (2020) declared that the psychological and physical listening skills of psychological counseling trainees who conducted a psychological counseling session with a supervisor were at a higher level than those who did not conduct any session with a supervisor. According to the Vroom Expectancy Theory, it was predicted that meeting expectations regarding the efficiency of lessons would stimulate the continuity of the behavior.

Larson (1998) supported this view by stating that counselors' self-efficacy beliefs were effective in the successful completion of the counseling process. It was believed that the psychological counseling process, which was successful and effective for the client, would also be a source of job satisfaction for the psychological counselor. Environmental factors, such as being inspected and appreciated by the supervisors of psychological counselor trainees who were involved in psychological counseling practices and receiving positive feedback from their managers and clients in the first years of their professions, may enable psychological counselors to display positive tendencies toward fulfilling their professional duties and responsibilities within the framework of ethical rules. According to Maslow's esteem needs in his hierarchy, achieving success and establishing mutual respect would increase the individual's self-confidence. In this context, it was predicted that they would have positive behavioral attitudes toward providing psychological counseling assistance.

Discussion on the Efficiency Opinions Variable of Psychological Principles and Techniques of Counseling Course

The occupational satisfaction of psychological counselors, their psychological counseling skills, and attitude levels toward providing psychological counseling services were examined to determine whether they differed significantly according to their efficiency opinions on the psychological counseling principles and techniques course. The findings indicated that there was a significant difference between the groups in their efficiency opinions related to the course.

Yaka (2011) emphasized the importance of skills training in psychological counselor training by investigating the behaviors and reactions of psychological counselor trainees in the sessions before and after receiving skills training as well as their effectiveness. Sarpdağ (2019) stated that there was a significant positive relationship between the self-efficacy and psychological counseling skills of

psychological counselors. Similarly, Ekşi et al. (2015) declared that the self-efficacy and listening skills of psychological counselors together positively and significantly affected their job satisfaction. Yıldırım (2020) stated in his study that there was a positive and significant relationship between psychological counselors' subjective well-being, their ability to focus more on the tasks they undertook, and their physical listening psychological counseling skills.

In order to become effective psychological counselors, trainees need to build their psychological capital by making investments in themselves. Pamukçu (2011) concluded that there was a positive and significant relationship between the self-efficacy of psychological counseling trainees and the number of times they held psychological counseling sessions. The more students in the psychological counseling and guidance program are provided with practice and supervision support, the more they will have the opportunity to reinforce their psychological counseling skills. Accordingly, it was predicted that there would be an increase in their self-efficacy level, and they would experience satisfaction when they started their profession. Results of some studies on this subject indicated that a high level of self-efficacy positively predicted job satisfaction (Baggerly & Osborn, 2006; Boon et al., 2015). Uslu (2005) conducted a similar study and concluded that physical and psychological counseling skills showed positive progress with developmental assistance skill training.

Setting and achieving goals motivate individuals according to Locke's Goal Setting Theory. Goals are determined for the issues of the clients in the psychological counseling processes as well. It was stated in the literature that it was necessary to acquire adequate skills and to receive training to be an effective psychological counselor to manage this process. It was thought that accompanying and contributing to the development and change of the client would contribute to the job satisfaction of psychological counselors. It was believed that the low motivation experienced would cause the psychological counselors to think inadequately in terms of psychological counseling skill competence and their behavioral and negative attitude tendencies toward providing psychological counseling assistance. Additionally, Haskan-Avcı, Tuna, Büyükçolpan, Güngör, and Yörükoğlu (2019) concluded in their study that, when clients wanted to get psychological assistance from an expert, they would choose a psychological counselor based on their background, education, career qualifications in terms of their areas of expertise and experience, and their personal characteristics in terms of their age, gender, and worldviews. An effective counseling relationship is affected by counselors' attitudes toward their own feelings and behaviors. The psychological counselor's attitudes toward himself/herself also affect his/her external behavior (Egan, 1990). These findings and opinions were thought to emphasize the importance of courses that shape psychological counselors' attitudes toward themselves and providing assistance as well as their skills.

Discussion on to What Extent Psychological Counseling Skills and Attitude towards Providing Psychological Counseling Assistance Predicted Occupational Satisfaction

To what extent the psychological counselors' psychological counseling skills and their attitudes toward providing psychological counseling assistance predicted their occupational satisfaction was examined. According to the findings, it was observed that psychological counseling skills of psychological counselors and their attitudes towards providing psychological counseling assistance predicted their occupational satisfaction by 18.6% and 2.3% respectively. Based on this finding, it can

be stated that increasing the efficiency of skill courses within the scope of the training program of the psychological counseling and guidance department could also increase competence in skills.

Some studies that supported this finding of the study stated that the level of occupational satisfaction of psychological counselors increased due to the rise in their self-efficacy levels (Baggerly & Osborn, 2006; Boon et al., 2015). In the study, conducted by Öz- Soysal, Uz- Baş and Aysan (2016), it was discovered that school psychological counselors did not consider their theoretical and practical knowledge, skills, and equipment to be sufficient and the reason for this shortcoming was due to deficiencies in undergraduate or graduate education processes, especially in supervisor training. In Karataş-Şahin and Baltacı's (2013) study, psychological counselors' opinions on the adequacy of undergraduate education were investigated and the findings were summarized as follows; it was pointed out based on the school psychological counselors' opinions about the training they received that while two people declared that the training was theoretically sufficient, three people stated that the practical courses were insufficient, and three people informed that the training was completely inadequate. These findings were thought to support the findings of this study.

Yüksel-Şahin (2016) asserted that one had to maintain a positive attitude to use the theoretical knowledge in skills training effectively during the session. It can be said that the quality of the education counselor candidates received, their psychological counseling skill competencies, and their positive attitudes towards providing psychological counseling assistance were critical factors in terms of their job satisfaction when evaluated together. Porter and Steers (1973) declared that the inconsistency between individuals' expectations when they began their careers, and their experiences would shape their attitudes toward their jobs and negatively affect the individual in terms of feeling burnout. It was thought that such views would cause professional staff to experience contradictions while fulfilling their job-related duties and responsibilities. In this sense, the findings of this study were supportive as they were moderately positive and significant in the correlation between job satisfaction and attitudes toward providing psychological counseling assistance.

Kınalı (2000) announced that when professional development opportunities were provided, school psychological counselors could enjoy their jobs when they adapt themselves to this development and thus, their level of professional satisfaction would increase. Similarly, it was concluded that the practical experience and self-efficacy of psychological counselors intensified their job satisfaction (Boon et al., 2005). In addition, the majority of school psychological counselors, who participated in the Karataş-Şahin and Baltacı (2013) study, pointed out that the education they received and what was expected of them as a duty in schools were quite different. It was seen that school psychological counselors had difficulties in handling, preventing, and intervening in students' problems (Öz-Soysal et al., 2016). To establish a productive relationship between students and psychological counselors, who happen to be at the center of contemporary education and educational training, it is absolutely crucial to be aware of students' expectations. It helps students address their needs, increase their academic success, and develop a healthy personality. The efficiency of educational activities decreases in cases where students cannot make any contribution (Savaş, 2006). In this context, consistent with the findings of this study, it would be considered critical to develop and support the professional development opportunities of school psychological counselors and increase their competencies.

Recommendations

In this study, considering the factors that may affect the occupational satisfaction of school psychological counselors, the following recommendations can be made for both researchers and practitioners:

It is recommended to explore whether the occupational satisfaction level of school psychological counselors shows a significant difference compared to the undergraduate programs they graduated from in an effort to clearly reveal the differences in the courses within the undergraduate education programs.

It is deemed essential to carry out comprehensive research that will contribute to the literature, where attitudes toward providing psychological counseling assistance, demographic information affecting job satisfaction, and individual and environmental factors are evaluated together.

It is suggested that the scope of studies aimed at improving the quality of education in undergraduate programs should be focused on psychological counseling skills, which are highly predictive of occupational satisfaction.

To increase the competence levels of psychological counselors, it is considered highly critical for the provincial executive commissions of guidance and psychological counseling services to convey the in-service training required by psychological counselors to the competent authorities, to attach importance to these services, to increase the quality of in-service training and to ensure the professional development of psychological counselors.

It is recommended to ensure standardization for the Psychological Counseling and Guidance undergraduate programs, to establish consistency in educational institutions, and to standardize the number of psychological counselor trainees, where an expert faculty member will be responsible for the supervision training taken within the scope of Individual and Group Psychological Counseling Practice courses.

References

- Aladağ, M. (2013). Counseling skills pre-practicum training at guidance and counseling undergraduate programs: a qualitative investigation. *Educational Sciences: Theory & Practice*, 13(1), 72-79.
- Aladağ, M., & Bektaş, D. Y. (2009). Examining individual-counseling practicum in a Turkish undergraduate counseling program. *Eurasian Journal of Educational Research*, 37, 53-70.
- Aslan, A. M., İnceman- Kara, F., Kayır, M., & Kan, A. (2018a). Psikolojik danışma yardımı vermeye yönelik tutum ölçeğinin geliştirilmesi [Development of attitude scale towards giving psychological counseling helping]. *Turkish Students- Educational Sciences*, 13(27), 107- 122.
- Aslan, A. M., Koç, H., & Büyüksevindik, B. (2018b). Psikolojik danışma ve rehberlik lisans programı 1.sınıf öğrencilerinin programa ilişkin beklentileri [Expectations related to the program of 1st grade students who study at psychological counseling and guidance undergraduate program]. *MANAS Journal of Social Studies*, 7(3), 143- 160.
- Atıcı, M., & Çam, S. (2013). Okullarda pdr uygulamaları dersine ilişkin öğrenci görüşlerinin incelenmesi [Students' views on the course of counseling and guidance practice at schools]. *Turkish Psychological Counseling and Guidance Journal*, 4(39), 106-119.
- Baggerly, J. N., & Osborn, D. (2006). School counselors' career satisfaction and commitment: Correlates and predictors. *Professional School Counseling*, 9(3), 197-205.
- Bond, T. (2021). *Psikolojik danışmanlıkta etik ve yasal konular* [Ethical and legal issues in psychological counseling]. (B. Yeşilyaprak, Trans.; 4th ed.). Nobel Akademik.
- Boon, O. P., Jaafar, W. M. W., & Baba, M. (2015). Factors contributing to job satisfaction among school counselors. *Procedia - Social and Behavioral Sciences*, 211, 803 – 810.
- Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2019). *Bilimsel araştırma yöntemleri* [Scientific research methods]. (26th ed.). Pegem Akademi.
- Corey, G. (2008). *Psikolojik danışma kuram ve uygulamaları* [Theory and practice of counseling and psychotherapy]. (T. Ergene, Trans.). Mentis.
- Cormier, S., & Hackney, H. (2018). Psikolojik danışma: stratejiler ve müdahaleler [Psychological counseling strategies and interventions]. (S. Doğan & B. Yaka, Trans; 4th ed.). Pegem Akademi.
- Egan, G. (1990). *The skilled helper: A systematic approach to effective helping* (4th ed.). Brooks/Cole Publishing Company.
- Ekşi, H., Ismuk, E., & Parlak, S. (2015). Okul psikolojik danışmanlarında iş doyumunun yordayıcısı olarak psikolojik danışma öz yeterliği ve dinlenme becerileri [In psychological counselor self-efficacy beliefs and active listening skills as predictor of job satisfaction]. *Bolu Abant İzzet Baysal University Journal of Education Faculty*, 15(2), 84-103.
- Gençdoğan, B., & Özpolat, A. T. (2007, October 17-19). Psikolojik danışma becerilerini ölçmek için: Danışman Beceri Ölçeği [To measure psychological counseling skills: Counselor Skill Scale]. *IX Ulusal Psikolojik Danışma ve Rehberlik Kongresi*, İzmir.
- Haskan Avcı, Ö., Tuna, B., Büyükçolpan, H., Güngör A., & Yörükoğlu, M. (2019). Üniversite öğrencilerinin psikolojik danışman tercihlerinin incelenmesi [Examination of counselor preferences of university students]. *Turkish Psychological Counseling and Guidance Journal*, 9(52), 209-239.
- İkiz, F. E. (2006). *Danışma becerileri eğitiminin danışmanların empatik eğilim, empatik beceri ve tükenmişlik düzeyleri üzerindeki etkisi* [The effect of counseling skills training on counselors' empathic tendency, empathic skill and burnout levels]. (Tez No. 189854). [Doctoral dissertation, Dokuz Eylül University], National Thesis Center.
- İkiz, F. E. (2010). Psikolojik danışmanların tükenmişlik düzeylerinin incelenmesi [The investigation of the burnout levels of the counselors]. *Ahi Evran University Journal of Kırşehir Education Faculty*, 11(2), 25-43.
- Karataş, Z., & Şahin- Baltacı, H. (2013). Ortaöğretim kurumlarında yürütülen psikolojik danışma ve rehberlik hizmetlerine yönelik okul müdürü, sınıf rehber öğretmeni, öğrenci ve okul rehber öğretmenin (psikolojik danışman) görüşlerinin incelenmesi [An investigation of opinions of school counselor, students, class guidance teacher, school administrator about counseling and guidance services at high school]. *Ahi Evran University Journal of Kırşehir Education Faculty*, 14(2), 427-460.
- Kınalı, G. (2000). *Devlet ve özel okullardaki rehber öğretmenlerin iş tatminleri* [Job satisfaction of guidance counselors in public and private schools]. [Unpublished Master Thesis]. İstanbul University.

- Kocayörük, E. (2000). *Çeşitli değişkenler göre rehber öğretmenlerin meslek doyumlarının karşılaştırılması* [Comparison of counselor teachers' job satisfaction according to various variables]. [Unpublished Master Thesis]. Ankara University.
- Kocabaş, H. (2019). *Rehber öğretmenlerin mesleki doyum düzeylerinin mesleki gelişim çabaları açısından incelenmesi* [Analysing the job satisfaction levels of school counselors in terms of their professional development efforts]. (Tez No. 594475). [Master Thesis, Bolu Abant İzzet Baysal University], National Thesis Center.
- Köksal, H. K. (2019). *Okul psikolojik danışmanlarının özel eğitim öz yeterlik alguları ile iş doyumları arasındaki ilişki: Mersin il örneği* [The relationship between school psychological counselors' special education self-efficacy perceptions and job satisfaction: Mersin province example]. [Unpublished Master Thesis]. Çağ University.
- Kuzgun, Y., Sevim, S., & Hamamcı, Z. (1999). *Mesleki doyum ölçeğinin geliştirilmesi* [Development of the professional satisfaction scale] *Turkish Psychological Counseling and Guidance Journal*, 2(11), 14-18.
- Kuzgun, Y., Aydemir- Sevim, S., & Hamamcı, Z. (2012). Mesleki doyum ölçeği [Job satisfaction scale] In Y. Kuzgun & F. Bacanlı (Eds.), *Rehberlik ve psikolojik danışmada kullanılan ölçme araçları ve programlar dizisi: Rehberlik ve psikolojik danışmada kullanılan ölçekler 1* [Series of measurement tools and programs used in guidance and psychological counseling: scales used in guidance and psychological counseling 1]. (4th ed., pp.77-83). Nobel.
- Larson, L. M. (1998). The social cognitive model of counselor training. *The Counseling Psychologist*, 26(2), 219-273.
- Larson, L. M., Suzuki, L. A., Gillespie, K. N., Potenza, M. T., Bechtel, M. A., & Toulouse, A. L. (1992). Development and validation of the counseling self-estimate inventory. *Journal of Counseling Psychology*, 39,105- 120.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Prentice Hall.
- Lüleci, B. (2015). *Beceriye dayalı grupla psikolojik danışma eğitiminin grupla psikolojik danışma becerilerine etkisi* [The examination of skilled group counselor training model's effect on group counseling skills: The example of Ege University]. (Tez No. 391362). [Doctoral dissertation, Ege University], National Thesis Center.
- Öz- Soysal, F. S., Uz- Baş, A., & Aysan, F. (2016). Okul psikolojik danışmanlarının psikolojik danışma yaklaşımlarına ilişkin görüşleri [Views of school counselors on psychological counseling]. *Turkish Psychological Counseling and Guidance Journal*, 6(46), 53- 69.
- Pamukçu, B. (2011). *Psikolojik danışman adaylarının psikolojik danışma öz-yeterlik algılarının incelenmesi* [The investigation of counseling self-efficacy levels of counselor trainees]. (Tez No. 300767). [Master Thesis, Middle East Technical University], National Thesis Center.
- Porter, L. W., & Steers, R. M. (1973). Organizational, work, and personal factors in employee turnover and absenteeism. *Psychological Bulletin*, 80(2), 151-176.
- Sarpdağ, M. (2019). *Psikolojik danışman adaylarının psikolojik danışma becerilerinin yordayıcıları: Psikolojik danışma öz-yeterlik, duygu yönetimi ve kişilik özellikleri* [The predictors of counseling skills of counselors trainees: Counseling self-efficacy, emotion management, and personality traits]. (Tez No. 555328). [Master Thesis, Mehmet Akif Ersoy University], National Thesis Center.
- Savaş, A. C. (2006). *Liselerde internet üzerinden rehberlik ve psikolojik danışmanlık hizmetlerinin yürütülmesine ilişkin öğrenci, veli ve rehber öğretmen görüşlerinin incelenmesi* [Analysis of the opinions of the students, parents and school counselors concerning the use of İnternet for guidance and counseling at high schools (A sample of the Gazinatep city)]. (Tez No. 186745). [Master Thesis, Gaziantep University], National Thesis Center.
- Taşdelen-Karçkay, A. (2008). Farklı eğitim programı mezunu psikolojik danışmanların mesleki yeterlilikleri ve iş doyumlarının incelenmesi [An investigation of professional competence and job satisfaction of school counselors graduated from different programs]. *Pamukkale University Journal of Education*, 2(24), 24-35.
- Uslu, M. (2005). *Psikolojik danışmanların danışma becerilerinin geliştirilmesi* [Improving counselling skills psychological counsellors]. (Tez No. 161685). [Doctoral dissertation, Selçuk University], Selçuk University Digital Archive Systems.

- Uslu, N. (1999). *Resmi eğitim kurumlarında çalışan psikolojik danışma ve rehberlik uzmanlarının iş doyumu ve tükenmişlik düzeylerinin danışmanların denetim odağı ve bazı değişkenlere göre karşılaştırması* [Comparison of job satisfaction and burnout levels of psychological counseling and guidance specialists working in official educational institutions according to the counselors' locus of control and some variables]. [Unpublished Master Thesis]. Selçuk University.
- Yaka, B. (2011). *Mikro beceri eğitimi programı'nın psikolojik danışman adaylarının psikolojik danışma becerilerine etkisi becerilerine etkisi* [The effect of microcounseling program on counseling skills of counselor trainees]. (Tez No. 286565). [Doctoral dissertation, Ege University], National Thesis Center.
- Yıldırım, F. (2020). *Psikolojik danışman adaylarının psikolojik danışma becerileri ile öznel iyi oluşları ve empatik eğilimleri arasındaki ilişkinin incelenmesi* [Examining the relationship between psychological counseling skills, subjective well-being and empathic tendencies of psychological counselor candidates]. (Tez No. 655698). [Master Thesis, Burdur Mehmet Akif Ersoy University], National Thesis Center.
- Voltan- Acar, N. (2015). *Grupla psikolojik danışma ilke ve teknikleri* [Group psychological counseling principles and techniques]. (11.th). Nobel.
- Wiggins, J. D., & Giles, T. A. (1984). *The relationship between counselors and students self esteem as related to counseling outcomes. School Counselor, 2, 18- 22.*
- Yüksel- Şahin, F. (2016). Okul psikolojik danışmanlarının okullarında verdikleri psikolojik danışma ve rehberlik hizmetlerini değerlendirmeleri [School counselors' assessment of the psychological counseling and guidance services they offer at their schools]. *Kastamonu Education Journal, 24(1), 281-298.*

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 50%

Author 2: 50%

Conflict Statement

There is no conflict of interest in the research.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Psikolojik Danışmanların Psikolojik Danışma Becerileri ve Psikolojik Danışmanlık Tutumlarının Mesleki Doyuma Etkisi

Giriş

Psikolojik danışma sürecinin başarılı bir şekilde tamamlanması, psikolojik danışman ve danışan arasındaki ilişkinin niteliğine bağlıdır (Cormier & Hackney, 2018). Psikolojik danışma sürecinde psikolojik danışman, terapötik ilişkinin kurulması ve davranışsal hedeflerin gerçekleştirilmesi için etkili bir terapötik güç olarak önemlidir (Voltan-Acar, 2015). Psikolojik danışmanın yardım verme konusundaki olumlu tutumu, sürecin etkinliğini ve ilişkinin niteliğini etkileyecektir (Aslan vd., 2018a).

Psikolojik danışma ve rehberlik lisans programı öğrencilerinin beklentileri arasında kişilere etkili yardım sunma, iletişim becerilerine sahip olma, psikolojik danışma becerilerine sahip olma ve insan davranışlarını anlama yetkinliklerine sahip olmaları yer almaktadır (Aslan vd., 2018b). Öğrencilerin program sonrasında kazanmaları gereken yetkinlikler, teorik eğitimlerle öğrenilen bilgiler ve öğrencilerin sahip olması beklenen beceriler donanımlı bir psikolojik danışmanın özelliklerini ortaya koymaktadır (Aslan vd., 2018b). Bu anlamda psikolojik danışma becerileri, psikolojik danışma ve rehberlik hizmetlerinin hedefi olan danışanların uyumunu ve gelişimini etkileyen bir faktör olarak öne çıkmaktadır. Danışmanların kişisel yetkinliklerinin ve becerilerinin bu denli önemli hale gelmesinde aldıkları eğitimin yeri çok önemlidir. Psikolojik danışma sürecinde, bu konuda eğitim almış ve uzman olan psikolojik danışman ile danışan arasında profesyonel bir etkileşim söz konusudur (Uslu, 2005). Psikolojik danışma yardımının yürütüldüğü önemli kurumlar arasında yer alan okullarda, psikolojik danışma hizmetlerinin öğrenciler için nitelik ve nicelikte yetersiz bir şekilde verilememesi öğrencilerin ilerleyen yıllarda karşılaşılabilecekleri akademik ve sosyal sorunları etkilemektedir (Aslan vd., 2018a). Etkili bir psikolojik danışma yardımının başarılı olabilmesi için psikolojik danışmanın psikolojik danışma becerileri konusunda yetkin olması gerekir.

Etkili psikolojik danışmanlar yetiştirmek, psikolojik danışman eğitiminin merkezinde yer alır. Psikolojik danışmanın yeterliliği için terapötik yaklaşımlar ve müdahaleler, teknik ve bilişsel beceriler üzerinde durulur, beceri eğitimi ve süpervizyonunun faydalarından bahsedilir. Beceri eğitiminde sınıf içi eğitimin en temel unsuru olan psikolojik danışma uygulamaları bütüncül bir şekilde ele alınmalıdır. Uygulamalı psikolojik danışma süreçlerine ve süpervizyona katılım, öğrencilerin öğrendiklerini uygulamalarına ve kendilerinin farkında olmalarına olanak tanır (Aladağ & Bektaş, 2009). Danışmanlar, kişisel mesleki duyguları ve mesleki bağlılıklarının yanı sıra, yetkinlik ve mükemmellik arasında kalan standarda ulaşmak için çaba gösterirler. Yetkinlik açısından kabul edilebilir en düşük seviyenin üzerine çıkmak için birçok alanda eğitim alarak becerilerini artırır ve kendilerini geliştirirler (Bond, 2021).

Psikolojik danışmanların kişisel ve mesleki yeterlilikleri açık ve örtük davranışlarını etkilemektedir. Kendini yetersiz hisseden psikolojik danışmanlar aynı zamanda başarısızlık duygusunu da hissederler (Savicky & Cooley, 1982'den akt. İkiz, 2006) ve aldıkları eğitim ve edindikleri deneyim ne olursa olsun kendi yeterliliklerini sorgularlar. Bu durum, psikolojik danışmanların danışanlara eğitim ve yetkinliklerine uygun olarak psikolojik danışma yardımı vermelerini engelleyen bir sorun olarak karşımıza çıkmaktadır. Kişinin kendi yeterliliklerini sorgulamadaki tereddütü, psikolojik danışmanın hem eğitimini ve yetkinliğini aşan konularda çalışmasını engellemekte hem de psikolojik danışmanın kendine güvenmesini engellemektedir (İkiz, 2006).

Corey (2008), psikolojik danışmada bulunması gereken özellikler tanımlanırken psikolojik danışmanın tutum ve kişilik özelliklerinin ön plana çıkarıldığını belirtmektedir. Psikolojik danışmanların psikolojik danışma hizmetleri sırasındaki tutumları davranışlarına yansımakta ve sürecin başarılı bir şekilde sonuçlanmasına doğru ilerlemesini etkileyeceği öngörülmektedir. Psikolojik danışma sürecinde önemli olan terapötik ilişki, psikolojik danışma yardımı veren kişilerin bu süreçteki tutumlarından da etkilenmektedir (Voltan-Acar, 2015). Olumlu tutum sergileyen danışmanlar, danışana verecekleri yardımın kalitesini etkileyecek ve aynı zamanda danışmanın alacağı memnuniyeti artıracaktır (Aslan vd., 2018a). Psikolojik danışmanın kendisini seansa dahil edebilmesi, etkili bir şekilde müdahale edebilmesi ve danışanın seansa getirdiği bilgileri doğru bir şekilde organize edebilmesi için olumlu bir tutuma sahip olması önemlidir (Aslan vd., 2018a). Öte yandan insanlar temel fizyolojik ihtiyaçlarının karşılanmasını mesleki faaliyetler ve maddi kazanç yoluyla sağlarken, üretkenlik, yetenek sergileme, kendini geliştirme, toplumda statü sahibi olma gibi sosyal ve psikolojik ihtiyaçlarını da karşılamaktadırlar. Sağlıklı bir insan için yapısına ve kişiliğine uygun bir mesleğin mensubu olmak ve iş ortamında çalışmak mutluluğu beraberinde getirir. Bu bağlamda, kişilerin iş hayatındaki mutlulukları, genel yaşamlarındaki mutluluklarını da etkilediği için mesleki doyum, kariyer psikolojik danışmanları ve endüstri psikologları tarafından incelenen araştırma konusu olmuştur (Kuzgun vd., 2012).

Psikolojik danışmanların danışmanlığa karşı olumlu tutum sergilemeleri, danışana verilecek yardımın niteliğini etkileyecek ve aynı zamanda danışmanın alacağı memnuniyeti artıracaktır. Mesleki tatmini etkileyen en önemli faktörlerden biri mesleğe ilişkin olumlu tutuma sahip olmaktır (Aslan vd., 2018a). Bireylerin meslekleri, çalıştıkları kurum ve kendi kişisel faaliyetleri ile ilgili tutumları mesleki tatmini etkileyen önemli faktörler olarak görülmektedir (Cherniss, 1980; akt. İkiz, 2010). Psikolojik danışmanların mesleki ve iş doyumlarını inceleyen araştırmalar farklı sonuçlar ortaya koymaktadır. Yapılan bazı araştırmalarda psikolojik danışman öz-yeterlik ve dinleme becerilerinin iş doyumunu anlamlı düzeyde yordadığı (Ekşi vd., 2015) ve mesleki doyum düzeyi ile mesleki gelişim çabaları

arasında orta düzeyde anlamlı bir ilişki olduğu görülmüştür (Kocabaş, 2019). Kocayörük (2000), Köksal (2019) ve Taşdelen-Karçkay (2008) ise mesleki yeterlilik ve mezun olunan lisans programı ile mesleki doyum arasında anlamlı bir fark olmadığı bulgusuna ulaşmıştır. Yurt dışında yapılan çalışmalar da benlik saygısı yüksek psikolojik danışmanların öğrencilerine daha etkili psikolojik yardım sağladıklarını göstermiştir (Wiggins & Giles, 1984); yüksek düzeyde öz-yeterliliğe sahip olmanın mesleki tatmini pozitif yönde yordadığını belirtmiştir (Baggerly & Osborn, 2006; Boon vd., 2015). Araştırmalar, olumlu düşünce ve tutumların mesleki tatmini de artırdığını göstermektedir (Ekşi vd., 2015). Psikolojik danışmanların aldıkları eğitimin niteliği, mesleki öz yeterlilikleri ve psikolojik danışma hizmeti vermelerine engel olan durumlar gibi konuların araştırılması önemlidir. Psikolojik danışman, psikolojik danışman danışana fayda sağlayamayacağı ve yetersizlik duygusu nedeniyle mesleki doyum açısından tatminsizlik yaşayacağı düşünülmektedir.

Bu bağlamda, yukarıda da değinildiği üzere, psikolojik danışmanların mesleki öz-yeterliliklerini, mesleğe yönelik tutumlarını ve mesleki doyumlarını inceleyen araştırmalar olmakla birlikte, psikolojik danışmanları eğitim ve nitelikleri ile psikolojik danışma becerilerine göre inceleyen araştırmalar sınırlıdır. Bu bakımdan psikolojik danışman eğitiminde verilen temel uygulama derslerinin yeterlik görüşleri ile psikolojik danışmanların yeterlilikleri, tutumları ve mesleki doyumları incelendiğinde, verilen eğitimin niteliğine ve ilgili derslerin önemine katkı sağlanabilir. Psikolojik danışmanların mesleki gelişimleri için hizmet kalitesini etkileyen faktörlerin ortaya konulması önemli görülmektedir. Psikolojik danışmanların eğitimleri sırasında aldıkları temel dersler, psikolojik yardım süreci ve bunları ne ölçüde yararlı buldukları, aldıkları eğitimin niteliği hakkında bilgi vermektedir. Bu bilgiler ışığında öğretim programının farklı bir bakış açısıyla incelenmesine katkı sağlayabilir. Benzer şekilde, psikolojik danışmanların psikolojik danışma becerilerinin yeterliliklerinin değerlendirilmesinin önemli olduğu düşünülmektedir.

Psikolojik danışmanların psikolojik danışma becerilerinin, psikolojik danışma yardımı sağlamaya yönelik tutumlarının ve mesleki doyumla ilişkisinin incelenmesi, psikolojik danışma ve rehberlik mesleğinin ve meslek kadrosunun gelişimi açısından önemli görülmektedir. Bu nedenle bu araştırmada, psikolojik danışmanların bireyle ve grupla psikolojik danışma uygulama derslerinin verimliliği, psikolojik danışma ilke ve teknikleri ya da eşdeğerlerine ilişkin verimlilik görüşleri açısından mesleki doyum, psikolojik danışma becerileri ve psikolojik danışma yardımı vermeye yönelik tutumlarında anlamlı bir farklılık olup olmadığı araştırılmıştır. Ayrıca psikolojik danışmanların psikolojik danışma becerilerinin ve psikolojik danışma yardımı sağlamaya yönelik tutumlarının mesleki doyumları üzerindeki etkileri incelenmiştir.

Yöntem

Araştırmanın çalışma grubunu eğitim kurumlarının farklı kademelerinde (Anaokulu, ilkokul, ortaokul, ortaöğretim ve Rehberlik ve Araştırma Merkezleri) görev yapan 309 rehber öğretmen (230 kadın ve 79 erkek) oluşturmuştur. Katılımcıların çoğunluğu 0-5 yıl (n=145, %46,9), 89 katılımcı (%28,8) 6-10 yıl, 26 kişi (%8,4) 11-15 yıl, 49 katılımcı (%15,9) 15 yıl ve üzeri süredir çalışmaktadır.

Katılımcıların 258'i (%83,5) devlet okullarında görev yaparken, 51'i (%16,5) özel okullarda görev yapmaktadır. Seçtikleri derslerin lisans eğitimlerinde verimliliği sorulduğunda katılımcıların 26'sı (%8,4) lisans eğitimlerinde aldıkları bireysel rehberlik dersinin verimli olmadığını, 90'ı (%29,1) az verimli, 193'ü (%62,5) ise verimli olduğunu belirtmiştir. Benzer şekilde katılımcıların 34'ü (%11)

lisans eğitiminde aldıkları grupla psikolojik danışma dersinin verimli olmadığını, 118'i (%38,2) az verimli, 157'si (%50,8) ise verimli olduğunu belirtmiştir. Yine katılımcıların 22'si (%7,1) lisans eğitiminde aldıkları rehberlik ilke ve teknikleri dersinin verimli olmadığını, 83'ü (%26,9) biraz verimli olduğunu, 204'ü (%66) ise verimli olduğunu düşünmektedir.

Veri toplama aracı olarak Mesleki Doyum Ölçeği (MDÖ), Psikolojik Danışma Becerilerini Ölçmek İçin Danışman Beceri Ölçeği (PDBÖDBÖ) ve Psikolojik Danışma Yardımı Vermeye İlişkin Tutum Ölçeği (PDYVYTÖ) ve Kişisel Bilgi Formu kullanılmıştır. Toplanan veriler SPSS (Statistical Package for Social Sciences) for Windows 22.0 ile analiz edilmiştir. Psikolojik danışmanın derslerin verimlilik düzeylerine ilişkin görüşlerinin psikolojik danışma becerileri, psikolojik danışma yardımı vermeye yönelik tutumları ve mesleki doyumları arasındaki farklılıkları test etmek için Kruskal Wallis ve Mann-Whitney U testinin parametrik olmayan testlerinden yararlanılmıştır. Psikolojik danışmanın psikolojik danışma becerilerinin ve psikolojik danışma hizmetlerine yönelik tutumlarının mesleki doyumlarını açıklayıp açıklamadığı basamaklı çoklu regresyon yöntemleri ile test edilmiştir.

Bulgular

Araştırmanın parametrik olmayan istatistiksel yöntemlerle analiz edilen bulguları, katılımcıların bireyle ve grupla psikolojik danışma ile psikolojik danışma ilke ve teknikleri derslerine ilişkin verimlilik görüşlerinde anlamlı farklılıklar olduğunu göstermiştir.

Bu analizlerin sonuçlarına göre hem MDÖ ($x^2= 13,18; p<.05$), hem PDBÖDBÖ ($x^2= 21.09; p<.05$) hem de PDYVYTÖ ($x^2 = 25.03; p<.05$) puanlarının bireyle psikolojik danışma dersinin verimliliği ile ilgili görüşlere göre istatistiksel açıdan anlamlı bir farklılık gösterdiği tespit edilmiştir. Sonuçlar, dersi "biraz verimli" bulan grup ile "verimli" olduğunu düşünen grup arasında, dersi "verimli" bulan grup lehine istatistiksel olarak anlamlı bir fark olduğunu ortaya koymuştur ($p<.05$).

Grupla psikolojik danışma dersinin verimliliğine ilişkin görüşlere göre hem MDÖ ($x^2= 8.20; p<.05$), hem PDBÖDBÖ ($x^2= 13.03; p<.05$) hem de PDYVYTÖ ($x^2= 17.42; p<.05$) puanları istatistiksel açıdan anlamlı farklılaşırken; "verimli" bulan grup lehine istatistiksel olarak anlamlı fark bulunmuştur ($p<.05$).

Benzer şekilde, analiz sonuçlarına göre, psikolojik danışma ilke ve teknikleri dersinin verimliliğine ilişkin psikolojik danışman görüşleri açısından hem MDÖ ($x^2= 16.18; p<.05$), hem PDBÖDBÖ ($x^2= 27.01 ; p<.05$) hem de PDYVYTÖ puanları arasında ($x^2= 34.34 ; p<.05$) istatistiksel açıdan anlamlı bir fark olduğu; bu farkın "verimli" bulan grup lehine istatistiksel olarak anlamlı şekilde farklılaştığı bulunmuştur. ($p<.05$).

PDBÖDBÖ ve PDYVYTÖ toplam puanlarının mesleki doyum yordama düzeyleri çoklu regresyon ile analiz edilmiştir. Elde edilen sonuçlara göre, psikolojik danışmanların psikolojik danışma becerileri ve psikolojik danışma yardımı vermeye yönelik tutum puanları toplamı %20,9 oranında mesleki doyumlarını açıklamaktadır. Psikolojik danışmanların lisans eğitimleri süresince aldıkları eğitimin niteliği, psikolojik danışma beceri yeterlilikleri ve psikolojik danışma yardımı vermeye yönelik olumlu tutumları birlikte değerlendirildiğinde mesleki doyumları açısından önemli bir etken olduğu sonucuna varılabilir. Psikolojik danışmanların psikolojik danışma süreci sonunda danışanların gelişim ve değişimine katkılarının farkında olmalarının mesleki doyum sağlayacağı varsayılmaktadır.

Tartışma ve Sonuç

Psikolojik danışmanların bireyle ve grupla psikolojik danışma uygulama derslerinin verimliliğine ilişkin görüşlerine göre mesleki doyum, psikolojik danışma becerileri ve psikolojik danışma yardımı vermeye yönelik tutum düzeyleri arasında anlamlı bir farklılık olup olmadığı incelenmiştir. Elde edilen bulgulara göre, ilgili derslere ilişkin verimlilik görüşleri grupları arasında anlamlı bir farklılık olduğu tespit edilmiştir.

Atıcı ve Çam (2013) yaptıkları çalışmada uygulama derslerinin özellikle teorik bilgilerin uygulanmasında ve okul psikolojik danışma becerilerinin geliştirilmesinde etkili olduğunu belirtmişlerdir. Lüleci'nin (2015) çalışmasında grupla psikolojik danışma eğitimi alan psikolojik danışman adayları, süpervizyon geri bildirim almanın psikolojik danışma becerilerinin ve eksikliklerinin gelişiminde etkili olduğunu ve uygulama sayısının artırılması gerektiğini belirtmişlerdir. Yıldırım (2020), bir süpervizör ile psikolojik danışma seansı yürüten psikolojik ve fiziksel dinleme becerilerinin, bir süpervizör ile herhangi bir seans yapmayanlara göre daha yüksek düzeyde olduğunu belirtmiştir.

Danışman adaylarının süpervizör desteği aşmaları ve mesleğin ilk yıllarında yöneticileri tarafından takdir edilmesi, yöneticilerinden ve danışanlarından olumlu geri bildirim almaları gibi çevresel faktörler, psikolojik danışmanların mesleki görev ve sorumluluklarını etik kurallar çerçevesinde yerine getirme yönünde olumlu bir eğilim göstermelerini sağlayabilir. Maslow'un saygı ihtiyacına göre başarı ve karşılıklı saygı bireyin kendine olan güvenini artıracaktır. Psikolojik danışma yardımı vermeye yönelik olumlu davranışsal tutumlara sahip olacakları ve Vroom'un Beklenti Kuramı'na göre derslerin verimliliğine yönelik beklentilerinin karşılanmasının davranışlarının sürekliliğini motive edeceği öngörülmektedir. Larson (1998) da psikolojik danışma sürecinin başarılı sonuçlanmasında psikolojik danışmanların özyeterlik inançlarının etkili olduğunu belirterek bu görüşü desteklemektedir. Danışan için etkili ve verimli bir başarı ile sonuçlanan danışmanlık sürecinin, danışman için de mesleki bir doyum kaynağı olacağı düşünülmektedir.

Ayrıca psikolojik danışmanların mesleki doyum düzeylerinin, psikolojik danışma becerilerinin ve psikolojik danışma yardımı vermeye yönelik tutumlarının psikolojik danışma ilke ve teknikleri dersinin etkililiğine ilişkin görüşlerine göre anlamlı bir farklılık gösterip göstermediği incelenmiştir. Elde edilen bulgulara göre, derse ilişkin verimlilik görüşleri grupları arasında anlamlı bir farklılık olduğu görülmüştür.

Yaka (2011), psikolojik danışman adaylarının beceri eğitimi almadan önceki ve sonraki davranış ve tepkilerini ile bu oturumlardaki etkililiklerini araştırarak psikolojik danışman eğitiminde beceri eğitiminin önemini vurgulamıştır. Sarpdağ (2019), psikolojik danışmanların öz yeterlilikleri ile psikolojik danışma becerileri arasında pozitif yönde anlamlı bir ilişki olduğunu belirtmektedir. Benzer şekilde Ekşi vd. (2015) psikolojik danışman öz yeterlik ve dinleme becerilerinin birlikte mesleki tatmini pozitif yönde ve anlamlı yönde etkilediğini belirtmişlerdir.

Haskan- Avcı, Tuna, Büyükçolpan, Güngör ve Yörükoğlu (2019) yaptıkları çalışmada danışanların bir uzmandan psikolojik yardım almak istediklerinde özgeçmişleri, eğitimleri, uzmanlık ve deneyim alanları açısından kariyer niteliklerine, yaş, cinsiyet ve yaşam görüşleri açısından kişisel özelliklerine dikkat ettikleri sonucuna varmışlardır. Etkili bir psikolojik danışma ilişkisi, psikolojik

danışmanların kendilerine ve yapılanmalarına yönelik duygu ve tutumlarından etkilenir. Danışmanın kendisine yönelik tutumları dışa dönük davranışlarını da etkilemektedir (Egan, 1990).

Psikolojik danışmanların mesleki doyumlarını yordayan faktörler incelendiğinde, psikolojik danışma becerilerinin %18,6 oranında, psikolojik danışma yardımı vermeye yönelik tutumlarının ise %2,3 oranında mesleki doyumlarını yordadığı görülmüştür. Bu bulguya göre, psikolojik danışma ve rehberlik bölümü eğitim programı kapsamında yer alan beceri derslerinin verimliliğinin artırılmasının beceriler konusundaki yeterliliği de artırabileceği söylenebilir. Psikolojik danışmanların öz yeterlik düzeylerinin artmasına bağlı olarak mesleki doyum düzeyleri de artmaktadır. Öz- Soysal, Uz- Baş ve Aysan'ın (2016) çalışmasına göre okul psikolojik danışmanlarının kuramsal ve uygulamalı bilgi, beceri ve donanımlarını yeterli düzeyde görmedikleri ve bu eksikliğin nedeninin süpervizyon eğitimi başta olmak üzere lisans veya lisansüstü eğitim süreçlerindeki eksiklikler olduğu tespit edilmiştir. Karataş-Şahin ve Baltacı'nın (2013) çalışmasında psikolojik danışmanların lisans eğitimlerinin yeterliliğine ilişkin görüşleri araştırılmış ve elde edilen bulgular şu şekilde özetlenmiştir; Okul rehber öğretmenleri aldıkları eğitimle ilgili görüşlerini bildirmişler ve ikisi teorik olarak yeterli olduğunu, üçü uygulamalı derslerin yetersiz olduğunu, üçü ise eğitimin genel olarak yetersiz olduğunu belirtmişlerdir. Yüksel-Şahin (2016), beceri eğitimindeki teorik bilgilerin oturumda etkili bir şekilde kullanılabilmesi için olumlu tutuma sahip olmak gerektiğini belirtmektedir. Mesleki doyum açısından psikolojik danışman adaylarının aldıkları eğitimin kalitesi, psikolojik danışma beceri yeterlilikleri ve psikolojik danışma yardımı vermeye yönelik olumlu tutumları birlikte değerlendirildiğinde önemli faktörler olarak öne çıkmaktadır.

Okul psikolojik danışmanlarının öğrencilerin sorunlarını ele alma, önleme ve müdahale etmede güçlükler yaşadıkları görülmektedir (Öz- Soysal vd., 2016). Çağdaş eğitim ve öğretim çalışmalarının merkezinde olan öğrencilerle psikolojik danışmanlar arasında verimli ilişki kurabilmek için öğrencilerin beklentilerini bilmek gerekmektedir. Öğrencilerin gereksinimlerine karşılık bulmalarına, başarılarını arttırmaya ve sağlıklı kişilik gelişimlerine yardımcı olmaktadır. Öğrencilere katkı sağlanmadığı durumlarda eğitim-öğretim çalışmalarında verimi azalmaktadır (Savaş, 2006). Kınalı (2000), rehber öğretmenlere mesleki gelişim olanakları sağlandığında ve psikolojik danışmanlar kendilerini bu gelişime adapte edebildiklerinde işlerini isteyerek yapacaklarını ve mesleki doyum düzeylerinin artacağını belirtmektedir.

Öneriler

Araştırma sonucunda, literatüre katkı sağlamak amacıyla, psikolojik danışma yardımı vermeye yönelik tutum, mesleki doyumunu etkileyen bireysel ve çevresel faktörler ile çeşitli demografik bilgileri bir arada değerlendiren kapsamlı çalışmaların yapılması önerilebilir. Mesleki doygunluğun yüksek düzeyde olması göz önüne alındığında, lisans programlarında psikolojik danışma becerilerine yönelik eğitimin niteliğinin artırılmasına yönelik çalışmaların yapılması önemli görülmektedir.



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Examining the Web Pedagogical Content Knowledge of Faculty of Sports Sciences Students and Their Attitudes towards Distance Education

Hayati Arslan, Asst. Prof., Corresponding Author

Erciyes University, Türkiye

hayatiarslan23@gmail.com

Orcid ID: 0000-0002-5448-2653

Mustafa Soner Yüce, PhD student

Erciyes University, Türkiye

soneryuce0010@hotmail.com

Orcid ID: 0000-0001-7896-6073

Mehmet Behzat Turan, Assoc. Prof.

Erciyes University, Türkiye

behzatturan@erciyes.edu.tr

Orcid ID: 0000-0002-5332-803X

Article Type: Research Article

Received Date: 07.04.2023

Accepted Date: 08.10.2023

Published Date: 30.10.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: 10.29329/tayjournal.2023.610.04

Citation: Arslan H., Yüce, M. S., & Turan, M. B. (2023). Examining the Web pedagogical content knowledge of faculty of sports sciences students and their attitudes towards distance education. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 766-790.

Abstract

The aim of the research is to investigate the web pedagogical content knowledge and attitudes towards distance education of students enrolled in the Faculty of Sports Sciences. A total of 355 randomly selected students from Erciyes University's Faculty of Sports Sciences participated in the study. The research utilized the Distance Education Attitude Scale, Web Pedagogical Content Knowledge Scale, and a personal information form prepared by the researcher. Independent t-test statistics were used to compare the scores obtained from the scales in terms of gender, internet access status, computer availability, previous experience with distance education, and taking courses in information technologies. One-way analysis of variance (LSD) test statistics were used for comparisons based on class, overall weighted grade point average, place of residence, and the perception of the university's distance education facilities. As a result, no statistically significant differences were found based on the gender variable, while significant differences were identified with respect to class, overall weighted grade point average, place of residence, internet access status, computer availability, previous experience with distance education, and the perception of the university's distance education facilities. Furthermore, when examining the results of correlation and regression, a significant negative relationship was observed between web pedagogical content knowledge and the limitations of distance education, explaining 14.1% of the total variance. Students with an adequate level of web content knowledge tend to have more positive attitudes toward distance education. With their sufficient web content knowledge, students can be more effective in focusing on online courses, which can potentially contribute to their academic success.

Keywords: Web pedagogical content, distance education, sports.

Introduction

COVID-19, initially emerged in December in the city of Wuhan, Hubei Province, China, was officially identified on January 13, 2020, through research conducted on a group of individuals displaying symptoms of respiratory distress, including fever, cough, and shortness of breath (Til, 2020). The pandemic is defined as a rapidly spreading epidemic disease, necessitating essential measures to combat the virus and prevent its transmission, such as hygiene regulations, mask usage, and social isolation (Yılmaz, 2020).

In Türkiye, a series of measures were taken to fight against this disease. These measures included curfews, travel restrictions, quarantine procedures, and restrictions on educational activities in schools (Yılmaz, 2020). Schools were initially temporarily closed on March 16, 2020, followed by a nationwide transition to distance education (Ministry of National Education [MoNE], 2020a). The Ministry of National Education announced the initiation of remedial education through the National Education Information Network [EBA] on the internet and the Turkish Radio and Television Corporation [TRT] on television by making changes to the weekly lesson plans (MoNE, 2020b). Over twenty million students and more than a million teachers in Türkiye transitioned to distance education. During this period, educators attempted to ensure the continuity of education through online platforms, although they had not been adequately trained in distance education methods (Karip, 2020).

Web pedagogical content knowledge, a component of web-based education, encompasses the integration of instructional content with web-based resources and pedagogical principles (Lee & Tsai, 2010). Educators need to understand both the content and how to effectively integrate web resources into their teaching. Adequate pedagogical knowledge is essential for utilizing technology effectively in education. Individuals who lack the necessary pedagogical knowledge may struggle to harness the potential of technology in their teaching (Angeli & Valanides, 2009).

In Türkiye, web-based distance education is primarily implemented through the Distance Education Application and Research Centers [UZEM] of various universities, including Anadolu University, Istanbul University, and Atatürk University. However, the rapid transition to emergency distance education, which required unique adaptations, was crucial for the continuity of education during the COVID-19 pandemic. Emergency structured distance education involves shifting to online instruction during crises or emergencies, with the potential to revert to traditional face-to-face teaching once the crisis subsides (Hodges et al., 2020).

The effectiveness of remote learning is influenced by various factors, including access to technological tools, students' learning environments, the support provided by families, pandemic-related stress and anxiety levels, and other variables (TEDMEM, 2021). Comparing online education to in-person learning is a complex endeavor due to multiple reasons, including the necessity to consider different media as equal methods of knowledge delivery and the impact of various factors on learning outcomes (Hodges et al., 2020).

The transition to remote education during the COVID-19 pandemic posed various challenges. While students in urban areas generally had better access to online programs, those in rural areas often faced connectivity issues. Moreover, students' lack of knowledge about using computers, tablets, phones, and other communication devices might lead to difficulties in accessing remote education activities. Additionally, students with insufficient web pedagogical content knowledge might struggle to navigate online interfaces, potentially leading to negative attitudes towards distance education.

This study aims to determine the levels of web pedagogical content knowledge and the thought levels regarding distance education among physical education and sports teacher candidates and investigate the relationship between these two factors."

Method

Research Model

This study adopts a relational survey model. This survey model can be defined as one that aims to determine the existence and/or degree of mutual variation between two or more variables (Karasar, 2007). Given that this research is intended to conduct a situational analysis of the relationship between the web pedagogical content knowledge and attitudes towards distance education of students enrolled in the Faculty of Sports Sciences at Erciyes University, it carries a descriptive nature.

Research Group

The research will be conducted through a study group. The study group consists of 2nd, 3rd, and 4th-year students studying in various departments of the Faculty of Sports Sciences, selected using a random method.

Table 1. *Socio-demographic characteristics of participants*

	Variable	N	%
Gender	Female	129	36,3
	Male	226	63,7
Class	2	58	16,3
	3	160	45,1
	4	137	38,6
General Weighted Grade Point Average (GPA)	2.01-2.50	46	13,0
	2.51-3.00	177	49,9
	3.01-3.50	114	32,1
	3.51-4.00	18	5,1
Place of Residence	Village	14	3,9
	District	32	9,0
	Province	82	23,1
	Metropolitan	227	63,9
Internet Accessibility Status	Yes	342	96,3
	No	13	3,7
Computer Availability	Yes	294	82,8
	No	61	17,2
Participation in Information Technology Courses	Yes	320	90,1
	No	35	9,9
Previous Experience with Distance Education	Yes	316	89,0
	No	39	11,0
Perceptions of Your University's Distance Education Facilities	Very Inadequate	12	3,4
	Inadequate	125	35,2
	Adequate	186	52,4
	Very Adequate	32	9,0

Data Collection Tools

Informed consent forms were obtained from the participants before the administration of the measurement tools. During the administration, researchers provided necessary explanations to the participants over an extended period, without rushing, to create an assessment process that is sufficiently comprehensive for the participants. Moreover, conducive conditions were provided for the participants to comfortably fill out the forms. The data collection instruments used in the study were configured as the Web Pedagogical Content Knowledge Scale, the Distance Education Attitude Scale, and a Socio-Demographic Information Form.

Socio-Demographic Information Form

When creating the socio-demographic information form for the study, a pool of characteristics to be examined in the students was established by researching existing web pedagogical content knowledge and attitudes toward distance education scales in the literature. Subsequently, feedback was obtained from statistical experts to create the socio-demographic information form. This socio-demographic information form includes nine questions concerning participants' gender, class, general weighted grade point average, place of residence, internet accessibility status, computer availability, participation in information technology courses, prior experience with distance education, and their perceptions of their university's distance education facilities.

Distance Education Attitude Scale

The Distance Education Attitude Scale [UETÖ], developed by Ağır et al., (2008), consists of twenty-one items. The items in the scale are rated on a five-point Likert scale (1- Strongly Disagree, 2-

Disagree, 3- Undecided, 4- Agree, 5- Strongly Agree). In the UETÖ, a total of seven items are reverse-scored, and these items also constitute the sub-dimension of "Limitations of Distance Education". The minimum and maximum scores that can be obtained for the UETÖ's sub-dimensions and the entire scale are as follows: For the sub-dimension "Advantages of Distance Education," the scores range from 14 to 70, for "Limitations of Distance Education," they range from 7 to 35, and for the entire scale, they range from 21 to 105. A higher score on the UETÖ indicates a more positive attitude toward distance education, while a lower score reflects the opposite. The scale's reliability was calculated as a test-retest reliability of 0.799 and a Cronbach's Alpha reliability coefficient of 0.835.

Web Pedagogical Content Knowledge Scale

The scale was developed by Lee, Tsai, and Chang (2008) and adapted to Turkish by Horzum (2011). The scale was designed using a 5-point Likert scale. The participation levels are rated as 1, 2, 3, 4, 5. The scale comprises a total of 30 items and is composed of five factors. The factors are General Web, Communicative Web, Pedagogical Web, Web Pedagogical Content, and Attitude Toward Web-Based Instruction. The internal consistency coefficient of the scale is reported as 0.94. For this study, the internal consistency coefficient of the scale was calculated as 0.98.

Analysis of Data

Personal information of the participants, inventory total scores, and factor scores are provided in frequency (f) and percentage (%) values. The Kolmogorov-Smirnov test and skewness-kurtosis values were examined to determine the distribution of scores from the scales. The results indicated that the data distribution was within the +/-1 range, which is considered normal without extreme deviations. Therefore, parametric test statistics were used for comparing the data. Independent t-tests were used for binary comparisons of scores from the scales, while one-way analysis of variance (ANOVA) was used for comparing three or more variables. In cases where significant differences were detected in sub-dimensions because of one-way ANOVA, the LSD test statistic, which is used for pairwise comparisons with homogenous distribution and unequal group sizes, was used. Pearson's product-moment correlation analysis (r) was used to reveal the relationship between the scores obtained from the scales, and multiple regression analysis (β) was applied to determine if the scores predicted each other.

Ethical Approvals for the Research

In this study, all rules specified under the "Higher Education Institutions' Scientific Research and Publication Ethics Directive" have been adhered to. None of the actions listed under the second section of the directive titled "Actions Contrary to Scientific Research and Publication Ethics" were carried out.

Ethics Committee Permission Information:

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Erciyes University Social and Humanities Sciences Ethics Committee

Date of ethical review decision= 27.04.2021

Application number= 233

Findings

Table 2. Descriptive statistics of participants' scores on web pedagogical content knowledge and attitudes toward distance education scales

Scale	N	Min.	Max.	X±SD	Skewness	Kurtosis	Kolmogorov-Smirnov
General Web	355	3,00	5,00	4,32±0,54	-,575	-,766	,000
Communicative Web	355	3,00	5,00	4,41±0,50	-,718	-,314	,000
Pedagogical Web	355	2,71	5,00	4,49±0,54	-,891	-,160	,000
Web Pedagogical Content	355	2,40	5,00	4,40±0,55	-,738	-,068	,000
Attitude Toward Web-Based Instruction	355	3,00	5,00	4,43±0,61	-,688	-,867	,000
Total Web Pedagogical	355	3,18	5,00	4,41±0,46	-,684	-,648	,000
Advantages of Distance Education	355	1,14	4,43	2,85±0,60	,150	-,004	,145
Limitations of Distance Education	355	1,00	4,71	2,53±0,78	,302	-,381	,000

When Table 2 is examined, it is determined that the sub-dimensions of web pedagogical content knowledge and attitudes towards distance education of students in the Faculty of Sports Sciences are as follows: the general web dimension is 4.32 ± 0.54 , the communicative web dimension is 4.41 ± 0.50 , the pedagogical web dimension is 4.49 ± 0.54 , the web pedagogical content dimension is 4.40 ± 0.55 , the attitude towards web-based instruction dimension is 4.43 ± 0.61 , the total web pedagogical dimension is 4.41 ± 0.46 , the advantages of distance education dimension is 2.85 ± 0.60 , and the limitations of distance education dimension is 2.53 ± 0.78 .

Table 3. Comparison of web pedagogical content knowledge and attitude towards distance education scale scores according to participants' gender

Scale	Gender	N	X±SD	t	p
General Web	Female	129	4,33±0,54	,068	,946
	Male	226	4,32±0,54		
Communicative Web	Female	129	4,36±0,52	-1,440	,151
	Male	226	4,44±0,49		
Pedagogical Web	Female	129	4,52±0,51	1,021	,308
	Male	226	4,46±0,56		
Web Pedagogical Content	Female	129	4,36±0,57	-1,070	,285
	Male	226	4,42±0,53		
Attitude Toward Web-Based Instruction	Female	129	4,42±0,62	-,220	,826
	Male	226	4,44±0,60		
Total Web Pedagogical	Female	129	4,40±0,46	-,379	,705
	Male	226	4,42±0,46		
Advantages of Distance Education	Female	129	2,80±0,61	-1,356	,176
	Male	226	2,89±0,60		
Limitations of Distance Education	Female	129	2,47±0,84	-1,021	,308
	Male	226	2,56±0,74		

When Table 3 is examined, no significant difference was found in the sub-dimensions of web pedagogical content knowledge and attitude towards distance education among the students of the Faculty of Sports Sciences based on the gender variable ($p>0.05$).

Table 4. Comparison of web pedagogical content knowledge and attitude toward distance education scale scores by participants' classifications

Scale	Class	N	X±SD	f	p	LSD
General Web	2 ^a	58	4,39±0,55	5,795	,003	a>b b<c
	3 ^b	160	4,22±0,60			
	4 ^c	137	4,42±0,44			
Communicative Web	2 ^a	58	4,51±0,46	4,546	,011	a>b b<c
	3 ^b	160	4,32±0,55			
	4 ^c	137	4,46±0,44			
Pedagogical Web	2 ^a	58	4,51±0,58	2,502	,083	-
	3 ^b	160	4,42±0,57			
	4 ^c	137	4,56±0,47			
Web Pedagogical Content	2 ^a	58	4,42±0,51	3,102	,046	b<c
	3 ^b	160	4,32±0,62			
	4 ^c	137	4,48±0,44			
Attitude Toward Web-Based Instruction	2 ^a	58	4,45±0,53	1,309	,272	-
	3 ^b	160	4,38±0,64			
	4 ^c	137	4,49±0,59			
Total Web Pedagogical	2 ^a	58	4,46±0,45	4,456	,012	b<c
	3 ^b	160	4,33±0,50			
	4 ^c	137	4,48±0,39			
Advantages of Distance Education	2 ^a	58	2,67±0,53	4,503	,012	a<b
	3 ^b	160	2,94±0,57			
	4 ^c	137	2,83±0,65			
Limitations of Distance Education	2 ^a	58	2,36±0,64	4,981	,007	a<b b>c
	3 ^b	160	2,67±0,77			
	4 ^c	137	2,44±0,82			

When Table 4 is examined, it is observed that among the students of the Faculty of Sports Sciences, significant differences were found in the sub-dimensions of general web, communicative web, web pedagogical content, web pedagogical total, advantages of distance education, and limitations of distance education based on their class levels ($p<0.05$); however, no significant differences were found in the sub-dimensions of pedagogical web and attitude towards web-based instruction ($p>0.05$).

Table 5. Comparison of web pedagogical content knowledge and attitude toward distance education scale scores by participants' GPA variable

Scale	GPA	N	X±SD	f	p	LSD
General Web	2.01-2.50 ^a	46	4,16±0,49	2,516	,058	-
	2.51-3.00 ^b	177	4,39±0,51			
	3.01-3.50 ^c	114	4,29±0,58			
	3.51-4.00 ^d	18	4,37±0,59			
Communicative Web	2.01-2.50 ^a	46	4,37±0,41	,382	,766	-
	2.51-3.00 ^b	177	4,39±0,52			
	3.01-3.50 ^c	114	4,45±0,51			
	3.51-4.00 ^d	18	4,41±0,53			
Pedagogical Web	2.01-2.50 ^a	46	4,25±0,61	3,953	,009	a<b a<c a<d
	2.51-3.00 ^b	177	4,51±0,52			
	3.01-3.50 ^c	114	4,51±0,53			
	3.51-4.00 ^d	18	4,68±0,38			
Web Pedagogical Content	2.01-2.50 ^a	46	4,25±0,44	1,805	,146	-
	2.51-3.00 ^b	177	4,45±0,56			
	3.01-3.50 ^c	114	4,37±0,55			
	3.51-4.00 ^d	18	4,41±0,54			
Attitude Toward Web-Based Instruction	2.01-2.50 ^a	46	4,28±0,60	1,344	,260	-
	2.51-3.00 ^b	177	4,44±0,62			
	3.01-3.50 ^c	114	4,49±0,61			
	3.51-4.00 ^d	18	4,43±0,44			
Total Web Pedagogical	2.01-2.50 ^a	46	4,26±0,41	1,968	,118	-
	2.51-3.00 ^b	177	4,44±0,47			
	3.01-3.50 ^c	114	4,42±0,45			
	3.51-4.00 ^d	18	4,46±0,44			
Advantages of Distance Education	2.01-2.50 ^a	46	2,93±0,74	2,616	,051	b<c
	2.51-3.00 ^b	177	2,76±0,58			
	3.01-3.50 ^c	114	2,95±0,58			
	3.51-4.00 ^d	18	2,90±0,46			
Limitations of Distance Education	2.01-2.50 ^a	46	2,66±0,85	1,089	,354	-
	2.51-3.00 ^b	177	2,48±0,78			
	3.01-3.50 ^c	114	2,58±0,78			
	3.51-4.00 ^d	18	2,34±0,47			

When Table 5 is examined, it is found that among the students of the Faculty of Sports Sciences, significant differences were detected in the sub-dimensions of pedagogical web and advantages of distance education based on their GPAs ($p < 0.05$); however, no significant differences were observed in the sub-dimensions of general web, communicative web, web pedagogical content, attitude towards web-based instruction, web pedagogical total, and limitations of distance education ($p > 0.05$).

Table 6. Comparison of web pedagogical content knowledge and attitude towards distance education scale scores according to participants' place of residence variable

Scale	Place of Residence	N	X±SD	f	p	LSD
General Web	Village ^a	14	4,02±0,48	2,272	,080	a<d
	District ^b	32	4,22±0,58			
	Province ^c	82	4,32±0,50			
	Metropolitan ^d	227	4,36±0,55			
Communicative Web	Village ^a	14	4,24±0,53	2,842	,038	b<d
	District ^b	32	4,26±0,54			
	Province ^c	82	4,34±0,47			
	Metropolitan ^d	227	4,46±0,50			
Pedagogical Web	Village ^a	14	4,28±0,59	2,209	,087	b<d
	District ^b	32	4,31±0,56			
	Province ^c	82	4,48±0,50			
	Metropolitan ^d	227	4,52±0,54			
Web Pedagogical Content	Village ^a	14	4,36±0,54	1,026	,381	-
	District ^b	32	4,27±0,66			
	Province ^c	82	4,36±0,51			
	Metropolitan ^d	227	4,43±0,54			
Attitude Toward Web-Based Instruction	Village ^a	14	4,11±0,84	2,391	,068	a<d
	District ^b	32	4,30±0,62			
	Province ^c	82	4,41±0,62			
	Metropolitan ^d	227	4,48±0,58			
Total Web Pedagogical	Village ^a	14	4,20±0,51	2,734	,044	a<d b<d
	District ^b	32	4,27±0,52			
	Province ^c	82	4,38±0,42			
	Metropolitan ^d	227	4,45±0,45			
Advantages of Distance Education	Village ^a	14	2,80±0,61	,725	,538	-
	District ^b	32	2,94±0,71			
	Province ^c	82	2,91±0,63			
	Metropolitan ^d	227	2,82±0,58			
Limitations of Distance Education	Village ^a	14	2,66±0,75	1,080	,357	-
	District ^b	32	2,67±0,95			
	Province ^c	82	2,60±0,80			
	Metropolitan ^d	227	2,48±0,74			

When Table 6 is examined, it is found that among the students of the Faculty of Sports Sciences, significant differences were detected in the sub-dimensions of general web, communicative web, pedagogical web, attitude towards web-based instruction, and web pedagogical total based on their place of residence ($p < 0.05$); however, no significant differences were observed in the sub-dimensions of web pedagogical content, advantages of distance education, and limitations of distance education ($p > 0.05$).

Table 7. Comparison of web pedagogical content knowledge and attitude towards distance education scale scores according to participants' internet access status

Scale	Internet Accessibility Status	N	X±SD	t	p
General Web	Yes	342	4,34±0,54	1,989	,068
	No	13	4,03±0,54		
Communicative Web	Yes	342	4,42±0,50	2,587	,022
	No	13	4,10±0,43		
Pedagogical Web	Yes	342	4,51±0,52	2,892	,013
	No	13	3,90±0,75		
Web Pedagogical Content	Yes	342	4,41±0,55	1,937	,074
	No	13	4,15±0,46		
Attitude Toward Web-Based Instruction	Yes	342	4,45±0,60	1,852	,088
	No	13	4,06±0,75		
Total Web Pedagogical	Yes	342	4,42±0,45	2,447	,030
	No	13	4,05±0,55		
Advantages of Distance Education	Yes	342	2,86±0,60	1,368	,195
	No	13	2,63±0,61		
Limitations of Distance Education	Yes	342	2,51±0,77	-2,458	,014
	No	13	3,04±0,69		

When Table 7 is examined, it is determined that among the students of the Faculty of Sports Sciences, significant differences were found in the sub-dimensions of communicative web, pedagogical web, web pedagogical total, and limitations of distance education based on their internet access status ($p<0.05$); however, no significant differences were found in the sub-dimensions of general web, web pedagogical content, attitude towards web-based instruction, and advantages of distance education ($p>0.05$).

Table 8. Comparison of web pedagogical content knowledge and attitude towards distance education scale scores according to participants' computer ownership status

Scale	Computer Availability	N	X±SD	t	p
General Web	Yes	294	4,36±0,54	2,975	,004
	No	61	4,15±0,49		
Communicative Web	Yes	294	4,44±0,51	2,732	,007
	No	61	4,25±0,42		
Pedagogical Web	Yes	294	4,54±0,51	4,500	,000
	No	61	4,21±0,58		
Web Pedagogical Content	Yes	294	4,43±0,54	2,219	,027
	No	61	4,26±0,55		
Attitude Toward Web-Based Instruction	Yes	294	4,48±0,60	3,039	,003
	No	61	4,22±0,60		
Total Web Pedagogical	Yes	294	4,45±0,45	3,682	,000
	No	61	4,22±0,46		
Advantages of Distance Education	Yes	294	2,87±0,60	1,009	,316
	No	61	2,78±0,61		
Limitations of Distance Education	Yes	294	2,50±0,75	-1,245	,217
	No	61	2,66±0,90		

When Table 8 is examined, it is found that among the students of the Faculty of Sports Sciences, significant differences were detected in the sub-dimensions of general web, communicative web, pedagogical web, web pedagogical content, attitude towards web-based instruction, and web pedagogical total based on their computer ownership status ($p<0.05$); however, no significant differences were observed in the sub-dimensions of advantages of distance education and limitations of distance education ($p>0.05$).

Table 9. Comparison of web pedagogical content knowledge and attitude towards distance education scale scores according to participants' enrollment in information technology courses

Scale	Participation in Information Technology Courses	N	X±SD	t	p
General Web	Yes	320	4,33±0,55	,614	,542
	No	35	4,28±0,45		
Communicative Web	Yes	320	4,41±0,51	,161	,873
	No	35	4,40±0,45		
Pedagogical Web	Yes	320	4,50±0,54	1,287	,205
	No	35	4,37±0,56		
Web Pedagogical Content	Yes	320	4,40±0,55	,616	,541
	No	35	4,34±0,54		
Attitude Toward Web-Based Instruction	Yes	320	4,45±0,60	1,488	,144
	No	35	4,29±0,62		
Total Web Pedagogical	Yes	320	4,42±0,46	1,056	,297
	No	35	4,33±0,44		
Advantages of Distance Education	Yes	320	2,83±0,59	-1,591	,119
	No	35	3,02±0,67		
Limitations of Distance Education	Yes	320	2,47±0,75	-4,013	,000
	No	35	3,07±0,85		

When Table 9 is examined, it is observed that among the students of the Faculty of Sports Sciences, a significant difference was found in the sub-dimension of limitations of distance education based on their enrollment in information technology courses ($p < 0.05$); however, no significant differences were found in the sub-dimensions of general web, communicative web, pedagogical web, web pedagogical content, attitude towards web-based instruction, web pedagogical total, and advantages of distance education ($p > 0.05$).

Table 10. Comparison of web pedagogical content knowledge and attitude towards distance education scale scores according to participants' prior experience with distance education

Scale	Previous Experience with Distance Education	N	X±SD	t	p
General Web	Yes	316	4,35±0,53	2,574	,010
	No	39	4,12±0,55		
Communicative Web	Yes	316	4,44±0,51	3,884	,000
	No	39	4,17±0,38		
Pedagogical Web	Yes	316	4,51±0,53	2,203	,033
	No	39	4,30±0,56		
Web Pedagogical Content	Yes	316	4,41±0,56	1,755	,085
	No	39	4,28±0,43		
Attitude Toward Web-Based Instruction	Yes	316	4,45±0,61	1,588	,113
	No	39	4,29±0,59		
Total Web Pedagogical	Yes	316	4,43±0,46	2,820	,007
	No	39	4,23±0,41		
Advantages of Distance Education	Yes	316	2,87±0,59	1,716	,093
	No	39	2,68±0,67		
Limitations of Distance Education	Yes	316	2,54±0,77	,905	,370
	No	39	2,41±0,85		

When Table 10 is examined, it is found that among the students of the Faculty of Sports Sciences, significant differences were detected in the sub-dimensions of general web, communicative web, pedagogical web, and web pedagogical total based on their prior experience with distance education ($p < 0.05$); however, no significant differences were observed in the sub-dimensions of web pedagogical

content, attitude towards web-based instruction, advantages of distance education, and limitations of distance education ($p>0.05$).

Table 11. Comparison of web pedagogical content knowledge and attitude towards distance education scale scores according to participants' evaluation of the opportunities provided by their university for distance education

Scale	Perceptions of Your University's Distance Education Facilities	N	X±SD	f	p	LSD
General Web	Very Inadequate ^a	12	4,32±0,55	,864	,460	-
	Inadequate ^b	125	4,26±0,60			
	Adequate ^c	186	4,35±0,53			
	Very Adequate ^d	32	4,39±0,34			
Communicative Web	Very Inadequate ^a	12	4,33±0,46	,331	,803	-
	Inadequate ^b	125	4,38±0,55			
	Adequate ^c	186	4,43±0,47			
	Very Adequate ^d	32	4,40±0,48			
Pedagogical Web	Very Inadequate ^a	12	4,76±0,37	1,789	,149	-
	Inadequate ^b	125	4,44±0,58			
	Adequate ^c	186	4,51±0,53			
	Very Adequate ^d	32	4,41±0,46			
Web Pedagogical Content	Very Inadequate ^a	12	4,35±0,47	1,312	,270	-
	Inadequate ^b	125	4,33±0,66			
	Adequate ^c	186	4,42±0,48			
	Very Adequate ^d	32	4,53±0,40			
Attitude Toward Web-Based Instruction	Very Inadequate ^a	12	4,77±0,38	2,538	,056	-
	Inadequate ^b	125	4,35±0,64			
	Adequate ^c	186	4,48±0,59			
	Very Adequate ^d	32	4,35±0,62			
Total Web Pedagogical	Very Inadequate ^a	12	4,51±0,38	1,071	,361	-
	Inadequate ^b	125	4,35±0,50			
	Adequate ^c	186	4,44±0,44			
	Very Adequate ^d	32	4,42±0,36			
Advantages of Distance Education	Very Inadequate ^a	12	2,68±0,62	7,411	,000	a<d
	Inadequate ^b	125	2,69±0,61			b<c
	Adequate ^c	186	2,92±0,57			b<d
	Very Adequate ^d	32	3,16±0,61			c<d
Limitations of Distance Education	Very Inadequate ^a	12	1,85±0,75	8,021	,000	a<b
	Inadequate ^b	125	2,40±0,79			a<c
	Adequate ^c	186	2,58±0,72			a<d
	Very Adequate ^d	32	2,95±0,80			b<d c<d

When Table 11 is examined, it is observed that among the students of the Faculty of Sports Sciences, significant differences were found in the sub-dimensions of advantages of distance education and limitations of distance education based on their evaluation of the opportunities provided by their university for distance education ($p<0.05$); however, no significant differences were found in the sub-dimensions of general web, communicative web, pedagogical web, web pedagogical content, attitude towards web-based instruction, and web pedagogical total ($p>0.05$).

Table 12. Correlation analysis of web pedagogical content knowledge and attitude towards distance education scales

N=355		1	2	3	4	5	6	7
General Web (1)	r	1						
	p							
Communicative Web (2)	r	,627**	1					
	p	,000						
Pedagogical Web (3)	r	,594**	,607**	1				
	p	,000	,000					
Web Pedagogical Content (4)	r	,684**	,608**	,629**	1			
	p	,000	,000	,000				
Attitude Toward Web-Based Instruction (5)	r	,617**	,567**	,599**	,646**	1		
	p	,000	,000	,000	,000			
Total Web Pedagogical (6)	r	,844**	,809**	,822**	,857**	,834**	1	
	p	,000	,000	,000	,000	,000		
Advantages of Distance Education (7)	r	,046	,087	,006	,012	-,039	,024	1
	p	,387	,100	,908	,820	,460	,652	
Limitations of Distance Education (8)	r	-,249**	-,184**	-,276**	-,280**	-,307**	-,314**	,495**
	p	,000	,000	,000	,000	,000	,000	,000

While no significant relationship was found between the overall web size and the advantages of online education ($r=0.046$, $p=0.387$), a low-level negative significant relationship was observed between the limitations of online education and overall web size ($r=-0.249$, $p=0.000$). Similarly, there was no significant relationship between the communicative web size and the advantages of online education ($r=0.087$, $p=0.100$), but a low-level negative significant relationship was detected between the limitations of online education and the communicative web size ($r=-0.184$, $p=0.000$). The pedagogical web size showed no significant relationship with the advantages of online education ($r=0.006$, $p=0.908$), while a low-level negative significant relationship was found between the limitations of online education and the pedagogical web size ($r=-0.276$, $p=0.000$). There was no significant relationship between the web pedagogical content size and the advantages of online education ($r=0.012$, $p=0.820$), but a low-level negative significant relationship was identified between the limitations of online education and the web pedagogical content size ($r=-0.280$, $p=0.000$). The attitude dimension toward web-based learning had no significant relationship with the advantages of online education ($r=-0.039$, $p=0.460$), while a low-level negative significant relationship was observed between the limitations of online education and the attitude toward web-based learning ($r=-0.307$, $p=0.000$). Furthermore, no significant relationship was found between the web pedagogical total size and the advantages of online education ($r=0.024$, $p=0.652$), but a low-level negative significant relationship was identified between the limitations of online education and the web pedagogical total size ($r=-0.314$, $p=0.000$).

Table 13. Regression table for predicting attitude towards distance education values by web pedagogical content knowledge

Scale		β	t	P	R	R ²	F	p
Web Pedagogical Content Knowledge Total	Advantages of Distance Education	,238	4,183	,000	,376	,141	28,925	,000
	Limitations of Distance Education	-,432	-7,590	,000				

Table 13 presents a model that demonstrates a significant relationship between web pedagogical content knowledge and the attitude towards online education ($r=0.376$, $r^2=0.141$; $p<0.05$).

When examining the results of the t-test for the significance of the regression coefficient, it can be observed that web pedagogical content knowledge predicts the level of advantages ($t=4.183$, $p=0.000$) and limitations ($t=-7.590$, $p=0.000$) of online education, explaining 14.1% of the total variance ($f=28.925$, $p<0.05$).

Discussion and Conclusion

In the conducted study, it was determined that there was no statistically significant difference between the gender of students at the Faculty of Sports Sciences in terms of their web pedagogical content knowledge and their attitudes towards distance education. A review of the literature revealed parallel findings to our study. Arslan and Korkmaz (2019) stated that there was no difference in attitudes towards distance education based on gender. Similarly, Ağır (2007) noted that there was no significant difference in the attitudes of primary school teachers working in private and state schools towards distance education in terms of gender. Yavuz (2016) conducted a similar study and found no significant difference in attitudes towards distance education scores based on the gender variable. However, contrary to the results of our study, findings in the literature indicated otherwise. Gömleksiz and Fidan (2011), Kaya et al., (2011), and Kavanoz et al., (2015) concluded in their studies that there was a significant difference in web pedagogical content knowledge between male and female teacher candidates. Yenilmez et al., (2017) and Bahar (2014) found a significant difference in attitudes towards distance education based on the gender variable in their research. It is suggested that the lack of a significant difference between students' attitudes towards distance education and web pedagogical content knowledge based on their gender may be attributed to the fact that theoretical and practical classes were conducted without gender discrimination both before and after the pandemic.

In our study, significant relationships were identified among students at the Faculty of Sports Sciences in terms of their classes for the sub-dimensions of general web, communicative web, web pedagogical content, total web pedagogical, advantages of distance education, and limitations of distance education, while no significant relationship was found for the pedagogical web and attitude towards web-based instruction sub-dimensions. Ergenekon (2021) found that students' attitudes towards distance education varied significantly based on their class variable in a study. Likewise, Ekici et al., (2015) determined in their research that students' web pedagogical content knowledge differed based on the class variable. However, Kuzu and Erten (2011) and Kavanoz et al., (2015) did not find a statistically significant difference in web pedagogical content knowledge based on the class variable in their studies. When the data from our study is examined, it is generally observed that 4th-year students create a significant difference in web pedagogical content knowledge and attitudes towards distance education compared to other classes. The reason for this might be that higher-level students are more experienced in using computers and the internet for the presentation of course materials and completion of assignments, leading to an increase in their general web knowledge. As a result, it is thought that they can access online education courses more easily.

In our study, significant differences were observed in the sub-dimensions of pedagogical web and the advantages of distance education based on the students' overall weighted grade point averages, while no significant relationships were found for the sub-dimensions of general web, communicative web, web pedagogical content, attitude towards web-based instruction, total web pedagogical, and the limitations of distance education. When considering the students' overall weighted grade point average, it was found that students with higher averages had higher levels of pedagogical knowledge and also

had a positive emotional disposition towards distance education. It is believed that academically successful students actively participate in web-related courses to enhance their computer and web-related knowledge, resulting in a deeper understanding of web content. Students with adequate web content knowledge are also expected to have a positive attitude towards distance education, and it is believed that the results obtained are attributed to this factor.

Upon examination of our research, significant relationships were found in the sub-dimensions of general web, communicative web, pedagogical web, attitude toward web-based instruction, and total web pedagogical based on the location of residence for students in the Faculty of Sports Sciences, while no significant relationships were identified for the sub-dimensions of web pedagogical content, the advantages of distance education, and the limitations of distance education. In a study conducted by Ergenekon (2021), it was determined that university students studying in metropolitan areas had significantly different levels of web pedagogical knowledge compared to those studying in other cities. Consistent with our results, other studies have concluded that the place of residence does not have a significant effect on attitudes toward distance education (Kurnaz et al., 2020; Yıldırım, 2021). Upon analyzing the results, it was observed that students living in metropolitan areas had higher levels of web pedagogical content knowledge compared to students in other locations. Most educational institutions at the primary and secondary school levels in metropolitan areas have computer laboratories. As a result, students studying in these schools tend to have higher levels of web content knowledge. It is believed that the positive impact of quality basic education received in the past has contributed to the students' high levels of web pedagogical content knowledge. Additionally, the rapid spread of the internet and technology has made it possible for people in rural areas to access the internet quickly and smoothly, which may explain the lack of significant differences in attitudes toward distance education based on the place of residence.

In our study, significant relationships were found in the sub-dimensions of communicative web, pedagogical web, total web pedagogical, and the limitations of distance education based on the students' internet access status in the Faculty of Sports Sciences. However, no significant differences were observed in the sub-dimensions of general web, web pedagogical content, attitude toward web-based instruction, and the advantages of distance education. Barış (2015) noted in his study on university students' attitudes toward distance education that the average attitude scores of the participating students differed based on the variable "continuous internet access." Similarly, in a survey conducted by Akgün (2013) with 214 teacher candidates, it was found that the scores for web pedagogical content knowledge differed between those who used the internet for several hours a day and those who used it for a few hours a week or month. Upon analyzing our data, it was evident that students with internet access had higher levels of web pedagogical knowledge compared to those without internet access, and this difference was statistically significant. Additionally, it was determined that students without internet access had negative attitudes toward distance education. It is believed that internet access is a significant variable that influences the level of web pedagogical content knowledge and attitudes toward distance education.

In your study, significant relationships were found in the sub-dimensions of general web, communicative web, pedagogical web, web pedagogical content, and attitude toward web-based instruction based on the students' computer ownership status in the Faculty of Sports Sciences. However, no significant relationships were observed in the sub-dimensions of the advantages and

limitations of distance education. Kirali and Alıcı (2016) found in their research that students who had computers had more positive attitudes toward distance education compared to students who did not have access to computers. Similarly, Ateş and Altun (2008) found that students' computer usage experiences and their perceived computer skills had a positive impact on their attitudes toward distance education. Upon analyzing your data, it was evident that students with computer access had higher levels of web pedagogical knowledge compared to those without computers, and this difference was statistically significant. On the other hand, computer ownership status did not lead to significant differences in students' attitudes toward distance education. This might be attributed to the fact that all students had smartphones, and they were able to access distance education courses through their phones, making computer ownership less critical for their distance education experiences.

In your study, you found a significant relationship between students' participation in information technology courses and the limitations of distance education. This means that students who had taken information technology courses had a more positive attitude toward distance education and were less likely to perceive limitations. Türker and Dündar (2020) emphasized the importance of adequate hardware in ensuring a smooth experience in distance education. In line with their findings, your results suggest that students who had not taken information technology courses might struggle to access and engage with distance education, leading to negative perceptions about it. This highlights the role of information technology courses in preparing students for effective participation in distance education, as these courses likely enhance their technological skills and familiarity with web-based content and tools.

Your study indicates that students who had previously experienced distance education had higher levels of web pedagogical knowledge. This finding suggests that prior experience with distance education contributes to a better understanding of web-based teaching and learning methods, as students gain practical experience and skills in online learning environments. Additionally, the results show that prior experience with distance education did not significantly impact students' attitudes toward distance education. This suggests that students who had already gone through distance education were well-prepared and experienced enough not to perceive significant advantages or limitations in a new round of distance education. Their prior exposure to online learning might have made them more comfortable with the format and less prone to concerns or hesitations. In summary, your study highlights the importance of prior experience in distance education in enhancing students' web pedagogical knowledge and readiness for online learning, while also demonstrating that this experience can positively influence their attitudes toward distance education.

When examining the assessment of the opportunities provided by your university for distance education among students in the Faculty of Sports Sciences, significant relationships were observed in the sub-dimensions of the advantages of distance education and the limitations of distance education. However, no significant relationships were found in the sub-dimensions of general web, communicative web, pedagogical web, web pedagogical content, attitude towards web-based learning, and web pedagogical total. A review of the literature did not yield any findings related to this variable. From this perspective, it is believed that this variable will contribute to the literature and make a pioneering contribution to the field.

When the correlation and regression results of our study were examined, a significant negative relationship was found between web pedagogical content knowledge and the limitations of distance

education, explaining 14.1% of the total variance. It can be said that students with a high level of web pedagogical knowledge do not experience any issues with distance education and, therefore, do not feel any limitations. Horzum (2012) revealed in their study that web pedagogical content knowledge significantly increased the web-based teaching scores of teacher candidates. Yazar and Şimşek (2015) found that the average scores for general web pedagogical content knowledge of students taking computer technology courses were significantly higher. Andoh and his colleagues (2020), in their research on the evaluation of distance education for university students, highlighted in student opinions that technological resources should be used more effectively in distance education.

In conclusion, it was determined that students in the Faculty of Sports Sciences have a high level of web pedagogical content knowledge, while their attitudes towards distance education are at a moderate level. When examining the variables in our study, it was found that class, overall weighted grade point average, place of residence, internet access status, computer status, taking computer technology courses, level of using Office programs, previous experience with distance education, evaluation of the university's educational quality, and evaluation of the university's distance education facilities created significant differences, while no significant relationship was found in terms of gender and age variables. Additionally, when analyzing the correlation and regression results, a significant negative relationship was found between web pedagogical content knowledge and the limitations of distance education, explaining 14.1% of the total variance. Students with a sufficient level of web content knowledge have more positive attitudes toward distance education. Students with adequate web content knowledge can be more effective in focusing on online classes. This is believed to contribute to students becoming more academically successful individuals.

Recommendations

Practical training sessions can be provided to students to enhance their skills in effectively using online resources, content creation, and sharing. This can assist students in better understanding distance education materials and learning more effectively. Diversifying distance education materials can increase students' levels of interest. Using different learning resources such as video lectures, forums, and virtual laboratories can make online learning more engaging for students. To ensure that all students have equal access to the distance education system, communal spaces with internet connections and necessary hardware (cafes, libraries, computer labs, etc.) can be made more widely available. It is essential to regularly gather students' opinions about online classes and receive feedback to improve the courses. Feedback based on students' experiences can contribute to the enhancement of course content and teaching methods. Our study was conducted with students in the Faculty of Sports Sciences. Similar studies can be conducted for other departments in different research projects.

References

- Ağır, F. (2007). Özel okullarda ve devlet okullarında çalışan ilköğretim öğretmenlerinin uzaktan eğitime karşı tutumlarının belirlenmesi [The determination of primary school teachers' attitudes towards distance education in private and public schools]. (Tez No. 177901). [Master Thesis, Balıkesir University], National Thesis Center.
- Ağır, F., Gür, H., & Okçu, A. (2008). Uzaktan eğitime karşı tutum ölçeği geliştirmesine yönelik geçerlik ve güvenilirlik çalışması [A validity and reliability study for the development of an attitude scale towards distance education]. *e-Journal of New World Sciences Academy*, 3(2).
- Akgün, F. (2013). Öğretmen adaylarının web pedagojik içerik bilgileri ve öğretmen öz-yeterlik algıları ile ilişkisi [The relationship of teacher candidates with their web pedagogical content knowledge and teacher self-efficacy perceptions]. *Trakya University Journal of Education*, 3(1), 48-58.
- Al-Emran, M., Elsherif, H. M., & Shaalan, K. (2016). Investigating attitudes towards the use of mobile learning in higher education. *Computers in Human Behavior*, 56, 93-102.
- Andoh, R. P. K., Appiah, R., & Agyei, P. M. (2020). Postgraduate distance education in the University of Cape Coast, Ghana: Students' perspectives. *International Review of Research in Open and Distributed Learning*, 21(2), 118-135.
- Angeli, C., & Valanides, N. (2009). Epistemological and methodological issues for the conceptualization, development, and assessment of ICT-TPCK: Advances in technological pedagogical content knowledge (TPCK). *Computers & Education*, 52(1), 154-168.
- Arslan, F., & Korkmaz, Ö. (2019). İlahiyat lisans tamamlama uzaktan eğitim öğrencilerinin etkileşim kaygıları ve uzaktan eğitime dönük tutumları [Interaction concerns and attitudes towards distance education of distance education students completing their Bachelor of Theology degree]. *Journal of Ahmet Kelesoglu Education Faculty*, 1: 12-25.
- Arslan, L. (2021). Ortaokul öğretmenlerinin uzaktan eğitime, teknolojilerine ve yöntemlerine ilişkin görüşleri: Denizli ili örneği [Secondary school teachers' views on distance education, its technologies and methods: Denizli province example]. [Master Thesis, Pamukkale University]. Pamukkale GCRIS Database. <https://gcris.pau.edu.tr/bitstream/11499/38545/1/Levent%20ARSLAN%20Proje.pdf>
- Ateş, A., & Altun, E. (2008). Bilgisayar öğretmeni adaylarının uzaktan eğitime yönelik tutumlarının çeşitli değişkenler açısından incelenmesi [Examining the attitudes of computer teacher candidates towards distance education in terms of various variables]. *Gazi University Journal of Gazi Education Faculty*, 28(3), 125-145.
- Bahar, M. (2014). Üniversite öğrencileri için e-değerlendirme tutum ölçeğinin geliştirilmesi [Development of the e-assessment attitude scale for university students]. *E-International Journal of Educational Research*, 5(2).
- Barış, M. (2015). Üniversite öğrencilerinin uzaktan öğretime yönelik tutumlarının incelenmesi: Namık Kemal Üniversitesi örneği. [Investigation of university students' attitudes towards distance education: the example of Namık Kemal University]. *Sakarya University Journal of Education*, 5(2), 36-46.
- Boz Yuksekdağ, B. (2020). Uzaktan hemşirelik eğitimine ilişkin algılar. [Perceptions regarding distance nursing education. *Educational Technology Theory and Practice*, 10(2), 490-503.
- Büyüköztürk, Ş. (2007). *Sosyal bilimler için veri analizi el kitabı* [Manual of data analysis for social sciences]. (7th ed.), Pegem Akademi.
- Ekici, M., İnel Ekici, D., & Altunışık, S. (2015). Öğretmen adaylarının web pedagojik içerik bilgisi öz-yeterlik algı düzeylerinin çeşitli değişkenler açısından incelenmesi [Examination of pre-service teachers' web pedagogical content knowledge self-efficacy perception levels in terms of various variables]. *Journal of International Social Research*, 8(41), 960-967.
- Ergenekon, B. (2021). Covid-19 salgını sürecinde beden eğitimi ve spor bölümleri öğrencilerinin uzaktan eğitime yönelik tutumlarının incelenmesi Güneydoğu Anadolu Bölgesi örneği [Investigation of the attitude of physical and sports students to distance education during the Covid-19 outbreak Southeast Anatolia Region]. (Tez No. 678091). [Master Thesis, Muş Alparslan University], National Thesis Center.
- Gewin, V. (2020). Five tips for moving to teach online as COVID-19 takes hold. *Nature*, 580(7802), 295-296.
- Gömlüksiz, M. N., & Fidan, E. K. (2011). Pedagojik formasyon programı öğrencilerinin web pedagojik içerik bilgisine ilişkin öz-yeterlik algı düzeyleri [Pedagogical formation program students' self-efficacy perception levels regarding web pedagogical content]. *Electronic Turkish Studies*, 6(4), 593-620.

- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *Educause Review*, 27.
- Horzum, M. B. (2012). The effect of web-based instruction on students' web pedagogical content knowledge, course achievement, and general course satisfaction. *Çukurova University Faculty of Education Journal*, 41(1), 25-40.
- Karasar, N. (2007). *Bilimsel araştırma yöntemi: Kavramlar, ilkeler, teknikler* [Scientific research method: Concepts, principles, techniques]. Nobel .
- Karip, E. (2020). COVID-19: Okulların kapatılması ve sonrası [COVID-19: School closures and aftermath]. Access of date 10. 03. 2023 <https://tedmem.org/vurus/covid-19-okullarin-kapatilmasi-ve-sonrasi>
- Kavanoz, S., Yüksel, H. G., & Özcan, E. (2015). Pre-service teachers' self-efficacy perceptions on web pedagogical content knowledge. *Computers & Education*, 85, 94-101.
- Kaya, Z., Özdemir, T. Y., Emre, G., & Kaya, O. N. (2011, May). Exploring preservice information technology teachers perception of self-efficacy in web-technological pedagogical content knowledge. In *6th International Advanced Technologies Symposium (IATS'11)*, Elâzığ., Türkiye.
- Kazu, İ. Y., & Erten, P. (2011, 5-7 May). Sınıf öğretmeni adaylarının web pedagojik içerik bilgisine ilişkin görüşleri [Views of pre-service classroom teachers on web pedagogical content knowledge]. *10th National Primary Teacher Education Symposium*. Sivas, Türkiye.
- Kıralı, F. N., & Alcı, B. (2016). Üniversite öğrencilerinin uzaktan eğitim algısına ilişkin görüşleri [Opinions of university students on perception of distance education]. *Journal of Istanbul Aydın University*, 30, 55-83.
- Kurnaz, A., Kaynar, H., Şentürk Barışık, C., & Doğrukök, B. (2020). Öğretmenlerin uzaktan eğitime ilişkin görüşleri. [Opinions of teachers about distance education]. *Milli Eğitim Dergisi*, 49(1), 293-322.
- Lau, J., Yang, B., & Dasgupta, R. (2020). Will the coronavirus make online education go viral? Access of date 12. 03. 2022. <https://www.timeshighereducation.com/features/will-coronavirus-make-online-education-go-viral>.
- Lee, M. H., Tsai, C. C., & Chang, C. (2008). Exploring teachers' self-efficacy toward the web pedagogical content knowledge in taiwan. *Annual Meeting of the American Educational Research Association*, 18(2010).
- Lee, M. H., & Tsai, C. C. (2010). Exploring teachers perceived self-efficacy and technological pedagogical content knowledge with respect to educational use of the World Wide Web. *Instructional Science*, 38(1), 1-21.
- Ministry of National Education [MoNE]. (2020a). Bakan Selçuk, Koronavirüs'e karşı eğitim alanında alınan tedbirleri açıkladı [Minister Selçuk announced the measures taken in the field of education against coronavirus]. Access of date 03.04 2020 <https://www.meb.gov.tr/bakan-selcuk-koronaviruse-karsi-egitim-alaninda-alinan-tedbirleri-acikladi/haber/20497/tr>
- Ministry of National Education [MoNE]. (2020b). EBA TV ders yayını [EBA TV lecture broadcast]. Access of date 02.04.2020 <https://www.eba.gov.tr/>
- Newby, T. J., Stepich, D. A., Lehman, J. D., & Russell, J.D. (2006). *Educational technology for teaching and learning. upper saddle river*, Pearson Merrill Prentice Hall
- Tedmem. (2021). *2020 eğitim değerlendirme raporu (Tedmem değerlendirme dizisi 7)* [2020 education evaluation report (Tedmem evaluation series 7)]. Türk Eğitim Derneği.
- Til, A. (2020). Yeni koronavirüs hastalığı hakkında bilinmesi gerekenler [Things to know about the new coronavirus disease]. *Ayrıntı Dergisi*, 8(85), 53-57.
- Türker, A., & DüNDAR, E. (2020). Covid-19 pandemi sürecinde eğitim bilişim ağı (EBA) üzerinden yürütülen uzaktan eğitimlerle ilgili lise öğretmenlerinin görüşleri [Opinions of high school teachers about distance education conducted over the education information network (EBA) during the COVID-19 pandemic process]. *Milli Eğitim Dergisi*, 49(1):
- Yavuz, R. (2016). Eğitim fakültesi 1. sınıf öğrencilerinin uzaktan eğitime ilişkin tutumları ile ingilizce dersine ilişkin tutumları arasındaki ilişki [The relationship between the attitudes of the first year students of the faculty of education towards distance education and their attitudes towards english lesson]. (Tez No. 446048). [Master Thesis, Abant İzzet Baysal University], NationalThesis Center.
- Yazar, T., & Şimşek, Ö. (2015). Öğretmen adaylarının web pedagojik içerik bilgisinin web destekli öğretim bağlamında incelenmesi [Examination of teacher candidates' web pedagogical content knowledge in the context of web-assisted teaching]. *Trakya University Journal of Education Faculty*, 5(2).

- Yenilmez, K., Turğut, M., & M. Z. Balbağ, (2017). Öğretmen adaylarının uzaktan eğitime yönelik tutumlarının bazı değişkenler açısından incelenmesi [Examining the attitudes of teacher candidates towards distance education in terms of some variables]. *Erzincan University Journal of Education Faculty*, 19(2), 91-107.
- Yıldırım, T. (2021). Comparison of pre-service teachers' and vocational school students' perceptions of distance education. *Eurasian Journal of Teacher Education*, 2(2), 101-112.
- Yılmaz, A. (2020). İşte Kovid-19 savaşçısı bilim insanları [Here are the Covid-19 warrior scientists.]. Access of date 13.05.2021 <https://www.milliyet.com.tr/gundem/iste-kovid-19-savascisi-bilim-insanlari-6154577>

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 50%

Author 2: 30%

Author 3: 20%

Conflict Statement

We declare that all the rules in the Directive on Scientific Research and Publication Ethics for Higher Education Institutions have been complied with and that none of the "Actions Contrary to Scientific Research and Publication Ethics" in the second part of the directive have been carried out.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Spor Bilimleri Fakültesi Öğrencilerinin Web Pedagojik İçerik Bilgileri ile Uzaktan Eğitime Yönelik Tutumlarının İncelenmesi

Giriş

Yeni koronavirüs hastalığı, ilk olarak Çin'in Hubei Eyaleti, Vuhan Kenti'nde aralık ayında ortaya çıkmıştır. Virüs, solunum yolunu etkileyip ateş, öksürük ve nefes darlığı belirtileri gösteren bir grup insan üzerinde yapılan araştırmalarla 13 Ocak 2020'de tanımlanmıştır. Pandemi, çok çabuk yayılan salgın hastalık olarak tanımlanmaktadır (Til, 2020). Virüs ile mücadele etmek ve bulaşıcılığı önlemek için temizlik kuralları, maske kullanımı ve sosyal izolasyon gibi insanların birbiri ile temasını en aza indirecek uygulamalar oldukça önemli hale gelmiştir. Türkiye'de bu hastalık ile mücadele kapsamında pek çok önlem alınmıştır. İnsan sağlığını korumak amaçlı yapılan bu uygulamaların başında; sokağa çıkma yasakları, seyahat kısıtlamaları, karantina süreçleri ve okullardaki eğitim öğretim faaliyetleri ile ilgili kısıtlamalar gelmektedir (Yılmaz, 2020).

İlk olarak 16 Mart 2020 tarihinde okullar geçici olarak kapatılmış, daha sonra ülke genelinde uzaktan eğitime geçiş yapılmıştır (Milli Eğitim Bakanlığı [MEB], 2020a). Milli Eğitim Bakanlığı haftalık ders programlarında değişiklikler yaparak, Eğitim Bilişim Ağı [EBA] ile internet üzerinden ve Türkiye Radyo Televizyon Kurumu [TRT] ile televizyondan telafi eğitimi başlatacağını duyurmuştur (MEB, 2020b). Türkiye'de yirmi milyondan fazla öğrenci ile bir milyondan fazla öğretmen uzaktan eğitime geçmiştir. Bu süre içerisinde yeteri kadar hâkim olamadığımız uzaktan eğitim aracılığıyla eğitimin devamlılığı sağlanmaya çalışılmıştır (Karip, 2020).

Türkiye'de web tabanlı uzaktan eğitim, Anadolu Üniversitesi, İstanbul Üniversitesi ve Atatürk Üniversitesi ile bazı üniversitelerin Uzaktan Öğretim Uygulama ve Araştırma Merkezleri [UZEM] aracılığı ile gerçekleştirilen bir yöntem olarak kullanılmaktadır. Uzaktan eğitim alt yapıları pek çok üniversitede bulunup kullanılsa da bu süreç içerisinde "acil uzaktan eğitim" isimli bir yapının oluşumu ve bu sürece özel yeni adaptasyonlara ihtiyaç duyulmuştur. Acil yapılandırılmış uzaktan eğitim, kriz ya

da acil durum ortadan kalktığında eski formatına dönerek yüz yüze ders olarak verilecek olan eğitim ya da öğretim için tamamen uzaktan öğretim çözümlerinin kullanılmasını içerir (Hodges vd., 2020). COVID-19 nedeniyle oluşan krize hızlıca çözüm olarak örgün eğitime göre şekillenmiş üniversiteler, yüz yüze eğitim yerine web tabanlı uzaktan eğitim aracılığıyla dersleri ve programları devam ettirmek için hızla çalışmalara başlamış, acil uzaktan eğitime geçiş yapmışlardır (Gewin, 2020; Lau vd., 2020).

Bununla beraber öğrencilerin bilgisayar, tablet, telefon vb. iletişim araçlarının kullanımındaki bilgi eksikliğinden kaynaklı, gerçekleştirilecek uzaktan eğitim etkinliklerine giriş sağlamada çeşitli problemlerle karşılaşabilecekleri düşünülmektedir. Öğrencilerin yeterli düzeyde web pedagojik içerik bilgisine sahip olmamaları onların çeşitli internet ara yüzlerine geçiş yapmakta zorlanabilecekleri ve bunun sonucunda uzaktan eğitime karşı olumsuz düşüncelere sahip olabilecekleri düşünülmektedir. Bu doğrultuda çalışmada beden eğitimi ve spor öğretmeni adaylarının web pedagojik içerik bilgi düzeyleri ve uzaktan eğitim düşünce düzeylerinin belirlenmesi ve ilişkilerinin incelenmesi amaçlanmıştır.

Yöntem

Bu araştırma ilişkisel tarama modelindedir. Bu tarama modeli, "...iki ve daha çok sayıdaki değişken arasında birlikte değişim varlığını ve/veya derecesini belirlemeyi amaçlayan araştırma modelleri" şeklinde tanımlanabilir (Karasar, 2007). Araştırma; Erciyes Üniversitesi Spor Bilimleri Fakültesinde öğrenim gören öğrencilerin web pedagojik içerik bilgisi ve uzaktan eğitime yönelik tutum ile demografik özellikler arasındaki ilişki konularında durum tespiti yapılacağından dolayı betimsel nitelik taşımaktadır.

Araştırmada katılımcılara yaptırılacak olan ölçekler uygulanmadan önce bilgilendirilmiş onam formu imzalatılmış ve uygulama esnasında araştırmacılar tarafından adayların her birine geniş bir zaman dilimi içerisinde, acele edilmeden, gerekli açıklamalar yapılarak, katılımcılar için yeterli düzeyde değerlendirme süreci yaratılmaya çalışılmıştır. Ayrıca adayların rahat bir ortamda formları doldurmaları için uygun koşullar sağlanmıştır. Araştırmada kullanılan veri toplama araçları; Web Pedagojik İçerik Bilgisi Ölçeği ve Uzaktan Eğitim Tutum Ölçeği ile Sosyo demografik bilgi formu şeklinde ayarlanmıştır. Çalışma grubunu tesadüfî yöntem ile seçilmiş Spor Bilimleri Fakültesinde farklı bölümlerde öğrenim gören 2. 3. ve 4. sınıf öğrencileri oluşturmaktadır.

Bulgular

Çalışmada spor bilimleri fakültesi öğrencilerinin web pedagojik içerik bilgisi ve uzaktan eğitim tutum ölçekleri alt başlıklarından genel web boyutu $4,32\pm 0,54$, iletişimsel web boyutu $4,41\pm 0,50$, pedagojik web boyutu $4,49\pm 0,54$, web pedagojik içerik boyutu $4,40\pm 0,55$, web tabanlı öğretime yönelik tutum boyutu $4,43\pm 0,61$, web pedagojik toplam boyutu $4,41\pm 0,46$, uzaktan eğitimin avantajları boyutu $2,85\pm 0,60$, uzaktan eğitimin sınırlılıkları boyutunun $2,53\pm 0,78$ olduğu tespit edilmiştir. Cinsiyet değişkenine göre web pedagojik içerik bilgisi ve uzaktan eğitim tutum alt boyutlarında anlamlı farklılık tespit edilmemiştir. Sınıflarına göre genel web, iletişimsel web, web pedagojik içerik, web pedagojik toplam, uzaktan eğitimin avantajları, uzaktan eğitimin sınırlılıkları alt boyutlarında anlamlı farklılık tespit edilirken; pedagojik web ve web tabanlı öğretime yönelik tutum alt boyutlarında anlamlı farklılık tespit edilmemiştir. Öğrencilerin GANO'larına göre pedagojik web ve uzaktan eğitimin avantajları alt boyutlarında anlamlı farklılık tespit edilirken; genel web, iletişimsel web, web pedagojik içerik, web tabanlı öğretime yönelik tutum, web pedagojik toplam, uzaktan eğitimin sınırlılıkları alt boyutlarında anlamlı farklılık tespit edilmemiştir. Yaşadıkları yere göre genel web, iletişimsel web, pedagojik web,

web tabanlı öğretime yönelik tutum, web pedagojik toplam alt boyutlarında anlamlı farklılık tespit edilirken; web pedagojik içerik, uzaktan eğitimin avantajları ve uzaktan eğitimin sınırlılıkları alt boyutlarında anlamlı farklılık tespit edilmemiştir.

Öğrencilerin internet erişim durumuna göre iletişimsel web, pedagojik web, web pedagojik toplam ve uzaktan eğitimin sınırlılıkları alt boyutlarında anlamlı farklılık tespit edilirken; genel web, web pedagojik içerik, web tabanlı öğretime yönelik tutum, uzaktan eğitimin avantajları alt boyutlarında anlamlı farklılık tespit edilmemiştir. Bilgisayara sahip olma durumlarına göre genel web, iletişimsel web, pedagojik web, web pedagojik içerik, web tabanlı öğretime yönelik tutum, web pedagojik toplam alt boyutlarında anlamlı farklılık tespit edilirken; uzaktan eğitimin avantajları ve uzaktan eğitimin sınırlılıkları alt boyutlarında anlamlı farklılık tespit edilmemiştir. Bilişim teknolojileri dersi alma durumlarına göre uzaktan eğitimin sınırlılıkları alt boyutunda anlamlı farklılık tespit edilirken; genel web, iletişimsel web, pedagojik web, web pedagojik içerik, web tabanlı öğretime yönelik tutum, web pedagojik toplam ve uzaktan eğitimin avantajları alt boyutlarında anlamlı farklılık tespit edilmemiştir. Öğrencilerin daha önce uzaktan eğitim süreci yaşama durumlarına göre genel web, iletişimsel web, pedagojik web, web pedagojik toplam alt boyutlarında anlamlı farklılık tespit edilirken; web pedagojik içerik, web tabanlı öğretime yönelik tutum, uzaktan eğitimin avantajları ve uzaktan eğitimin sınırlılıkları alt boyutlarında anlamlı farklılık tespit edilmemiştir. Üniversitenin uzaktan eğitim için sağladığı imkânları değerlendirme durumlarına göre; uzaktan eğitimin avantajları ve uzaktan eğitimin sınırlılıkları alt boyutlarında anlamlı farklılık tespit edilirken; genel web, iletişimsel web, pedagojik web, web pedagojik içerik, web tabanlı öğretime yönelik tutum ve web pedagojik toplam alt boyutlarında anlamlı farklılık tespit edilmemiştir.

Web pedagojik içerik bilgisi ile uzaktan eğitime yönelik tutum arasında oluşturulan model anlamlı ilişki sunmuştur ($r=,376$, $r^2 =.141$; $p<0.05$). Regresyon katsayısının anlamlılığına ilişkin t-testi sonuçları incelendiğinde; Web pedagojik içerik bilgisinin uzaktan eğitimin avantajları ($t=4,183$, $p=.000$), ve uzaktan eğitimin sınırlılıkları ($t=-7,590$, $p=.000$) düzeyini yordadığı ve toplam varyansın %14,1'ini açıkladığı görülmüştür ($f = 28,925$, $p<0.05$).

Tartışma ve Sonuç

Gerçekleştirilen çalışmada spor bilimleri fakültesi öğrencilerinin cinsiyetlerine göre web pedagojik içerik bilgileri ve uzaktan eğitime yönelik tutum seviyeleri arasında istatistiksel olarak anlamlı bir fark olmadığı tespit edilmiştir. Elde edilen veriler sonucunda öğrencilerin uzaktan eğitime yönelik tutumları ve web pedagojik içerik bilgileri arasında cinsiyetlerine göre anlamlı bir farklılığın tespit edilmemiş olması öğrencilerin pandemi öncesi ve sonrası hem teorik hem uygulama derslerinin cinsiyet ayrımı yapılmadan yürütülüyor olmasından kaynaklandığı düşünülmektedir. Çalışmamız verileri incelendiğinde web pedagojik içerik bilgisi ve uzaktan eğitime yönelik tutumlarda genel olarak 4. Sınıf öğrencilerinin diğer sınıflara göre anlamlı farklılık oluşturduğu görülmektedir.

Öğrencilerin genel ağırlıklı not ortalaması değişkeni ele alındığında yüksek ortalamaya sahip öğrencilerin pedagojik bilgilerinin yüksek olduğu ve aynı zamanda uzaktan eğitime karşı olumlu duygu durumu içerisinde oldukları belirlenmiştir. Elde edilen sonuçlar incelendiğinde büyükşehirde yaşayan öğrencilerin diğer yerleşimlere göre daha fazla web pedagojik içerik bilgisine sahip olduğu görülmüştür. Büyükşehirlerde ilk ve ortaokul düzeyinde eğitim veren kurumların çoğu bilgisayar laboratuvarına sahiptir. Bunun neticesinde bu okullarda öğrenim gören öğrencilerin web içerik bilgi düzeyleri daha

yüksek olabilmektedir. Elde ettiğimiz verilere göre internet erişim durumuna sahip olan öğrencilerin web pedagojik düzeylerinin olmayanlara göre daha yüksek olduğu ve anlamlı farklılaştığı görülmüştür. Ayrıca bilgisayara sahip olan öğrencilerin web pedagojik düzeylerinin olmayanlara göre daha yüksek olduğu ve anlamlı farklılaştığı görülmüştür. Daha önce uzaktan eğitim süreci yaşayan öğrencilerin web pedagojik bilgilerinin yüksek olduğu belirlenmiştir. Bu durum daha önce uzaktan eğitim alırken web ortamında edindikleri tecrübelerden kaynaklı web pedagojik bilgi düzeylerini yükselttiği şeklinde ifade edilebilir.

Sonuç olarak spor bilimleri fakültesi öğrencilerinin yüksek düzeyde web pedagojik içerik bilgisine sahip oldukları belirlenirken uzaktan eğitime yönelik tutumlarının ise orta düzeyde olduğu tespit edilmiştir. Çalışmamıza değişkenler açısından bakıldığında sınıf, genel ağırlıklı not ortalaması, yaşanan yer, internet erişim durumu, bilgisayar durumu, bilişim teknolojileri dersi alma durumu, Office programları kullanma düzeyi, daha önce uzaktan eğitim yaşama durumu, üniversitenin eğitim kalitesinin değerlendirilmesi, üniversitenin uzaktan eğitim imkânlarının değerlendirilmesi değişkenlerinin anlamlı farklılık oluşturduğu tespit edilirken, cinsiyet ve yaş değişkenlerinde anlamlı ilişki tespit edilememiştir. Aynı zamanda korelasyon ve regresyon sonuçları incelendiğinde web pedagojik içerik bilgisi ile uzaktan eğitimin sınırlılıkları arasında negatif yönlü anlamlı ilişki tespit edilirken, toplam varyansın %14,1'ini açıkladığı görülmüştür. Yeterli düzeyde web içerik bilgisine sahip öğrenciler uzaktan eğitime yönelik daha olumlu düşüncelere sahiptir. Öğrenciler sahip oldukları yeterli düzeydeki web içerik bilgileri sayesinde çevrimiçi derslere odaklanmada daha etkin olabilirler. Bu sayede öğrencilerin akademik anlamda daha başarılı bireyler olabileceği düşünülmektedir.

Öneriler

- Öğrencilere, çevrimiçi kaynakları daha etkili bir şekilde kullanma, içerik üretme ve paylaşma becerilerini geliştirmeleri için pratik eğitimler sunulabilir. Bu, öğrencilerin uzaktan eğitim materyallerini daha iyi anlamalarına ve daha etkili bir şekilde öğrenmelerine yardımcı olabilir.
- Uzaktan eğitim materyallerini çeşitlendirmek, öğrencilerin ilgi düzeylerini artırabilir. Video dersler, forumlar ve sanal laboratuvarlar gibi farklı öğrenme kaynaklarının kullanılması, öğrencilerin çevrimiçi öğrenmeyi daha ilgi çekici bulmalarına yardımcı olabilir.
- Uzaktan eğitim sistemine tüm öğrencilerin eşit şartlarda ulaşabilmeleri adına internet bağlantısı ve gerekli donanımların olduğu toplu kullanım alanları (kafe, kütüphane, bilgisayar laboratuvarı vb.) yaygınlaştırılabilir.
- Öğrencilerin çevrimiçi dersler hakkındaki görüşlerini düzenli olarak toplamak ve geri bildirim almak, dersleri iyileştirmek için önemlidir. Öğrencilerin deneyimlerine dayalı geri bildirimler, ders içeriğinin ve öğretim yöntemlerinin geliştirilmesine yardımcı olabilir.
- Çalışmamız spor bilimleri fakültesi öğrencilerine uygulanmıştır. Farklı çalışmalarda diğer bölümler için de böyle bir çalışma yapılabilir.



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

The Portrayal of “Bad” Teacher: A Phenomenological Study of Turkish Trainee Teachers’ Experiences

id Ergin Erginer, Assoc. Prof. Dr.
Nevşehir Hacı Bektaş Veli University, Türkiye
erginerginer@nevsehir.edu.tr
Orcid ID: 0000-0002-7590-4755

id Aysun Erginer, Assoc. Prof. Dr.
Nevşehir Hacı Bektaş Veli University, Türkiye
aysunerginer@nevsehir.edu.tr
Orcid ID: 0000-0002-0029-4032

id Ali Bostancıoğlu, Dr., Corresponding Author
İskenderun Teknik University, Türkiye
ali.bostancioglu@iste.edu.tr
Orcid ID: 0000-0002-3901-857X

id Anıl Kadir Eranıl, Dr.
Nevşehir Directorate of National Education,
Türkiye
eranilanilkadir@gmail.com
Orcid ID: 0000-0001-7804-735X

Article Type: Research Article

Received Date: 12.07.2023

Accepted Date: 25.10.2023

Published Date: 30.10.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: 10.29329/tayjournal.2023.610.05

Citation: Erginer, E., Bostancıoğlu, A., Erginer, A., & Eranıl, A. K. (2023). The portrayal of “bad” teacher: a phenomenological study of Turkish trainee teachers’ experiences. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 791-826.

Abstract

Aiming to contribute towards building a collective picture of “good” teachers/teaching, the present study investigated Turkish teacher candidates’ (TCs’) perceptions of “bad” teachers/teaching. 182 TCs completing a postgraduate certificate in education in a medium-size university in Turkey participated in the study. The data was collected via an assignment and the participants were asked to provide situational examples of their experiences with their teachers. Stages of Thematic Analysis were followed during the analysis. In relation to “bad” teachers/teaching, around one-fourth of the coded content were grouped under the theme of professional (in)competencies (i.e. insufficient content knowledge), and almost three-fourths within affective qualities theme (i.e. discriminating among students) which indicated the perceived importance the latter played in student learning. The identified categories can be treated as a list of actions that can be avoided by teachers to create a more productive teaching/learning environment. The study concludes that consideration can be given to non-cognitive aspects in creating professional teaching standards and/or criteria during teacher recruitment processes.

Keywords: Bad” teacher; “good” teacher, effective teaching; teacher education, professional (in)competencies, affective qualities.

Introduction

“Student outcomes” is an important factor in achieving societal development (i.e. a more developed economy and a democratic society) that education and schools strive to achieve. In relation to that, the Organization for Economic Cooperation and Development’s [OECD] (2005) comprehensive review of literature has recognized that teacher quality, following student background and abilities, is the second most important factor affecting student success. Similarly, the positive relationship between teacher effects and student learning has been well documented in the literature (i.e. Burroughs et al., 2019; Darling-Hammond, 2000; Hattie, 2009). This underlines the need for quality teaching and teachers.

While quality teaching is interpreted differently in various contexts (Ng, 2015), there seems to be a consensus that quality teaching is provided by good/effective teachers (i.e. Ng, 2015; Stronge et al., 2011). Thus, for a long time, researchers have been interested in finding answers to questions such as: ‘What are the characteristics of “good” teachers?’ (i.e. Coe et al., 2014; Hanushek & Rivkin, 2010; Nussbaum, 1992). Research findings in this respect can be broadly categorized into two overarching themes; a) professional competencies and b) affective qualities (Fajet et al., 2005).

Professional competencies of “good/effective” teachers can be grouped under content and pedagogical content knowledge related factors. Researchers identified sufficient knowledge of the subject matter as part of the content knowledge of “good/effective” teachers (Fajet et al., 2005; Kaur, 2009; Smith & Yasukawa, 2017; Strikwerda-Brown et al., 2008; Witcher et al., 2001). As for pedagogical content knowledge, researchers highlighted various characteristics of “good/effective” teachers such as; 1) an understanding and awareness of students, their needs and differences as well as utilising this information to make content more meaningful and relevant for learners (Murray, 2011; Raufelder et al., 2016; Smith and Yasukawa, 2017; Walker, 2008), 2) maintaining classroom management (Raufelder et al., 2016; Smith and Yasukawa, 2017; Stronge et al., 2011), and 3) professionalism (Coe et al., 2014; Smith & Yasukawa, 2017).

Affective qualities of “good/effective” teachers, on the other hand, can be categorized under two headings; 1) character traits (i.e. being patient, compassionate, and fair; see for example Darling-Hammond, 2000; Strikwerda-Brown et al., 2008; Walker, 2008) and 2) attitudes toward students (i.e. respecting students, appreciating students, and having a positive relationship with students; see for example Fajet et al., 2005; Raufelder et al., 2016; Strikwerda-Brown et al., 2008). The comparison of findings in the related literature reveals an interesting fact; students, in general, valued their teachers’ affective qualities over their professional competencies (i.e. Fajet et al., 2005; Raufelder et al., 2016; Smith & Yasukawa, 2017). In fact, there is also tentative statistical evidence that teachers’ affective qualities (i.e. positive relationship with students) lead to higher student achievement (Stronge et al., 2011).

This brief review on “good/effective” teachers/teaching suggests that while a number of good/effective teacher characteristics seem to be acknowledged across different contexts (i.e. sufficient knowledge of the subject matter; see for example Fajet et al., 2005; Smith and Yasukawa, 2017; Strikwerda-Brown et al., 2008), other characteristics (i.e. ongoing participation in professional development activities; see Coe et al., 2014) does not seem to be present in all contexts. This suggests what is understood by “good/effective” teacher can differ from one context to another and from one country/culture to another. Therefore, “we do not need a picture of ‘the good/effective teacher’ in the singular, but pictures of good teachers in the plural, and good/ effective teaching in the collective sense” (Connell, 2009, p. 226). In fact, one way of contributing to the creation of “good/effective” teaching in the collective sense can be depicting the picture of what being a “good/effective” teacher is not.

Prior to the examination of relevant literature on “bad” teacher/teaching, it is important to clarify what is meant with “bad”. Distinguishing between “good” and “bad” can be problematic since these concepts are relative (“good/bad” according to what?, whom?, or even when?). In fact, such distinctions contribute towards creating a situation where the problems of education are blamed on the teachers, thereby, scapegoating the teachers and preventing the public from focusing on finding solutions to the problems of education (Kumashiro, 2012). Nevertheless, in order to provide a working definition for the study, we have focused on students’ perceptions of “bad” teaching which we described as teacher qualities/ attitudes/ behaviours that are perceived by students to be ineffective for and/or impede their learning. “Student perceptions of their teachers” is the focus since it can affect student engagement (i.e. Havik and Westergard, 2020) and motivation (i.e. Orhan-Özen, 2017) which have direct impact on student outcomes.

The concept of “bad” teacher has not received as much attention by researchers as the “good” teacher (Busler et al., 2017). Research on this topic can be categorized into two overarching themes; a) professional (in)competencies and b) affective qualities. Factors in relation to professional incompetencies include; lack of subject matter knowledge, not being able to engage students, incomprehensible teaching and so on (see Table 1). Factors in relation to the affective qualities theme, on the other hand, include; a) character traits (i.e. being boring and untrustworthy) and b) attitudes towards students (i.e. relational aggression towards students and making students feel embarrassed; see Table 1).

Table 1. Review of literature on 'bad' teacher/teaching

Theme	Sub-Theme	Category	Sub-category
Professional competence	Lack of Content Knowledge		<ul style="list-style-type: none"> Not knowledgeable about subject matter (Busler, et al., 2017; Fajet, et al., 2005; Raufelder, et al., 2016; Suplicz, 2009)
		Lack of awareness and understanding of students	<ul style="list-style-type: none"> Teacher-centred instruction (Raufelder, et al., 2016) Unengaging (Busler, et al., 2017) Unrealistically high expectations from students (Busler, et al., 2017)
	Lack of Pedagogy knowledge		<ul style="list-style-type: none"> Does not utilize multi-method instruction (Fajet, et al., 2005) Incapacity to keep students under control (Raufelder, et al., 2016; Suplicz, 2009) Incomprehensible teaching (Fajet, et al., 2005; Raufelder, et al., 2016; Suplicz, 2009)
		Poor teaching	<ul style="list-style-type: none"> Poor classroom management (Fajet, et al., 2005) Poor time management (Busler, et al., 2017) Unorganized lessons (Busler, et al., 2017; Fajet, et al., 2005; Suplicz, 2009) Unrepresentative assessment (Busler, et al., 2017)
Affective qualities	Character traits	Lack of professionalism	<ul style="list-style-type: none"> Indifferent to the profession, subject, or lesson (Fajet, et al., 2005; Raufelder, et al., 2016; Suplicz, 2009) Unprofessional (Fajet, et al., 2005) Boring and repetitive (Fajet, et al., 2005; Raufelder, et al., 2016; Suplicz, 2009) Inconsistent and untrustworthy (Raufelder, et al., 2016; Strikwerda-Brown, et al., 2008) Inflexible and condescending (Busler, et al., 2017; Fajet, et al., 2005) Not approachable/ personable (Busler, et al., 2017; Fajet, et al., 2005; Raufelder, et al., 2016) Not caring (Busler, et al., 2017; Fajet, et al., 2005) Passive and non-confident (Busler, et al., 2017; Fajet, et al., 2005; Raufelder, et al., 2016) Rude and bad-tempered (Fajet, et al., 2005) Stressed and moody (Suplicz, 2009) Unfair and biased (Raufelder, et al., 2016; Strikwerda-Brown, et al., 2008)
	Attitudes toward students		<ul style="list-style-type: none"> Disrespectful and not interested in learners (Busler, et al., 2017; Fajet, et al., 2005; Strikwerda-Brown, et al., 2008; Suplicz, 2009) Insult students with inappropriate jokes or comments in class (Raufelder, et al., 2016; Strikwerda-Brown, et al., 2008) Lack of interaction and a close relationship with students with students (Busler, et al., 2017; Raufelder, et al., 2016) Make students feel embarrassed (Raufelder, et al., 2016) Relational aggression towards students (Fajet, et al., 2005; Raufelder, et al., 2016)

It can be understood from this review of literature that studies on the concept of “bad” teacher/teaching have mainly been conducted in the United States of America (Busler et al., 2017; Fajet et al., 2005), few in Europe (Raufelder et al., 2016; Suplicz, 2009; in Germany and Hungary respectively) and one in Australia (Strikwerda-Brown et al., 2008). Researchers, nevertheless, state that similar studies should be conducted in different settings and/or contexts. In line with that, to the best of our knowledge, no previous study has investigated the concept of “bad” teacher in Türkiye (a country that is located between Europe and Asia and moulded with both Eastern and Western values). Therefore, the present study aimed to contribute to research in this field by studying the “bad” teacher in the context of Turkey, thereby, supporting and/or challenging findings of previous research in this field. The research question to which an answer was sought was:

What are Turkish trainee teachers’ experiences of “bad” teachers/teaching?

Results of the present study can help corroborate and/or challenge the findings of previous studies, thereby, assisting researchers in reaching a holistic picture of the literature on “good/bad” teachers. Furthermore, different from studies on “good” teachers/teaching, studying the concept of “bad” teachers can offer pre-service and/or in-service teachers a list of actions that can be avoided in their journey towards enhancing their practice and becoming a “good/effective” teacher, which can otherwise be more stressful and/or challenging if they had a “to-do list”. In addition, recruiting participants among TCs was significant in that; asking TCs to report on their past learning experiences provided them with an opportunity to reflect on and develop their inner-criteria towards becoming a “good” teacher, thereby, allowing a certain level of professional development.

Method

A phenomenological design (Cresswell, 2007) was applied in order to reveal teacher candidates’ (TCs’) perceptions of “bad” teachers/teaching. In an effort to prevent researcher effects (i.e. social desirability bias) and reach as many participants as possible, we decided to collect the data via a homework assignment (see details below). This qualitative approach allowed us to interpret participants’ descriptions of their past experiences with their teachers and identify the qualities/behaviours that were perceived to impede/prevent learning

Researcher’s Role and the Research Journey

The foundations for conducting the present study were laid in the Teaching Methods and Principles Module that the lead researcher taught in a postgraduate certificate in education program. He attempted to teach the in-depth relationship between teaching and teachers via metaphors (i.e. not teaching, not presenting information, being a source of motivation for learning, thinking like a philosopher, and creative thinking). He did not focus on knowledge transmission, rote learning or memorization at all. During teaching processes, he witnessed the astonishment of many learners and their astonishment transformed into a deep interest in learning as time passed.

Being a supporter of constructivism, the lead researcher focused on guiding learners to construct new knowledge based on their previous learning experiences and creating links between newly acquired concepts of learning. A specific focus was paid to ensure the development of the cognitive processes that would:

- enrich learners' concept repertoire,
- allow learner independence and sense of responsibility for learning,
- guide learners to collaborate with one another,
- develop learners' problem solving skills,
- allow analytical and critical thinking,
- allow creative, original, and aesthetic thinking, and
- encourage improvisation and role-play skills.

The learners became more engaged in the course as they learned about the different strategies developed by the lead researcher (i.e. red and green chair, tree root, silent actor, little prince chair, empathic sympathy, body im animation) as well as more generic strategies (i.e. fishbone, six thinking hats, and house of quality) that they could use in the future to help their future students (co)construct new knowledge. Thus, the lead researcher attempted to show that being a teacher was more than transmitting knowledge and included; being role model and a source of motivation, having drama skills, being a guide and collaborator, and getting students to think about their own learning. In the end, the reactions he received from the learners made him question what sort of previous learning experiences they might have had. Thus, along with other colleagues, he decided to design the present research focusing on "bad" teacher.

Participants

The participants comprised of 182 TCs completing a postgraduate teaching certificate in education [PGCE] at a medium-size university located in central Anatolia (Türkiye). They were recruited following a convenience sampling strategy and all of them were the students of the lead researcher. 132 of the participants were female and 50 were male, and they studied to get a PGCE in different disciplines as detailed in Table 2. Their age ranged between 22 and 35.

Table 2. Disciplines for which the participants aimed to complete their PGCE

Subject Area	N		Subject Area	N	
	Male	Female		Male	Female
Biology	-	8	Philosophy	4	11
Chemistry	-	3	Physics	1	-
Economics	1	1	Physical Education	13	8
History	5	3	Public Administration	2	2
Management	7	20	Theology	6	34
Mathematics	-	3	Tourism	5	7
Nursing	-	11	Turkish Language and Literature	6	21
Total	50	132			

Data Collection Tools and Procedures

In order to depict an overall picture of "bad" teachers/teaching, we wanted to include as many participants as possible. Homework assignment was a viable option especially given the limitations we faced (i.e. time and location limitations due to the fact that most participants travelled from various cities to the university at weekends to attend classes). Colleagues who are expert in collecting qualitative

data were consulted and the following open-ended homework question was formulated: "What are your experiences of "bad" teachers? What behaviours/qualities of your past teachers impeded your learning? Can you provide examples?"

The ethical guidelines set by the American Psychological Association (2017) were followed and there were no anticipated risks of participating in the study. TCs were informed that participation was voluntary and that they did not have to participate or they could withdraw within the two weeks following the assignment submission. In the end, TCs' assignments were anonymized and collated in a research file which consisted of 37.9 k words, making an average assignment 209-word long.

Data Analysis

Thematic Analysis [TA] was utilized to analyse the collected data (Braun & Clarke, 2006). The reasons for selecting TA for the analysis included; its ability to condense large datasets and offer "thick description", and its flexibility. The flexibility of TA allowed for its implementation in the present study both inductively and deductively. In this sense, based on the review of literature, two general themes (professional incompetencies and affective qualities) and their sub-themes (i.e. content knowledge and character traits) were formed deductively. Afterwards, the data were analysed inductively to generate (sub)categories by the first and second authors.

Firstly, the researchers familiarized themselves with the data and then coded the data using content and descriptive analysis techniques (Saldaña, 2013). Afterwards the two researchers met and exchanged information about the generated codes and worked on creating an initial thematic map (see Appendix 1). The researchers read through the extracts again taking the draft thematic map into account and recoded the data. A second meeting took place where the two researchers discussed and further revised the initial thematic map. The two researchers went through the data one last time to ensure no new codes/categories emerged and that data saturation was achieved. Given the amount of data and emerging codes and categories, a third and last meeting was held to discuss merging/ deleting codes and/or categories in an effort to reduce and simplify the findings (Saldaña, 2013).

Trustworthiness

Various strategies were employed in order to establish the trustworthiness of the study (Denzin & Lincoln, 2005). Firstly, in terms of credibility, in an attempt to encourage honest and truthful responses, discussions were held with TCs prior to data collection and they were informed that the responses they provide would contribute towards developing our understanding of "bad" teacher/teaching. The assignment also allowed participants to provide their responses in their own time and in a comfortable way which might not have happened in an interview setting due to researcher effect(s). Participant comments such as the following indicated that rapport was established with them and they provided honest answers:

I want to say that I am grateful for such an assignment. I should add that I have been asking the same question to myself for years now. [...] Thanks to this assignment, I will not only be completing my responsibility as a student, but also I might allow colleagues who read these words to learn from my experiences (P83).

In terms of dependability, the first and second authors -who are experienced in qualitative research- analysed the data and developed themes/categories and extracts representing them.

Afterwards, the third and fourth researchers were provided with a code book and the uncoded extracts (half of the extracts were given to the third and the other half to the fourth researcher), and they were asked to use the code book to label the extracts (see Appendix 2). Inter-coder agreement level following the analyses was calculated as 83 % (209 out of 252 codes) which is considered to be “good” (Miles et al., 2014). It was found that the disagreements mostly resulted from longer extracts of data which were coded for more than one theme. The below quote, for example, was coded for multiple categories such as *not knowing students well enough*, discriminating among students, and **problems in preparing teaching materials**:

[...] I can summarize the negative issues in relation to [...] my teachers as following; not giving me the opportunity to speak in the classroom in spite of raising my hand and continuously selecting the same individuals to participate in classroom activities, *not using sentences that would motivate me, looking at me with discouraging mimics, not being able to think that I might get offended*, teaching the lesson to a specific group of students and ignoring the others, and **not being able to make lessons fun by using tools** (P42).

In terms of transferability, details about the themes and categories were provided as well as direct quotations as examples (see Appendix 2). As stated before the data for the study were collected via a homework assignment which became the documents for the analysis stage. Document analysis technique has been criticized for gathering limited or partial data in relation to the research problem, be biased, or not representative. Nevertheless, the researcher in this study aimed to overcome those limitations by; a) focusing the question asked in the homework assignment to enable the collection of relevant data, b) encouraging participants to provide honest and truthful responses to prevent biased responses, and c) including as many participants as possible to create a somewhat representative sample of the teacher candidate population.

Ethical Permits of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Iskenderun Technical University Scientific Research and Ethics Committee

Date of ethical review decision= 04.10.2022

Ethics assessment document issue number= E-22398675-050.02.04-74857

Findings

The themes and categories emerging from the data collected in relation to teacher candidates' (TCs') perceptions of “bad” teacher are presented in this section. Participants' perceptions were broadly categorized into two themes; professional incompetencies and affective qualities (see Figure 1). A striking fact about the results is that the data were predominantly coded under the theme of affective qualities (n=181 out of 252; 72%) and only 71 extracts (28 %) were categorized under professional

(in)competencies. This indicates the importance that participants attached to affective qualities. Additionally, details regarding what each category/theme represented as well as sample extracts are presented in Appendix 2.

Professional Incompetencies

Most of the data coded under this theme were within pedagogical content knowledge (n=67) and the remaining categories were within content knowledge (n=4).

Pedagogy Knowledge Related Factors

The 67 codes within this sub-theme were grouped into five categories; not knowing students well enough (n=17), preventing critical thinking (n=17), following teaching approaches that render students passive (n=7), problems in managing the classroom (n=2), and unprofessional conduct (n=24).

Not knowing students well enough: To begin with, the category of not knowing students well enough included codes such as teachers not being able to pay attention to student readiness, their needs, or individual differences. For example, the extract provided by P77 (see Appendix 2) indicates how participant perceptions of their teachers (i.e. the teacher not being able to take student readiness into account) demotivated them.

Some participants also complained that their teachers did not consider individual differences noting that their teachers “treated all students in the same way” (P148) or they “were not able to discover [students’] skills” (P15). Consequently, it was noted that such teachers were not able to guide students in the general sense and/or in choosing a profession (see Appendix 2).

Preventing critical thinking: A striking finding of the present study was the fact that preventing critical thinking emerged as a category, which indicated participants’ awareness of and the importance they attached to this concept. According to participant responses, teachers prevented critical thinking by following a dogmatic approach (n=8), preventing students from asking questions/making queries (n=7), and preventing the sharing of ideas in the classroom (n=2; see Appendix 2). As exemplified in the below quote, such reported actions can kill students’ curiosity and creativity:

Whenever I went to consult with my teacher regarding my investigations, I was rejected and told to come back another time. This caused me to gradually start wondering about fewer things. The more I thought that I would not be able to go beyond the things I wanted to learn about, the more my enthusiasm to study died out (P125).

Following teaching approaches that render students passive: Another category in relation to preventing critical thinking was noted as following teaching approaches that render students passive. This category included data in relation to how teachers were perceived to follow direct instruction and were reported to be too active in the classroom, thereby, making students become passive recipients of knowledge (sample extracts are presented in Appendix 2).

Problems in managing the classroom: Participant comments also indicated learners felt their learning was negatively affected when teachers were not able to control the classroom (data samples are available in Appendix 2).

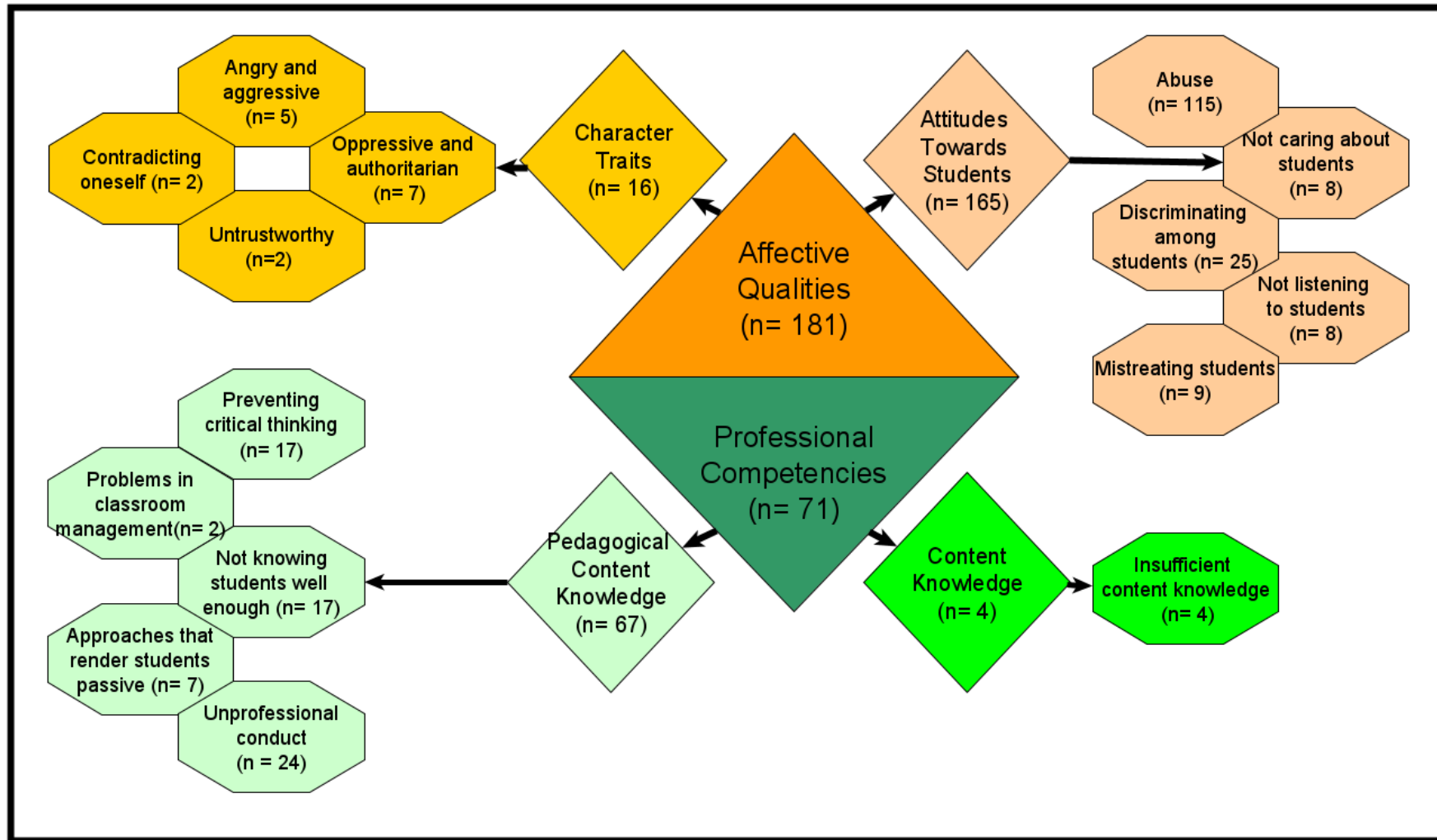


Figure 1. Overview of results

Unprofessional conduct: Unprofessional conduct, in the present study, refers to teachers' conducts that do not pertain to characteristics of teaching, contrary to professional standards/ ethics, or not done with professional competence. In relation to this, the following codes emerged from the data; getting students to prepare for and present lessons (n=2), not enjoying the profession (n=3), not teaching the course content (n=11), taking advantage of students (n=5), and talking about the self (n=3; see Figure 2).

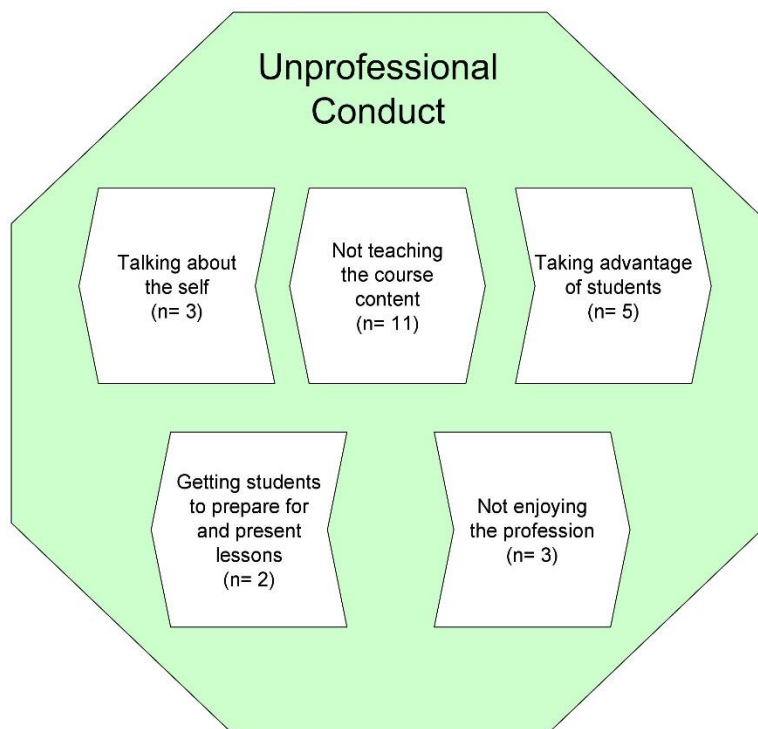


Figure 2. Details of the unprofessional conduct category

The negative outcomes when teachers share their private life experiences and continuously talk about themselves in the classroom were highlighted by participants. Participants also noted that they had teachers who would not teach or only do it for a short period of time during a lesson. Occasions were also reported where teachers assigned their roles to students by getting the students to prepare for and teach the course content. While this indicates a certain amount of agency given to students which can be considered to be positive in certain cases, participant comments (see P129 in the related section in Appendix 2) indicated such experiences were negative since, for example, the comprehension check element of the teaching was missing in the class. In addition, few participants noted that their teachers took advantage of them and used them to provision their personal needs. Last but not least, there were instances where participants noted the negative effects of teachers not enjoying the job they do (see Appendix 2).

Content Knowledge Related Factors

The four codes within this category indicated that the teachers whom were mentioned by the participants were tasked with teaching a subject that was not their area of expertise indicating a problem within the education system rather than the teachers themselves (see Appendix 2).

Affective Qualities

The 181 extracts of the data coded within this theme were categorized as character traits (n= 16) and attitudes towards students (n= 165). These statistics indicated that the way their teachers treated them mattered more to the students.

Character Traits

The 16 extracts coded within this category made references to the following character traits of teachers; being oppressive and authoritarian (n=10), angry and aggressive (n=7), and untrustworthy (n=2) as well as contradicting oneself (n=2).

Being oppressive and authoritarian: Few students reported that their teachers established “fear-based authority” (P3), pressured students and expected them to “obey the teacher at all times” (P17) which students noted to have prevented them from learning course content (see Appendix 2).

Being angry and aggressive: In relation to being angry and aggressive, P32 explained that “angry and aggressive behaviours” of their mathematics teacher caused them “to experience problems” in mathematics classes and, as a result, P32 noted that they “skipped mathematics questions in the university entrance exam”. Few students mentioned that their confidence in the classroom was negatively affected and their “love for school transformed into hatred” (P47) due to their teachers’ aggressiveness (see Appendix 2).

Being untrustworthy and contradicting oneself: There were also students who implied that their learning was negatively affected when their teachers contradicted themselves or took actions that suggested they cannot be trusted (see Appendix 2).

Attitudes Towards Students

165 extracts were coded within this sub-theme, which indicates the importance TCs attached to how their teachers treated them. Teacher attitudes that participants pointed out included; abusing (n=115), discriminating among (n=25), mistreating (n=9), not caring about (n=8), and not listening to students (n=8).

Abuse: To begin with, participants reported experiencing various forms of teacher abuse (i.e. physical, verbal, and sexual). The consequences of abuse included; loss of self-confidence, emergence of prejudices and loss of interest in and motivation for lessons. As reported by an extreme case, such experiences also caused “unforgettable memories in one’s unconsciousness” (P28). The most common form of abuse that participants reported was verbal abuse which included; offending (n=32), threatening (n=13), shouting at (n=9), and belittling (n=7) students (see Figure 3 and Appendix 2).

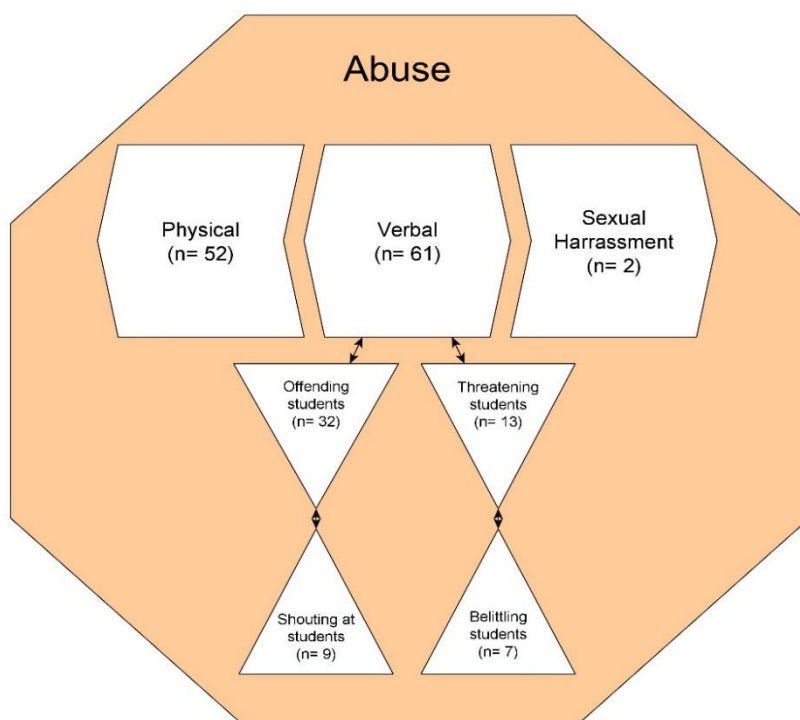


Figure 3. Details of the unprofessional conduct category

Several participants disclosed negative emotions that they experienced following incidents where their teachers shouted at them either in private or in front of peers. TCs also reported that they were threatened (implicitly or explicitly) by their teachers in the past. For example, P81 noted an incident where their teacher threatened students with getting them “to step on a heated wood stove unless they listened to [their teacher]”. In addition, participants noted that their motivation to learn wore off following experiences of being offended or belittled (see Appendix 2).

Physical abuse, which generally was reported as beating, was the second most frequently mentioned form of abuse. And, in few cases, participants reported instances of sexual harassment which was considered as a serious offense. As explained by P58, it is possible that teachers abuse the power relationship between them and students (see Appendix 2)

Discrimination among students: The most common forms of discrimination reported by TCs were; discrimination based on family income levels (n=9), success (n=9), and gender (n=2). To begin with, some participants perceived that their teachers did not pay as much attention to poor students when compared to those who were economically better off. Other participants perceived similar feelings and noted they were discriminated because of not being successful students. And, in few cases, participants (both male and female) referred to gender-based discrimination among students. Whilst a male student felt “negatively affected by their teachers extremely feminist approach” (P135), a female student noted that their teacher “scolded female students when they asked questions”, but “responded rather happily to male students” (P56; also see Appendix 2).

Not caring about students: TCs’ anecdotes (n=8) included incidents indicating that they felt they were not cared for by their teachers because of certain actions that their teachers did or did not do. P164, for example, noted that they did not receive the attention and love that they expected from their teachers (see Appendix 2).

Mistreating students: TCs also highlighted instances (n=9) where they thought they were not treated fairly and their learning was negatively affected by their teachers' such actions. A common example of mistreatment involved students being punished for something that they had not done (see Appendix 2).

Not listening to students: This category is linked to mistreating students in the sense that students felt mistreated because they were misjudged by their teachers without being given a chance to make an explanation and defend themselves (n=8).

Discussion and Conclusion

The aim of the present study was to gather insights into Turkish trainee teachers' perceptions of "bad" teacher qualities/behaviours which negatively affected their learning. Slightly over one-fourth of the data were coded within the theme of professional incompetencies (i.e. not paying attention to student readiness or not considering individual differences whilst teaching). Professional competencies were also highlighted in studies investigating "good/bad" teachers/teaching (Busler et al., 2017; Coe et al., 2014; Murray, 2011; Raufelder et al., 2016; Smith & Yasukawa, 2017; Stronge et al., 2011; Suplicz, 2009). This indicates to be able to teach and facilitate student learning, teachers should appropriately blend content and pedagogy knowledge (Shulman, 1986). It is sensible that teachers cannot be expected to successfully guide students during learning processes unless they have pedagogical content knowledge which allows them to present content to learners based on an understanding of student characteristics and what makes learning easy or difficult for them.

On the other hand, however, almost three-fourths of the data were coded under the theme of affective qualities (i.e. teachers' being oppressive and authoritarian, and discriminating among students) showing the significant role this theme played in participants' learning. Considering the relevant literature, this outcome was not surprising. Previous research has also found that students pay more attention to teachers' character traits and how their teachers approach them (Busler et al., 2017; Fajet et al., 2005; Lupascu et al., 2014; Murray, 2011; Ng, 2015; Raufelder et al., 2016; Smith & Yasukawa, 2017; Strikwerda-Brown et al., 2008; Stronge et al., 2011). The results in this study and related literature suggest that students want to be treated not only as learners but also as individuals who need attention and want to feel appreciated and treated fairly. Participants' motivation to learn a specific subject area and/ or engage in lessons seemed to be negatively affected when they felt they were being belittled, offended, discriminated against, or mistreated by their teachers. This situation, in return, might have decreased their chances of learning content since motivation to learn and engagement in lessons affect student outcomes (Havik & Westergard, 2020; Orhan-Özen, 2017).

These results also indicate that teaching is more than having a qualification or certificate to teach which are generally awarded based on candidates' academic capabilities and content knowledge. The results of the present study suggest that affective qualities of teachers (especially their attitudes towards students) play an important role in teaching/learning processes in the eyes of the learners and, therefore, it can be argued that such qualities should also be considered in forming criteria for accepting teacher candidates into teacher education programs and/or recruiting teachers in schools. This argument is supported by the fact that teacher effectiveness is a multidimensional construct (Harris and Rutledge, 2010) and that countries where students show high performance in international exams such as the Programme for International Student Assessment [PISA] and the Trends in International Mathematics and Science Study [TIMSS] (i.e. Finland and Singapore) are measuring candidates' not only

cognitive but also non-cognitive (i.e. communication, motivation) abilities when recruiting teachers (Klassen & Kim, 2017). Similarly, students achieve better results in countries where components of love and care for students, commitment and dedication to the profession, and collaboration have been integrated into professional standards for teachers (i.e. the case of Hong Kong; Goodwin, 2020).

On a different note, a striking finding in the present study was that teacher candidates (TCs) perceived teacher-centred practices as well as prevention of critical thinking (i.e. preventing students from asking questions) to be detrimental to their learning. This finding supports the idea that participants had the awareness regarding the importance of building learner-centred classroom environments where learners feel safe and can comfortably ask questions in the process of linking prior knowledge with new knowledge (Chin & Osborne, 2008; Koechlin & Zwaan, 2014). In addition, although it was negative, the experience of “bad” teachers (i.e. not being cared about, not being listened to) has the potential towards helping the participating TCs to position themselves as interactive and caring teachers in the future (e.g. Arvaja et al., 2020). As a result, it can be argued that participants are likely to adopt constructivist teaching practices where their students would feel cared for and listened to, and be allowed to inquire and discover knowledge indicating compatibility with the changing teacher roles (i.e. being guides and facilitators of learning) in the 21st century.

Another finding worth discussing is that participants referred to their teachers not enjoying their job and teachers’ unprofessional conduct as a factor negatively affecting their learning. In relation to this, related research underlined motivation and professionalism as important factors contributing to the quality of education (e.g. Korkmazgil & Seferoglu, 2021; Tang et al., 2014). In fact, quantitative research also supports that students’ perceptions of their teachers’ enthusiasm to teach contributes towards their motivation to learn and developing mastery goal orientations (Lazardies et al., 2018). This can be considered as another supporting point for considering teacher candidates’ non-cognitive characteristics (i.e. motivation to teach) as part of the recruitment criteria and/or creating professional standards for teachers.

Based on these findings, the following suggestions are made: 1) teachers and teacher educators alike should be made aware of the importance learners attach to teacher-student relationships and building rapport; 2) the factors identified to be related to “bad” teaching can be treated as a list of actions that should be avoided by teachers; and 3) educational authorities in Turkey and other countries should consider integrating non-cognitive qualities into standards for teachers and/or criteria for entry into the teaching profession and/or teacher training programs.

The present study’s contribution to knowledge lies in the fact that it provides insights into “bad” teachers/teaching in a new context (Türkiye) and the results of the study corroborate the findings of previous case studies on “bad” teachers, thereby, increasing the validity and reliability of both the present and past research. More importantly, however, the study highlights the significance of student perceptions of teachers and how such perceptions can affect their learning processes. This supports the idea that receiving feedback from learners can provide teachers with increased opportunities to develop their own practice (Eriksen et al., 2020). In addition, whilst reaching the standards of “good” teacher/teaching can be challenging and stressful, the present study offers a list of actions that can be avoided by teachers in their journey towards enhancing their practice and becoming a better teacher which can have a direct effect on student outcomes and a country’s economy (Hanushek, 2011).

As in most qualitative studies, the present study is limited in the generalizability of its findings. However, our aim in the present study was not to make generalizations but rather explore and provide a detailed account of how learners perceived their teachers' actions. Another limitation of the study relates to the nature of the study (phenomenology) and the amount of the collected data. Although phenomenology requires the researcher to evaluate the phenomenon under investigation in the context that it occurs, it would not have been feasible in this study to evaluate all the data collected from 182 participants in their own contexts. Nevertheless, considering the emerging data, we believe participants provided honest and truthful responses which the readers can relate to. In the future, nevertheless, researchers can attempt to conduct a meta-synthesis of research on "good" and/or "bad" teachers/teaching. Last but not least, this manuscript was finalized during a time where the world experienced a pandemic due to the Corona-Virus Disease [COVID] which resulted in lockdowns all around the world and education institutions had to move to online environments to prevent breakdown of education. It is likely that as a result of those developments, online teaching will continue gaining attention and become more popular in the future. Thus, future research can investigate student perceptions of "good/bad" teacher/teaching in online venues.

Recommendations

Based on these findings, the following recommendations are proposed:

- 1) Teachers and teacher educators alike should be made aware of the importance learners attach to teacher-student relationships and building rapport;
- 2) The factors identified to be related to "bad" teaching can be treated as a list of actions that should be avoided by teachers;
- 3) Educational authorities in Turkey and other countries should consider integrating non-cognitive qualities into standards for teachers and/or criteria for entry into the teaching profession and/or teacher training programs.

References

- American Psychological Association. (2017). Ethical principles of psychologists and code of conduct (2002, Amended June 1, 2010 and January 1, 2017) Access of date: 26.03.2023 <http://www.apa.org/ethics/code/index.htm>
- Arvaja, M., Sarja, A., & Rönnerberg, P. (2020). Pre-service subject teachers' personal teacher characterisations after the pedagogical studies. *European Journal of Teacher Education*, 53(5), 1389-1411.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Burroughs, N. A., Gardner, J., Lee, Y., Guo, S., Touitou, I., Jansen, K., & Schmidt, W. (2019). A review of the literature on teacher effectiveness and student outcomes. In N. A. Burroughs, J. Gardner, Y. Lee, S. Guo, I. Touitou, K. Jansen, & W. Schmidt (Eds.), *Teaching for excellence and equity* (Vol. 6, pp. 7-17). Springer.
- Busler, J., Kirk, C., Keeley, J., & Buskist, W. (2017). What constitutes poor teaching? A preliminary inquiry into the misbehaviours of not-so-good instructors. *Teaching of Psychology*, 44(4), 330-334.
- Chin, C., & Osborne, J. (2008). Students' questions: A potential resource for teaching and learning science. *Science Education*, 44, 1-39.
- Coe, R., Aloisi, C., Higgins, S., & Major, L. E. (2014). *What makes great teaching? Review of the underpinning research*. The Sutton Trust.
- Connell, R. (2009). Good teachers on dangerous ground: towards a new view of teacher quality and professionalism. *Critical Studies in Education*, 50(3), 213-229.
- Creswell, J. W. 2007. *Qualitative inquiry and research design: Choosing among five approaches*. (2nd ed.). Sage.
- Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1), 1-44.
- Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research*. Sage.
- Eriksen, H., Lejonberg, E., Tschannen-Moran, M., Christophersen, K. A., & Elstad, E. (2021). Learners providing feedback on teaching: Pre-service teachers' perceptions of a teacher assessment arrangement. *Scandinavian Journal of Educational Research*, 65(6), 1097-1113.
- Fajet, W., Bello, M., Leftwich, S. A., Mesler, J. L., & Shaver, A. N. (2005). Pre-service teachers' perceptions in beginning education classes. *Teaching & Teacher Education*, 21, 717-727.
- Goodwin, A. L. (2021). Teaching standards, globalisation, and conceptions of teacher professionalism. *European Journal of Teacher Education*, 44(1), 5-19.
- Hanushek, E. A. (2011). The economic value of higher teacher quality. *Economics of Education Review*, 30(3), 466-479.
- Hanushek, E. A., & Rivkin, S. G. (2010). The quality and distribution of teachers under the no child left behind act. *The Journal of Economic Perspectives*, 24(3), 133-150.
- Harris, D. N., & Rutledge, S. A. (2010). Models and predictors of teacher effectiveness: A comparison of research about teaching and other occupations. *Teachers College Record*, 112, 914-960.
- Hattie, J. (2009). *Visible learning: A synthesis of 800+ meta analyses on achievement*. Routledge.
- Havik, T., & Westergard, E. (2020). Do teachers matter? Students' perceptions of classroom interactions and student engagement. *Scandinavian Journal of Educational Research*, 64(4), 488-507.
- Kaur, B. (2009). Characteristics of good mathematics teaching in Singapore grade 8 classrooms: A juxtaposition of teachers' practice and students' perception. *ZDM*, 41(3), 333-347.
- Klassen, R. M., & Kim, L. E. (2017). Assessing critical attributes of prospective teachers: Implications for selection into initial teacher education programs. In W. Putwain & K. Smart (Eds.), *British journal of educational psychology monograph series II: Psychological aspects of education* (pp. 5-22). Wiley.
- Koehlin, C., & Zwaan, S. (2014). *Q tasks: How to empower students to ask questions and care about answers*. Pembroke Publishers Limited.
- Korkmazgil, S., & Seferoğlu, G. (2021). Teacher professionalism: Insights from Turkish teachers of English into the motives that drive and sustain their professional practices. *Journal of Education for Teaching*, 47(3), 366-378.
- Kumashiro, K. K. (2012). *Bad teacher! How blaming teachers distorts the bigger picture*. Teachers College.
- Lazardies, R., Buchholz, J., & Rubach, C. (2018). Teacher enthusiasm and self-efficacy, student-perceived mastery goal orientation, and student motivation in mathematics classrooms. *Teaching & Teacher Education*, 69, 1-10.
- Lupascu, A. R., Panisoara, G., & Panisoara, I. O. (2014). Characteristics of effective teacher. *Procedia - Social and Behavioral Sciences*, 127, 534-538.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook*. Sage.

- Murray, S. (2011). Secondary students' descriptions of "good" mathematics teachers. *Australian Mathematics Teacher*, 67(4), 14-20.
- Ng, P. T. (2015). What is quality education? How can it be achieved? The perspectives of school middle leaders in Singapore. *Educational Assessment, Evaluation and Accountability*, 27, 307-322.
- Nussbaum, J. F. (1992). Effective teacher behaviors. *Communication Education and Science*, 41(2), 167-180.
- Organisation for Economic Co-Operation and Development [OECD]. (2005). Teachers matter: Attracting developing and retaining effective teachers. Access of date: 26.03.2023. <https://www.oecd.org/education/school/34990905.pdf>
- Orhan-Özen, S. (2017). The effect of motivation on student achievement. In E. Karadağ (Ed.), *The factors effecting student achievement* (pp. 35-56). Springer International.
- Raufelder, D., Nitsche, L., Breitmeyer, S., Kessler, S., Herrmann, E., & Regner, N. (2016). Students' perception of "good" and "bad" teachers: Results of a qualitative thematic analysis with German adolescents. *International Journal of Educational Research*, 75, 31-44.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4-14.
- Smith, E., & Yasukawa, K. (2017). What makes a good VET teacher? Views of Australian VET teachers and students. *International Journal of Training Research*, 15(1), 23-40.
- Strikwerda-Brown, J., Oliver, R., Hodgson, D., Palmer, M., & Watts, L. (2008). Good teachers/ bad teachers: How rural adolescent students' views of teachers impact on their school experiences. *Australian Journal of Teacher Education*, 33(6), 29-43.
- Stronge, J. H., Ward, T., & Grant, L. W. (2011). What makes good teachers good? A cross-case analysis of the connection between teacher effectiveness and student achievement. *Journal of Teacher Education*, 62(4), 339-355.
- Suplicz, S. (2009). What makes a teacher bad? Trait and learnt factors of teachers' competencies. *Acta Polytechnica Hungarica*, 6(3), 123-138.
- Tang, S. Y. F., Wong, A. K. Y., & Cheng, M. H. (2015). The preparation of highly motivated and professionally competent teachers in initial teacher education. *Journal of Education for Teaching*, 41(2), 128-144.
- Walker, R. J. (2008). *12 Characteristics of an effective teacher*. Lulu.
- Witcher, A., Onwuegbuzie, A. J., & Minor, L. C. (2001). Characteristics of effective teachers: Perceptions of preservice teachers. *Research in the Schools*, 8, 45-57.

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 30%

Author 2: 25%

Author 3: 25%

Author 4: 20%

Support and Thanks

We are grateful to the reviewers who provided invaluable feedback in the earlier versions of the manuscript.

Conflict Statement

There is no conflict of interest.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

“Kötü” Öğretmen Tasviri: Türk Öğretmen Adaylarının Deneyimleri Üzerine Bir Olgubilim Çalışması

Giriş

Öğrencinin nitelikli bir eğitim alarak eğitim sisteminden mezun olması ve donanımlı bir birey olması eğitimin ve okulların başarmaya çalıştığı toplumsal kalkınmanın sağlanmasında önemli bir faktördür. Bununla bağlantılı olarak Ekonomik İşbirliği ve Kalkınma Örgütü'nün (OECD, 2005) kapsamlı alanyazın incelemesi sonucunda öğretmen kalitesinin öğrenci başarısını etkileyen ikinci en önemli faktör olduğu belirtilmiştir. Benzer şekilde, öğretmen etkileri ile öğrenci öğrenmesi arasındaki olumlu ilişki alanyazında güçlü bir biçimde vurgulanmaktadır (Burroughs vd., 2019; Darling-Hammond, 2000; Hattie, 2009). Bu durum kaliteli öğretime ve öğretmenlere olan ihtiyacın altını çizmektedir.

“İyi/etkili” öğretmenlerin mesleki yeterlilikler alan ve pedagojik alan bilgisi başlıkları altında gruplandırılabilir. Araştırmacılar, “iyi/etkili” öğretmenlerin alan bilgisi başlığı altında konu ile ilgili yeterli bilgiye sahip olunması gerektiğini belirtmişlerdir (Fajet vd., 2005; Kaur, 2009; Smith & Yasukawa, 2017; Strikwerda-Brown vd., 2008; Witcher vd., 2001). Pedagojik alan bilgisi bağlamında ise araştırmacılar “iyi/etkili” öğretmenlerin çeşitli özelliklerini öne çıkarmışlardır; 1) öğrencilerin, onların ihtiyaçlarının ve farklılıklarının anlaşılması ve farkındalığının yanı sıra bu bilgilerin, içeriği öğrenciler için daha anlamlı ve alakalı hale getirmek için kullanılması (Murray, 2011; Raufelder vd., 2016; Smith ve Yasukawa, 2017; Walker, 2008) , 2) sınıf yönetimini sürdürebilmek (Raufelder vd., 2016; Smith ve Yasukawa, 2017; Stronge vd., 2011) ve 3) profesyonellik (Coe vd., 2014; Smith & Yasukawa, 2017).

“İyi/etkili” öğretmenlerin duyuşsal nitelikleri ise iki başlık altında toplanabilir; 1) Sabırlı, şefkatli ve adil olmak gibi karakter özellikleri (Darling-Hammond, 2000; Strikwerda-Brown vd., 2008; Walker, 2008) ve 2) öğrencilere saygı duymak, öğrencileri takdir etmek ve öğrencilerle olumlu ilişkiler kurmak gibi öğrencilere karşı tutumlarıdır (Fajet vd., 2005; Raufelder vd., 2016; Strikwerda-Brown vd., 2008). İlgili alanyazındaki bulguların karşılaştırılması ilginç bir gerçeği ortaya koymaktadır; öğrenciler genel

olarak öğretmenlerinin duyuşsal niteliklerine mesleki yeterliliklerinden daha fazla değer vermektedirler (Fajet vd., 2005; Raufelder vd., 2016; Smith & Yasukawa, 2017). Aslında, öğretmenlerin duyuşsal niteliklerinin (örneğin, öğrencilerle olumlu ilişkiler) daha yüksek öğrenci başarısına yol açtığına dair sınırlı istatistiksel kanıtlar da vardır (Stronge vd., 2011).

Bu çalışmanın sonuçları, önceki çalışmaların bulgularını doğrulamaya ve/veya sorgulamaya yardımcı olabilir, böylece araştırmacıların "iyi/kötü" öğretmenlere ilişkin alanyazının bütünsel bir resmine ulaşmalarına yardımcı olabilir. Ayrıca, "iyi" öğretmenler/öğretmenlik üzerine yapılan çalışmalardan farklı olarak, "kötü" öğretmen kavramının incelenmesi, hizmet öncesi ve/veya hizmet içi öğretmenlere, eğitim uygulamalarını geliştirme üzerine ve/veya öğretmen olma yolculuklarında kaçınılabilecekleri bir eylemler listesi sunabilir.

Yöntem

Öğretmen adaylarının (ÖA) "kötü" öğretmen/öğretme algılarını ortaya çıkarmak amacıyla olgubilim deseni (Cresswell, 2007) uygulanmıştır. Yazarlar, araştırmacı etkisini önlemek ve mümkün olduğu kadar çok katılımcıya ulaşmak amacıyla, verileri bir ev ödevi yoluyla toplamaya karar vermiştir. Bu niteliksel yaklaşım, katılımcıların öğretmenleriyle olan geçmiş deneyimlerine ilişkin deneyimlerini yorumlamamıza ve öğrenmeyi geciktirdiği/engellediği düşünülen nitelikleri/davranışları belirlememize olanak sağlamıştır.

Katılımcılar, Türkiye'de bulunan orta ölçekli bir üniversitede formasyon eğitimini tamamlayan 182 öğretmen adayından oluşmaktadır. Katılımcılar kolay örnekleme stratejisi izlenerek seçildiler ve hepsi baş araştırmacının öğrencileriydi. Katılımcıların 132'si kadın, 50'si erkekti. Yaşları ise 22 ile 35 arasında değişmektedir.

"Kötü" öğretmenlerin/öğretmenin genel resmini çizebilmek için mümkün olduğunca çok katılımcı araştırmaya dâhil edildi. Ev ödevi, özellikle karşılaştığımız sınırlamalar göz önüne alındığında (örneğin, çoğu katılımcının hafta sonları derslere katılmak için çeşitli şehirlerden üniversiteye seyahat etmesinden kaynaklanan zaman ve yer sınırlılıkları) dikkate alındığında uygun bir seçenek olarak ortaya çıkmıştır. Nitel veri toplama konusunda uzman meslektaşlarımıza danışılmış ve öneriler sonrası aşağıdaki açık üçlü soru ev ödevi olarak öğrencilere verilmiştir:

"Kötü öğretmenlerle ilgili deneyimleriniz nelerdir? Geçmişteki öğretmenlerinizin hangi davranışları/nitelikleri öğrenmenize engel oldu? Örnek verebilir misiniz?"

Toplanan verilerin analizinde Tematik Analiz kullanılmıştır (Braun & Clarke, 2006). Analiz için tematik analizin seçilmesinin nedenleri arasında; bu yöntemin büyük veri kümelerini yoğunlaştırma ve detaylı açıklama sunma yeteneği ve esnekliği gösterilebilir. Tematik analizin esnekliği, bu çalışmada hem tümevarım hem de tümdengelim yoluyla uygulanmasına olanak sağlamıştır. Bu anlamda alanyazın taramasından yola çıkılarak iki genel tema (mesleki yetersizlikler ve duyuşsal nitelikler) ve bunların alt temaları (ör: alan bilgisi ve karakter özellikleri) tümdengelimsel olarak oluşturulmuştur. Daha sonra veriler birinci ve ikinci yazarlar tarafından tümevarımsal olarak analiz edilerek (alt)kategoriler oluşturulmuştur.

Araştırmanın güvenilirliğini sağlamak için çeşitli stratejiler kullanılmıştır (Denzin & Lincoln, 2005). Öncelikle güvenilirlik açısından, dürüst ve doğru yanıtları teşvik etmek amacıyla, veri toplama öncesinde öğretmen adayları ile görüşmeler yapılmış ve verdikleri yanıtların "kötü"

öğretmen/öğretmenlik anlayışımızı geliştirmeye katkı sağlayacağı konusunda kendilerine bilgi verilmiştir. Bu ödev aynı zamanda katılımcıların yanıtlarını kendi zamanlarında ve rahat bir şekilde vermelerine de olanak tanımıştır.

Bulgular

Öğretmen adaylarının “kötü” öğretmen algılarına ilişkin toplanan verilerden ortaya çıkan tema ve kategoriler bu bölümde sunulmaktadır. Katılımcıların algıları genel olarak iki temaya ayrıldı; mesleki yetersizlikler ve duygusal nitelikler (bkz. Şekil 1). Sonuçlarla ilgili çarpıcı bir gerçek, verilerin ağırlıklı olarak duygusal nitelikler teması altında kodlanmış olması (252 kişiden n=181; %72) ve yalnızca 71 alıntının (%28) mesleki yeterlik/yetersizlikler altında sınıflandırılmış olmasıdır. Bu durum katılımcıların duygusal niteliklere verdikleri önemi göstermektedir. Ayrıca her bir kategori/temanın neyi temsil ettiğine ilişkin ayrıntılar ve örnek alıntılar Ek 2’de sunulmaktadır.

Mesleki yetersizlikler teması altında kodlanan verilerin çoğu pedagojik alan bilgisi (n=67), geri kalan kategoriler ise alan bilgisi (n=4) kapsamındadır. Pedagojik alan bilgisine ilişkin 67 kez kodlama yapılmıştır ve aşağıdaki alt kategoriler oluşturulmuştur; öğrencileri yeterince iyi tanımama (n=17), eleştirel düşünmeyi engelleme (n=17), öğrencileri pasifleştiren öğretim yaklaşımları izleme (n= 7), sınıf yönetiminde sorunlar (n=2) ve meslek dışı davranışlar (n= 24). Alan bilgisiyle ilgili olarak dört kez kodlama yapılmıştır. Bu kategoride yer alan dört kod, öğretmenlerin uzmanlık alanı olmayan dersleri vermelerinden kaynaklandığı anlaşılmıştır ve bu durum öğretmenlerin kendilerinden ziyade eğitim sistemindeki bir soruna işaret etmektedir (bkz. Ek 2).

Duyuşsal nitelikler teması kapsamında kodlanan 181 veri kodlama aşağıdaki alt kategorilerde işlenmiştir: öğretmenin karakter özellikleri (n= 16) ve öğretmenin öğrencilere yönelik tutumları (n= 165) olarak kategorize edilmiştir. Bu istatistikler, öğretmenlerinin onlara nasıl davrandığının öğrenciler için daha önemli olduğunu göstermektedir.

Tartışma ve Sonuç

Bu çalışmanın amacı, Türk öğretmen adaylarının öğrenmelerini olumsuz etkileyen “kötü” öğretmen nitelikleri/davranışları hakkındaki algılarına ilişkin bilgi toplamaktır. Verilerin dörtte birinden biraz fazlası mesleki yetersizlikler (ör: öğrencinin hazır bulunmuşluğunun dikkate alınmaması veya öğretim sırasında bireysel farklılıkların dikkate alınmaması) teması kapsamında kodlanmıştır. Mesleki yeterlikler “iyi/kötü” öğretmen/öğretmenliği araştıran çalışmalarda da vurgulanmıştır (Busler vd., 2017; Coe vd., 2014; Murray, 2011; Raufelder vd., 2016; Smith & Yasukawa, 2017; Stronge vd., 2011;Suplicz, 2009). Öğretmenlerin, öğrenci özelliklerini ve öğrenmeyi onlar için neyin kolaylaştırdığını veya zorlaştırdığını anlayarak öğrencilere içerik sunmalarına olanak tanıyan pedagojik alan bilgisine sahip olmadıkları sürece, öğrenme süreçlerinde öğrencilere başarılı bir şekilde rehberlik etmeleri beklenemez.

Ancak diğer taraftan verilerin neredeyse dörtte üçünün duygusal nitelikler (ör: öğretmenlerin baskıcı ve otoriter olması, öğrenciler arasında ayrımcılık yapması) teması altında kodlanması, bu temanın katılımcıların öğrenmesinde oynadığı önemli rolü göstermektedir. İlgili alanyazın göz önüne alındığında bu sonuç şaşırtıcı değildir. Önceki araştırmalar da öğrencilerin öğretmenlerinin karakter özelliklerine ve öğretmenlerinin onlara nasıl yaklaştığına daha fazla dikkat ettiklerini ortaya koymuştur (Busler vd., 2017; Fajet vd., 2005; Lupascu vd., 2014; Murray, 2011; Ng, 2015; Raufelder vd., 2016; Smith & Yasukawa, 2017; Strikwerda-Brown vd., 2018; Stronge vd., 2011). Bu çalışmanın ve ilgili alanyazınının

sonuçları, öğrencilerin sadece öğrenen olarak değil, aynı zamanda ilgiye ihtiyaç duyan, takdir edildiğini ve adil davranıldığını hissetmek isteyen bireyler olarak muamele görmek istediklerini göstermektedir. Katılımcıların belirli bir konu alanını öğrenme ve/veya derslere katılma motivasyonları, öğretmenleri tarafından küçümsediklerini, kırıldıklarını, ayrımcılığa uğradıklarını veya kötü muameleyle maruz kaldıklarını hissettiklerinde olumsuz etkilendiği görülmektedir. Bu durum ise öğrenme motivasyonu ve derse katılım öğrenci sonuçlarını etkilediğinden içerik öğrenme şanslarını azaltmış olabilir (Havik & Westergard, 2020; Orhan-Özen, 2017).

Tartışmaya değer bir diğer bulgu ise katılımcıların öğretmenlerinin işinden keyif almamalarını ve öğretmenlerin mesleki olmayan davranışlarını öğrenmelerini olumsuz etkileyen bir faktör olarak belirtmeleridir. Bununla bağlantılı olarak ilgili araştırmalar motivasyon ve profesyonelliğin eğitimin kalitesine katkıda bulunan önemli faktörler olduğunu vurgulamıştır (Korkmazgil & Seferoğlu, 2021; Tang vd., 2014). Aslında nicel araştırmalar, öğrencilerin öğretmenlerinin öğretme coşkusuna ilişkin algılarının, öğrenme motivasyonlarına ve ustalık hedefi yönelimlerini geliştirmeye katkıda bulunduğunu da desteklemektedir (Lazardies vd.,2018). Bu durum, öğretmen adaylarının bilişsel olmayan özelliklerinin (öğretme motivasyonu gibi) işe alım kriterlerinin bir parçası olarak dikkate alınması ve/veya öğretmenlere yönelik mesleki standartların oluşturulması açısından bir başka destekleyici nokta olarak değerlendirilebilir.

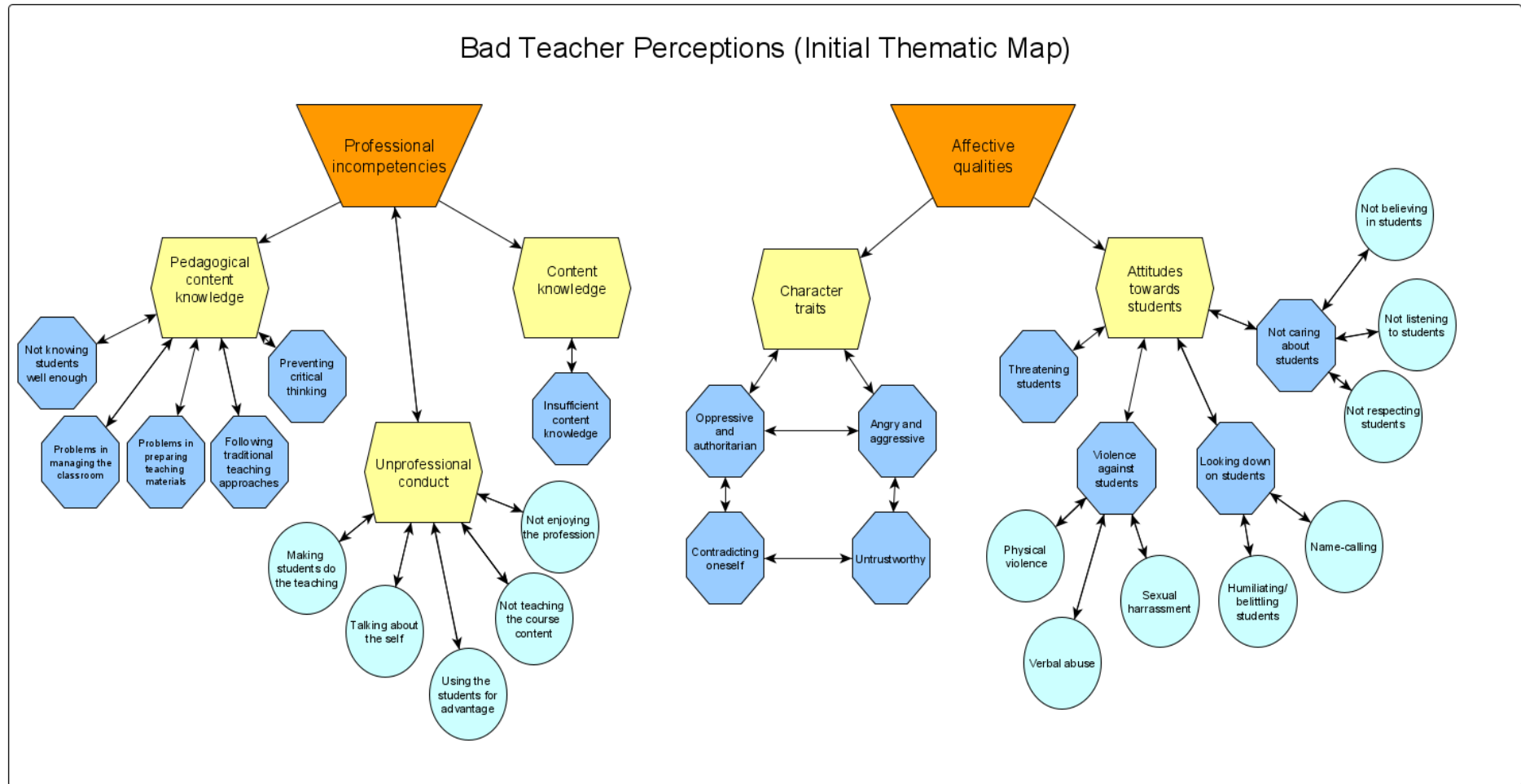
Öneriler

Bu bulgulara dayanarak aşağıdaki önerilerde bulunulmuştur:

- 1) Öğretmenler ve öğretmen eğitimcileri, öğrencilerin öğretmen-öğrenci ilişkilerine ve uyum oluşturmaya verdikleri önem konusunda bilinçlendirilmelidir;
- 2) “Kötü” öğretimle ilişkili olduğu belirlenen faktörler, öğretmenlerin kaçınması gereken eylemler listesi olarak değerlendirilebilir;
- 3) Türkiye ve diğer ülkelerdeki eğitim yetkilileri, bilişsel olmayan nitelikleri öğretmenlere yönelik standartlara ve/veya öğretmenlik mesleğine giriş kriterlerine ve/veya öğretmen yetiştirme programlarına entegre etmeyi düşünmelidir.

Bu çalışmanın bilgiye katkısı, yeni bir bağlamda (Türkiye) “kötü” öğretmenler/öğretme konusunda fikir vermesi ve çalışmanın sonuçlarının, “kötü” öğretmenlere ilişkin daha önceki örnek olay incelemelerinin bulgularını desteklemesi ve dolayısıyla mevcut ve geçmiş araştırmaların geçerliliği ve güvenilirliğini arttırmasıdır. Ancak daha da önemlisi, bu çalışma öğrencilerin öğretmenlere yönelik algılarının önemini ve bu algıların onların öğrenme süreçlerini nasıl etkileyebileceğini vurgulamaktadır. Bu, öğrencilerden geri bildirim almanın öğretmenlere kendi uygulamalarını geliştirme konusunda daha fazla fırsat sağlayabileceği fikrini desteklemektedir (Eriksen vd., 2020).

Appendix 1.



Appendix 2.

Quotations supporting the interpretations from the data

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
Professional (in)competencies	Not knowing students well enough	Not paying attention to student readiness/ skill levels/ needs (n= 12)	Data extracts which indicated students perceived their teachers to not consider and/or pay attention to student characteristics (i.e. individual differences), readiness levels, or needs during teaching/learning processes were coded in this category.	<p>P77- For example, I have witnessed and experienced that our teachers did not teach the lessons at a level that we could understand, they did not empathize with us, they did not take students' readiness levels into account [...] they loaded us with theories without giving us a chance to practice it and these conditions have decreased our motivation to learn.</p> <p>P90- In year one, there was a male student who had difficulty standing still, tore other students' hair and hit them, and did not listen to the lessons. He had encopresis. [...] Rather than trying to teach him or attempting to change his behaviour, [the teacher] insulted him. [The teacher] did not attempt to win him over. I am getting sad as I am writing about this. Labelling a student without doing any research or trying to understand him, or exerting an inhuman behaviour without understanding what is suitable to his level of perception was not a behaviour fitting a teacher.</p> <p>P175- [Teachers] were supposed to pay more attention to lazy and unsuccessful students, get them to participate more in classes, and establish dialogue with them, but they [the less successful students] were the ignored party [in the classroom].</p>
		Not being able to guide students (n= 5)	Data extracts which indicated that students perceived their teachers to be not successful in guiding them towards a future career/study area based on their skills and abilities were coded in this category.	<p>P17- But, throughout my school life, my teachers did not guide me in selecting a profession. This was a big drawback for me during my education.</p> <p>P97- None of our teachers used expressions such as: 'You are more successful in this area; you should try to continue [your education] in that field and you should... or we should try to make up for the areas [of knowledge] you are lacking in'. Now we are aiming to provide our [future] students with better opportunities by using such sentences.</p> <p>P109- But, in our time, services such as counselling, professional guidance, or guidance towards exams were not present. Therefore, I believe we were not appreciated enough and we have lost opportunities. Those who could not afford private tuition entered the OKS [test for student selections into high schools] as if it was just a regular test. Nobody told us about the importance of it.</p>
	Preventing critical thinking	Following a dogmatic approach (n= 8)	Data extracts which indicated that students perceived their teachers to make students accept what s/he taught without	<p>P5- Therefore, in order to prepare for that exam that had "vital" importance, we used to start learning how to become a slave of the [education] system based on rote learning as young as eight/nine years old, three years earlier than it is now. We were confined to test books at an age when a child really wanted to play games.</p>

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
			paying attention to evidence or opinions, and/or to teach in a mechanical way encouraging rote learning/memorization were coded in this category.	<p>P97- Throughout our school life, our teachers tried to mould us to become like them, they did not attempt to utilize our creativity and we have gotten stuck in a mechanized education system.</p> <p>P142- I believe our teachers took away our ability to think critically and independently. In my view, the dominance of a dogmatic approach is the result of both the education system and educators who are not courageous enough to digress from it.</p>
		Preventing students from asking questions/making queries (n= 7)	Data extracts in which students reported they were not allowed to and/or prevented from asking questions and/or making queries during teaching/learning processes were coded in this category.	<p>P16- Sometimes, I avoid asking what the problems are. Only if I could talk about the questions and problems I have, maybe then, all problems and misunderstandings will be sorted out. However, since the questions to be asked to overcome this problem were not present [cannot be asked], then there were no answers to receive. [...] The teachers who came to the class would only lecture us and go, and they would always have the tendency to shut us down.</p> <p>P75- I can say that our teachers did not attempt to encourage us to ask questions or allow us to make the queries we had in our minds. And I witnessed this causing us to gradually become introverted and experience trust issues with ourselves as well as the teachers.</p> <p>P129- Most of my teachers were against being asked questions during the lesson, maybe they were afraid of not being able to answer questions, but [because of that approach] we could not understand many concepts and, rather than learning them with practice, <i>we only recited enough of them to allow us pass the tests</i>. [The <i>italic</i> part of the extract has also been coded in the category of <i>following a dogmatic approach</i>]</p>
		Preventing the sharing of ideas (n= 2)	Data extracts in which students reported they were not allowed to and/or were prevented from talking to each other to exchange ideas during teaching/learning processes were coded in this category.	<p>P7- For example, in the Imam Hatip [Religious Vocational] School, it was forbidden for us to speak to the opposite gender even though we were all present in the same environment. [...] Now, I realize that I cannot explain myself clearly when talking to men. They prevented us from thinking and speaking freely. Now, whenever I am about to say something with regards to an issue, I start worrying whether what I say may be misunderstood. I think about this even now whilst writing this homework.</p> <p>P18- After that incident [...], I realized that I am not able to express my thoughts and ideas freely in crowded environments and the classroom; I was either afraid of making mistakes or abstained [from speaking].</p>

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)	
	Following teaching approaches that render students passive	(n= 7)	Data extracts which indicated that students were passive recipients of knowledge during teaching/learning processes were coded in this sub-theme.	<p>P80- As soon as the class started, the teacher would start lecturing and continue to do so using the same tone of voice till the school bell rang. As expected from a hardworking student, I used to sit at the very front of the classroom. [However] No matter how hard I tried to follow the lesson, my eyes would start closing.</p> <p>P151- During secondary school years, I had a science teacher who would lecture us as if s/he was reading a novel and then s/he would finish the course.</p> <p>P159- [Referring to an activity where the teacher dictated students to take notes]. For me, this was not any different than being a clerk. Students were not given a chance to think for themselves and evaluate which parts are important for taking notes. I have frequently experienced the negative effects of this during university. You listen to a lecture but cannot decide which parts were important.</p>	
	Problems in managing the classroom	(n= 2)	Data extracts which indicated that students perceived their teachers to be not able to manage and/or control the students in the classroom were coded in this sub-theme.	<p>P80- One day when [the teacher] could not control the classroom, a fight broke out among students. Male students from two different classes got into a clash. We all tried to separate them, but we were frightened when one of the students took out a knife from his pocket. Our teacher was also scared and started crying. S/he ran out of the classroom and locked us in. She went and called the principal. [...] Then, [the principal] got the hold of the student who had a knife and took it away from him.</p> <p>P167- I was disheartened from physics classes which I loved a lot because the physics teacher could not teach the class and was not able to control the students.</p>	
	Unprofessional conduct	Getting students to prepare for and present lessons (n= 2)		Data extracts in which students reported that their teachers assigned the task of presenting lesson content to learners were coded in this category.	<p>P129- ...we also had teachers who wanted us to present the content. They would assign a topic to everyone, ask them to get prepared [to teach it] and then they [the teachers] would sit in a corner and listen to the presenter just like us, and that was it. Whether we learned it [the topic] or whether we learned it correctly was a mystery and, of course, in the end, that topic would be considered as covered and the lesson would be over.</p> <p>P181- [That teacher] would get students to present the lesson content in every lesson s/he taught. [...] S/he would give a plus (+) to the student who presented, but when it was time for exams, nobody would be able to score high.</p>
		Not enjoying the profession (n= 3)		Data extracts in which students did not perceive their teachers to enjoy their profession and/or do it as a means of living	<p>144- I should not forget to mention my mathematics and literature course teachers who taught me what sort of a teacher I should not become, a teacher who does not like his/her profession.</p> <p>P164- . I think the reason for that is because they [the teachers] taught for 'living' not for 'development'. I still believe that most of the teachers have the licence to teach but not the skill. And our country will continue to lose so long as we do not assign this job to those who are competent.</p>

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
			were coded in this category.	P166- There are such teachers who consider the profession as a means of living and who just do the teaching and leave the classroom instead of being patient and making an effort, they are ready to explode like a bomb [indicating anger] instead of showing love and affection. Unfortunately, I met such teachers during my whole education life.
		Not teaching the course content (n= 11)	Data extracts which indicated that students perceived their teachers to not undertake teaching or undertaking it for a limited period of a lesson were coded in this category.	<p>P64- Since our teacher was the wife of an MP candidate, we spent most of the time playing and doing nothing in year one and year two. Our teacher would be on leave every 15 days and would assign a year five student to control us and keep us in the classroom.</p> <p>95- During high school, my class was very crowded and noisy. The teacher used to tell us that s/he would not teach us unless we became quiet. S/he would come to the class, wait, and, when the bell rang, leave without teaching anything. I even had a teacher who slept during the lesson; s/he was quite an old teacher.</p> <p>P101-This teacher would play lottery in the class rather than teaching us content. S/he would write numbers into small pieces of paper, fold them, and ask us to choose from those pieces. Since we were children, we felt that it was a game and we enjoyed it. Everyone was eager to be able to select a piece, but s/he would get angry at us when s/he could not get the expected result from the numbers we selected.</p>
		Taking advantage of students (n= 5)	Data extracts in which students reported that teachers, directly or indirectly, tasked students with duties to provision their personal needs were coded in this category.	<p>P113- [That teacher] would get students to go to the market to buy things such as fruit during the lesson. I believe that I could not receive good tuition because of that teacher and [therefore] my base education in primary school was not strong.</p> <p>P132- In a handicraft lesson, [the teacher] asked us to knit a towel edging, of course, I got help from my mother but still did it myself. To my surprise, [the teacher] was investing in his/her child's wedding [implying that the teacher collected the products from students and took them home]. Other students' mothers brought in very elegant designs. At the end of the academic calendar, our results were announced, my colleagues who had worse scores than me were able to receive certificates of achievement because of the presents [referring to the products made in the handicraft lessons], and cookies and pastries that they got for the teacher.</p> <p>P165- [The teacher] often asked us for things (i.e. clothes, cookies). Because of my teacher, primary school was a nightmare for me.</p>

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
		Talking about the self (n= 3)	Data extracts in which students reported that their teachers talked about matters relating to their personal lives during teaching/learning processes were coded in this category.	<p>P145- When you [the teacher] are in front of your students, you drop all your other identities, and you are only a teacher at that moment. Other identities you may have should only contribute towards benefitting your teaching. Otherwise, you may negatively affect those who are in the pursuit of becoming self-aware and who want to learn from you. My secondary school art teacher was someone like that. She/he used to narrate his/her life to us at such an extent that we would also feel the problems she/he experienced.</p> <p>P147- We had teachers who asked about clusters in exams, but talked about their lives in the classroom.</p> <p>P151- In the traffic lesson, our teacher would often talk about his military service memories, then, laugh at it by himself, and ask us to tell him our fathers' military service memories, it was like a nightmare.</p>
Content knowledge related factors	Insufficient content knowledge	(n= 4)	Data extracts in which students reported that certain subjects were taught by teachers who were not subject matter experts in that particular area were coded in this sub-theme.	<p>P97- Whilst receiving primary education in a small town, we could not learn mathematics, one of the foundation courses that affects our lives as well as exams. The teacher who taught mathematics was not even a mathematics teacher; s/he was specialized in a different subject.</p> <p>P132- I had an English [in primary school] teacher whom I loved very much. S/he was [later on] appointed to another school and left. [...] The religion teacher started coming to English classes. Rather than teaching us English, s/he started getting us to recite sections of the Holy Quran.</p> <p>P151- The physical education teacher taught us geometry, he used to forget about the formulas and ask us [to remind him].</p>
Character traits	Being oppressive and authoritarian	(n= 7)	Data extracts which indicated that students perceived their teachers to be oppressive and authoritarian were coded in this sub-theme.	<p>P17- My teachers who displayed negative behaviours had the perception that they were superior [to us] and felt that they had to be in control. They always expected obedience from the students.</p> <p>P22- I was a primary school student and, during that period, there used to be more crowded classes. Teachers used to practice stricter methods and strategies to establish their authority in the classroom. I could not learn Turkish at all at that time since I was afraid of our Turkish teacher who exaggerated this situation and considered himself/herself as the only leader of the classroom and controlled the classroom with fear.</p> <p>P102- In secondary school, my English teacher dampened my spirit to learn a [foreign] language because of his/her teaching style that is based on strictness, oppression, and rote learning. [The <i>italic</i> part of the extract has also been coded in the <i>Following a dogmatic approach</i> category]</p>

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
	Being angry and aggressive	(n= 5)	Data extracts which indicated that students perceived their teachers to be angry or showing aggression towards students were coded in this sub-theme.	<p>P14- ... then another teacher came, [and] s/he was very angry, s/he used to frequently get angry and shout [...], this behaviour really disturbed me, I used to become nervous when s/he taught.</p> <p>P50- [The teacher] would act aggressively every time s/he came to the class and <i>after 10 minutes of lecturing, s/he would sit down [and do nothing] until the end of the lesson.</i> [The italic part of the extract has also been coded in the <i>Not teaching the course content</i>]</p> <p>P110- Let me start with my primary school years, unfortunately, I never really got to like my primary school teacher. She was a cold and angry woman; <i>she used to beat us with a ruler</i> as a punishment when we got noisy. [The italic part of the extract has also been coded in the <i>Physical abuse</i> category]</p>
	Being untrustworthy	(n= 2)	Data extracts in which students perceived their teachers to be not trustworthy and/or could not keep a secret were coded in this sub-theme.	<p>P111- As for my primary school teacher, [...] I shared my family problems, which my parents advised me not to, with my teacher since I could not carry [the burden of] it due to my age and I asked for help; however, the fact that my parents learned about it [that I talked to my teacher about the problems] has, once again, caused my trust in my teachers to decrease.</p> <p>P8- Another issue was that our teachers were indiscreet. I would not consider myself as someone who shares emotional [problems]. Nevertheless, I forced myself and shared 3 to 5 of the hardships I had with the teacher, but then I realized that the things I told him/her did not stay between us. [...] Why would a teacher do that? After that, I realized that not only I am suffering from a problem, but I also have to deal with the problems caused by sharing my problem. [...] [Afterwards] I started keeping things to myself and trying to solve them by myself.</p>
	Contradicting oneself	(n= 2)	Data extracts in which students perceived that there was a contradiction between what their teachers say and what they [the teachers] do were coded in this sub-theme.	<p>P53- Our teachers often advise us to ask questions if there are any points that we have not understood and they continuously remind us that we can ask questions and that they would answer [our questions] and re-explain the content over and over if necessary. Then, when a student follows this advice and says: 'Teacher! I did not understand that', the teacher starts shouting: 'Dear, what is there not to understand, I am spending all my energy and voice, use your mind a little, will you?' After such an incident, students stop listening to such advice. I have personally experienced this.</p> <p>P71- For example, the fact that a teacher who emphasized the harm of smoking cigarettes would smoke in the school yard during the breaks has taught me that I should transfer my words [arguments] into practice via the way I behave.</p>
Attitudes towards students	Abuse	Verbal abuse (n= 61)	Belittling: Data extracts indicating that students perceived what their teachers said/did to be making them seem	<p><i>Belittling students</i></p> <p>P2- The most important of all, I left my self-confidence back on the desk [indicating the loss of self-confidence]. How? Because of our teachers' attitudes that belittled us and statements such as: "You are a lost case" [...]</p>

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
			<p>little or less were coded in this category. (n= 7)</p> <p>Offending: Data extracts in which students reported that they felt hurt, upset, humiliated, ashamed and/or embarrassed by what their teachers said or did were coded in this category. (n= 32)</p> <p>Shouting: Data extracts in which students reported that their teachers shouted at them were coded in this category. (n= 9)</p> <p>Threatening: Data extracts in which students reported that their teachers implicitly and/or explicitly threatened them (i.e. with giving low marks, harming the students) were coded in this category. (n =13)</p>	<p>P68- I was in the fourth grade, we were in a mathematics class and I was not able to understand a topic that the teacher explained. I raised my hand and asked the teacher to repeat the explanation if possible. The teacher responded: ‘I would be surprised if you did [understand]’ then all students in the class laughed.</p> <p>P69- Some of our teachers used to say things that would damage our self-confidence. For example, they told us things like: “Besides, you will not be able to learn it, but let me teach, at the end of the day, I am getting paid for it”.</p> <p><i>Offending students</i></p> <p>P25- One day, nobody was listening to the teacher in the German lesson. The teacher told us that s/he would not get angry and asked us to give our honest opinion about why we did not listen to him/her. And I asked for permission to speak and communicated the shared idea of the class to him/her. I told him/her that the lesson was not related to [covered in] the YGS [university entrance exam] to be held at the end of the academic year and that there were more important lessons on which we focused. After those words, the German teacher offended me in front of the whole class.</p> <p>P30- Even in the smallest incident in which I was involved, our classroom teacher [...] would humiliate me in front of the whole class. I still remember the cliché statements s/he used: “You are the son/daughter of a teacher; you have to set an example for your friends! If you do it this way, what would not your friends do? [indicating they would do anything]”</p> <p>P40- Our teacher asked us to write a composition and then read them. S/he did not like my composition and offended me by shouting: “Look at his/her composition!” [indicating disappointment] and walking in the class and showing my paper to others. After that day, I have abstained from doing things, writing in the classroom, or asking for permission to speak, and that continued throughout my education life. My teacher broke my confidence [in myself], and I could not get over this.</p> <p><i>Shouting at students</i></p> <p>P28- When a mistake was made, [the teacher] would shout or show the tendency to use <i>violence such as slapping</i>, and this can leave unforgettable memories in one’s unconsciousness. [The <i>italic</i> part of the extract has also been coded in the <i>Physical abuse</i> category]</p> <p>P54- ... unfortunately, I was one minute late to the class because I was praying, and [the teacher] shouted at me in front of the whole class in such a way that I would never forget in my life.</p>

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
				<p>P137- The fact that my teacher scolded me and shouted at me in front of the whole class because I misunderstood the homework and got prepared for the wrong homework has completely erased my self-confidence.</p> <p><i>Threatening students</i></p> <p>P8- [Referring to a teacher's action] Of course, if we had mentioned it to our families, [then] the teacher would have played merry hell with us. We kept quiet since we were afraid of it.</p> <p>P73- During the class, my friend sitting next to me dropped his tasbih, but he was not using it [...] Then the teacher took his tasbih, threw it at his face and said: 'No matter how good you can speak English, even if you are the best in Turkey, you will not be able to pass this lesson'.</p> <p>P81- [The teacher] used to <i>hit students with the stove skewer</i> and threaten students that s/he would get them to step on a heated wood stove unless they [other students] listened to [their teacher]. [The <i>italic</i> part of the extract has also been coded in the <i>Physical abuse</i> category]</p>
		Physical abuse (n= 52)	Data extracts in which students reported that they were slapped, hit with objects, beaten, or given physical harm/discomfort by their teachers were coded in this category.	<p>P20- Mr Aziz, our mathematics teacher, used to randomly select students and ask them about the multiplication table. If he could not get an answer or if he got a wrong answer, he would slap [the student].</p> <p>P67- For example, I had a teacher who hit my head with a pen just because I could not answer a question...</p> <p>P159- Let's move on to the worst; beating. Probably, it is the worst thing that can happen to a student [...] The direness of the situation is clear when you consider the psychology of a student who got beaten. How positive could perceptions of students be of school if they had been beaten in front of the whole class? <u>No student deserves to be beaten no matter what they have done...</u></p>
		Sexual harassment (n= 2)	Data extracts indicating that students perceived their teachers to be sexually harassing/assaulting were coded in this category.	<p>P10- Although it hurts to talk about the bitter truth, I do not mind [telling about] it if it would increase awareness so that others would not need to experience the same things. During year five, <i>we had an aggressive teacher</i>; he had qualities such as sexually harassing female students or beating students, in other words, qualities that an educator should not possess. [The <i>italic</i> part of the extract has also been coded in the <i>Being angry and aggressive</i> category]</p> <p>P58- Our male English teacher in high school used to hug female students, but this was not a compassionate hug like a father. [...] One day, my friend sitting next to me was absent. [...] In that lesson, the teacher touched my hair while passing by and then after going around, he came back and sat next to me. While he was trying to put his arm around me for a hug, I acted quickly</p>

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
				and moved. I told him: 'Never do that again! I am not like other students; it will not end well for you'. His reaction was an ugly smile.
	Discrimination among students	Discrimination among students in general (n= 5)	Data extracts in which students reported that their teachers discriminated among students without specifics to the aspect of discrimination were coded in this category.	<p>P51- ... but this new teacher, in my view, was harsher and someone who discriminated [among students] in the classroom. Therefore, it would not be wrong to say that I did not like him.</p> <p>P66- [My primary school teacher] taught me the basics and I am grateful to him/her for that, but I also have small complaints about him/her; [...] c) to openly discriminate among students [...]</p> <p>P76- The fact that one of our teachers in high school discriminated among students caused me to lose interest in his/her classes and stop liking him/her.</p>
		Discrimination based on family income levels (n= 9)	Data extracts in which students perceived that they were discriminated because of their families' socio-economic levels were coded in this category.	<p>P88- Perhaps because their families were better off financially and their parents were more attentive, some of our friends had shinier hair clips, shoes, and uniforms, and during teaching, those students would receive a more special attention from the teacher.</p> <p>P128-that teacher ignored us, paid more attention to a certain group of students, and, each time, gave responsibilities to students in that [other] group. The teacher behaved that way not because those students were cleverer or skilled, but because their families' income levels were higher.</p> <p>P150- Furthermore, some teachers would discriminate [among students] based on [students'] financial situation. Those days, we were not good [not stable financially], I could not approach the teachers because my school uniform was old. This has always caused me to be shy and timid.</p>
		Discrimination based on success (n= 9)	Data extracts in which students perceived that they were discriminated because of their level of academic success in the classroom were coded in this category.	<p>P89- I was seven years old and, like everyone, I started school with enthusiasm. It had not been even one month since the start of the school when the teacher split the class into two; hardworking and lazy students. [The teacher] made hardworking students read spelling cards and write on the board, but the teacher never paid attention to us.</p> <p>P47- Teacher Ahmet entered the class with a sourpuss face [...] In the question-answer session, rather than being attentive towards everyone, he only focused on successful students.</p> <p>P52- My mathematics teacher can be one of the reasons of this, s/he would discriminate [among students] to such an extent that s/he would tell unsuccessful students to go to one side [of the class] and successful ones to another.</p>
		Discrimination based on gender (n= 2)	Data extracts in which students perceived that they were	P56- [As for] my secondary school teachers' discrimination in the classroom, s/he scolded female students when they asked questions, but, unlike the way females were treated, [the teacher] responded rather happily to male students even if they said something uncalled-for.

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
			discriminated because of their gender were coded in this category.	P135- Out teacher was an educator with a strong sense of feminism and I have witnessed this situation to negatively affect male students in classroom environment. [...] To talk on my own behalf, our teacher's feminist views and character created a feeling that I am a nobody and this decreased my interest in classes to the minimum.
	Not caring about students	(n= 8)	Data extracts in which students perceived that there were not cared for and/or paid attention to by their teachers were coded in this sub-theme.	<p>P82- [Referring to being transferred to another school] I was like a fish out of water, I was looking around with blank eyes as if I was lost in that huge school... I am thinking about it, if I were in the teacher's shoes, would I be so disinterested in... Or let me rephrase it, would not I be more attentive of my student who needed attention? Of course, I would. If I had received that attention and care, maybe, I would have become self-confident, been able to more quickly raise my hand [to answer] when my teachers asked a question.</p> <p>P164- During that period [primary school years], a child expects to receive attention, love, and affection. Because it is the first time children leave their families and try to adapt to a new environment. I always expected to receive those from my teacher, but that did not happen. The teacher did not care about the fact that my mother lost her eyesight, got divorced, or that my father was remarried. I do not remember [hearing] any words [from the teacher] indicating attention or love.</p> <p>P175- One of the mistakes that I have observed most teacher made, but which I only realized to be a mistake was that [teachers] did not care for unsuccessful students in classes and were excluding them.</p>

Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
	Mistreating students	(n= 9)	Data extracts in which students perceived that there were mistreated by their teachers and/or punished for something they did not do were coded in this sub-theme.	<p>P12- ... [the teacher] was shouting at everyone to keep quiet. Nevertheless, there were students who continued talking. Me? I was not even talking. In spite of this, however, <i>that teacher came towards me and slapped me in the face</i> saying: 'Why are you talking?'. I was so shocked that I could not even say that I was not the one talking [...]. I was not disrespectful and that should not have happened. [The <i>italic</i> part of the extract has also been coded in the <i>Physical abuse</i> category]</p> <p>P36- Teacher Dilek, one of the classroom teachers in our school, entered the class. She looked around and said: "You!" It was obvious that she made a random selection. I thought that there might be furniture to carry, so I said: "I can help, teacher!" She took me and one of my friends who was introvert to the deputy principal's room. Both of them [the teacher and the deputy principal] started shouting loudly, we were frightened; we had never experienced such a situation before. I asked my teacher about what was happening. S/he accused me of being a sleazebag and offending female students [...]. I was very ashamed. I was not even able to speak because I did not know how I could prove that I was innocent [...]. For the whole duration of a lesson, s/he kept stating that we can never become anyone [useful to] in the society and [...] that we were useless for the society using a high-pitched tone crumbling our self-confidence and opening scars that would never close. It took them several days to understand that we were not the ones involved in the case [about offending female students], and to atone for what they did, they only said that it was not us.</p> <p>P86- [Referring to an incident of misbehaviour] Afterwards, [the teacher] asked me to come to the blackboard and hit my hands with a stick 10 times without asking or <i>listening to what I had to say</i>. The fact that [the teacher] treated me that way really upset me, and whilst being subject to this mistreatment and getting punished, I defended myself saying that I was innocent; it was Kürşat who pushed me. I was really angry. The teacher called Kürşat and hit him five times. However, I was really demotivated because I experienced this kind of treatment when it was really Kürşat who was responsible and because my teacher judged me <i>without even listening to me</i>. [The <i>italic</i> parts of the extract has also been coded in the <i>Not listening to students</i> category]</p>


Theme	Sub-theme	Category	Category explanation	Data extract (quotation)
	Not listening to students	(n= 8)	Data extracts in which students perceived that there were not listened to by their teachers were coded in this sub-theme.	<p>P14- When the [test] results were announced; <i>the teacher offended me by telling the whole class: 'Your friend [participant's name] is very hardworking; s/he even did the hardest question, [because] s/he cheated'</i>. Even though I tried to explain the situation [that I randomly selected the answer to the most difficult multiple-choice question], the teacher did not listen to or respect me. Next day, I decided to go to the administration and explain it to school managers, but -again- they did not listen. [The <i>italic</i> part of the extract has also been coded in the <i>Offending students</i> category]</p> <p>P106- [During the class], I needed to use the bathroom; I could not go to the bathroom during the break since we were playing games. In addition, since I drank some drinks, I really needed to pee. I raised my hand and told the teacher that I needed to use the bathroom, but my teacher scolded me and asked me to sit down. But I really needed to pee, I realised my hand again; however, the teacher scolded me more harshly this time. I was pushing myself really hard to hold my pee that I had tears all over my face, but I could not hold it any longer, I peed on the desk as the bell for the break rang.</p> <p>P120- Just before sitting down, I asked for a spare lead [for the clutch pencil] from my friend, but the class was noisy and my friend threw the lead box towards me. [The teacher] suddenly started shouting: "What is your name?" I told my name and [the teacher] added: "Do not you have manners? What is that move?" I answered: "Pardon me teacher, but what does it have to do with manners? I only asked for a spare lead from my friend". She did not even listen to me. <i>S/he asked me to tell my number, which I did. S/he asked for a pen and the class became quiet. S/he wrote zero [next to my name as a classroom performance grade] and showed it to the whole class adding: "Next time, you will be quiet in my class"</i>. [The <i>italic</i> part of the extract has also been coded in the <i>Mistreating students</i> category]</p>



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Study of Cognitive Structures of Professional Music Education Students Regarding the Concept of Aesthetics

 Peyruze Rana Çetinkaya, Dr., Corresponding Author
Dokuz Eylül University, Türkiye
peyruze-rana@hotmail.com
Orcid ID: 0000-0003-1585-1556

 Sevilay Kalay Meydan, Dr.
Ordu University, Türkiye
sevilaykalay@hotmail.com
0000-0002-3435-6123

Article Type: Research Article

Received Date: 14.04.2023

Accepted Date: 25.10.2023

Published Date: 30.10.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: 10.29329/tayjournal.2023.610.06

Citation: Çetinkaya, P. R., & Kalay Meydan, S. (2023). Study of cognitive structures of professional music education students regarding the concept of aesthetics. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 827-845.

Abstract

Music is related to aesthetics like any field of fine arts. Just as an understanding of art that lacks aesthetics and philosophy cannot be conceived, there is no general music education devoid of these. In this study, it was aimed to examine the cognitive structures of the aesthetics concept of the students studying professional music education. The participants were 88 students in the 1st, 2nd, 3rd and 4th grade at the Department of Music, Musicology and Turkish Music at a public university in Turkey in 2022-2023 academic year. It was followed the qualitative research method and used descriptive research design. A word association test (WAT) was used as data collection tool. In word association tests, the words that are associated with a series of keywords given to the research group are expected to be listed within the given time. In this context, participants were given the concept "aesthetics" and asked to write their associations and to make a related sentence about that concept. The content analysis was used in the analysis process. The results of the study showed that the majority of music students had misconceptions about the concept of aesthetics.

Keywords: Aesthetics, music students, cognitive structure, word association test.

Introduction

Although the approach of aesthetics as a science, its naming and examination through certain definitions date as recently as the 18th century, it can be said that aesthetic relations with objects, arguments that investigate and question beauty, date back as far as the history of reasoning. Since Baumgarten's definition of aesthetics as "the science of sensory knowledge" (Tunalı, 1998, p. 14) and naming it as a *science*, many contradictory and parallel ideas have been grounded: Contrary to the idea that aesthetics is a branch of science, there is the view that treats it as a philosophical area; on the other hand, some views keep aesthetics apart from the ideas dealing with the philosophy of art in the same frame. They offer proposals defining aesthetics over each of the elements they cover, and when all these contemplations are taken into consideration, it is realized that it is impossible to make a single definition of aesthetics. However, Ziss's (2016, p. 130) definition proposes the opportunity to understand aesthetics not only as the science of beauty but also in a broader framework: Aesthetics is "*the science of the artistic assimilation of reality, and above all the science of the laws of art and the theory of artistic creation*". Considering the emotive nature of art, it is understood that the knowledge gained from artistic experiences differs from that acquired through reason, and therefore, aesthetics is acknowledged as a means of perception through the senses (Aykut, 2018). Art does not only appeal to the mind through knowledge but also to the soul and self of the person (Soykan, 2020).

To fully understand aesthetics, first, it is useful to recognize the concepts in which it is integrated into existence. When we look at the concept of aesthetic value, which is one of them, or the concept of beauty with its more widespread use, aesthetic definitions that focus on beauty such as "science of beauty" and "philosophy of beauty" are frequently encountered in many sources written on aesthetics. It can be said that aesthetics is a body of thought that seeks beauty and aims to determine the criteria of beauty, to understand and perceive it. Nevertheless, as Tunalı (1998) stated, considering aesthetics only as a science that examines the value of beauty or as a pure philosophy of beauty narrows the realm of his research. Every artwork that has aesthetic value cannot be characterized by the term 'beautiful' used in everyday language; disturbing, tragic, frightening, funny, irritating, and even ugly value applies within aesthetic limits. The main reason for this is that the concept of aesthetic beauty has a different meaning from the beautiful used in daily language, and this difference lies in its power to convey the situations

and feelings that cannot be described as beauty to the receivers through the artwork and to evoke aesthetic pleasure.

Aesthetic experience, in which the subject's attention is completely focused on the aesthetic object, goes beyond time and space and is different from everyday experiences, arises from encounters with works of art (Fubini, 2014). The fundamental elements covered by aesthetic experience stand out as aesthetic object, aesthetic subject, the subject's aesthetic attitude towards the object, aesthetic pleasure in the subject, aesthetic taste, aesthetic feeling, and aesthetic judgment. Although the progress of music aesthetics, a specific area of aesthetics with well-founded propositions, dates to the post-19th century, reflections on music date back to Ancient Greece. Music aesthetics, as an effort to create and find beauty in the context of musical works, investigate the criteria of beauty and the perception of taste in music (Yıldırım & Koç, 2006). The aesthetic analysis process of music also requires blending different styles and period information. In this sense, it is important to develop musical manners (Torun, 2021).

Musical beauty, in its historical development from antiquity to the present, was first evaluated on a mathematical basis and then discussed with its pleasing and soulful aspects. It took on a religious identity for a while, then it was placed on a humanist basis, and the idea that it was spiritual and universal came to the fore. Later, it focused on social problems, and by getting rid of them, a new understanding of music, which was independent of emotion and time, developed in the last century. It is essential to have knowledge and sensitivity about the historical development of the understanding of beauty in music and the meanings attributed to music, and different ways of thinking about music, to approach a musical work in a holistic rather than a singular way while analyzing a musical work aesthetically. In addition to the development of the world we live in and the technique, the phenomenon of art and aesthetic evaluation become an inseparable part of human activities due to the development of human consciousness, emotion, and intuition (Doğan, 1975). To perceive and interpret art and to have a critical view, it is necessary to know aesthetic concepts and to comprehend their relations with each other. Considering the intertwining of art and aesthetics, individuals who choose to create, produce, interpret, and think about art as a profession are expected to have knowledge about aesthetics and the basic concepts of aesthetics and to adopt an aesthetic perspective. Like every field of fine arts, music is also related to aesthetics; music aesthetics explores the relations between composer, performer, and listener and the criteria of these relations regarding beauty. It is impossible to think of an understanding of art independent of aesthetics and philosophy, and there is no general music education without them. Soykan (2020), the influence of music on the individual and society has been known since ancient Chinese teachings and that aesthetics and music education form a basis for social-moral education, and adds: "A person who has the soul-body integrity created with mental education and by becoming able to perceive real musical works becomes free with the competence he has acquired in using his judgment on the one hand and in revealing his behavior style on the other hand". Besides, the aesthetic point of view goes beyond just an attitude towards art and works of art and becomes a way of life; its effect is observed in every aspect of our lives. In line with these reasons, it is essential to reveal the knowledge levels, approaches, and misconceptions of the aesthetic concepts of the artists, educators, and art scientist candidates who receive vocational art education.

Word association tests are a method that has been used widely and for a long time among the various methods used to evaluate the connections between the related concepts that have taken place in the long-term memories of people regarding a certain concept, and to reveal whether there are

sufficient and meaningful relationships between these concepts (Bahar & Özatlı, 2003, p. 75). It is based on the assumption that giving a stimulus word on the relevant topic and asking the respondent to freely associate the ideas that come to his mind with this word/concept provides access to the mental representations of the stimulus concept (Hovardas & Korfiatis, 2006).

In recent years, research has been carried out with participant groups in different fields and with different characteristics, that word association tests are used as the main data collection tool. Some of these can be listed as follows: Aykaç, Bilgin, and Bacakoğlu (2016), regarding the concepts related to drama; Ünal and Er (2017), regarding abstract concepts within the scope of social studies course; Gerekten (2018), on the concept of authority; Balbağ and Kaya (2019) and Çetin and Ünsal (2019) regarding the values; Atabek Yiğit and Balkan Kıyıcı (2019), regarding the concept of teacher; Alaca, Yaman, and Nas (2020), regarding concepts that represent certain life skills; Nacaroğlu and Kızkapan (2021), conducted studies on the concepts of knowledge and learning and Özaydın (2022), studies on the concept of a chorus. In terms of art and aesthetics, Karip (2019) and Özalp (2020) studied visual arts teacher candidates' perceptions of the concept of aesthetics. In the fields related to music, there is no study in this direction. In this principle, in this study, it was aimed to determine how the concept of aesthetics is perceived by the students who receive professional music education through the word association test, which is used to analyze the cognitive structures of important concepts in many different disciplines, and the answers to the following questions were sought:

1. What are the cognitive structures of the students receiving professional music education regarding the concept of aesthetics?
2. What are the misconceptions of the students who receive professional music education regarding the concept of aesthetics?

Method

This research, in which the qualitative method is followed, has a descriptive identity. In the description of qualitative research by Yıldırım and Şimşek (2021), there is an emphasis on trying to present perceptions and events in their natural conditions and realistically in line with research problems. In the qualitative tradition, which is based on an interpretive understanding, there is a concern not to establish cause and effect relationships, but to analyze facts and events with an in-depth and descriptive approach. It can be said that most of the social studies aim to describe situations and events (Rubin & Babbie, 2011). Descriptive research, which is frequently done in the field of education, aims to describe a phenomenon or situation in detail and tries to explain what entities, events, objects, institutions, and groups are (Büyüköztürk et al., 2009; Karasar, 2006). In this study, it is tried to reveal the "what" of the cognitive perceptions of the study group regarding the concept of aesthetics.

Study Group

The study group of the research consists of 88 students who continue their education in the 1st, 2nd, 3rd, and 4th grades of the Music, Musicology, and Turkish Music departments of a public university in Turkey in the 2022-2023 academic year and participate voluntarily in the study. In the selection of the sample, the purposive sampling method was followed. Purposive sampling is a nonrandom sampling technique and the researcher determines some criteria in line with the research purpose and selects the people or institutions that meet these criteria (Johnson & Christensen, 2019, p. 714). The specified criteria are that the sample group has not taken an aesthetic course and that professional music education departments with different programs and mission are located under the same roof.

Table 1. The profile of the participants

		N	%
Gender	F	39	44,31
	M	49	55,68
Grade	1	35	39,77
	2	15	17,04
	3	10	11,36
	4	28	31,81
Department	Music	9	10,22
	Musicology	39	44,31
	Turkish Music	40	45,45
Total		88	100

Data Collection Tool and Data Collection Process

Research data were collected with the Word Association Test (WAT). Word association, one of the strategies developed to provide and measure conceptual understanding, is used as an alternative assessment and evaluation technique. In addition, it is frequently used in the literature to detect misconceptions and reveal the cognitive structure of a certain concept. In this technique, the participants express other concepts that are associated with a given key concept related to the determined topic, mostly within 30 seconds. It is assumed that the sequential answers “reveal the connections between the concepts in the cognitive structure and show the semantic closeness. In line with semantic closeness, the closeness of two concepts to each other in semantic memory is an indication of the close relationship between them, and the answers to the concepts in this close relationship will be faster (Bahar et al., 2003).

The word association test used as a data collection tool consists of two stages. First, after the participants were provided with information about their department, class, and gender. In the first stage, they were then asked to write down an aesthetic key concept five times in a row, leaving the answer blank each time. After that, participants were given 30 seconds to write down five words that the key concept reminded them of. In the second stage, they were expected to write a sentence about what the key concept meant to them. This “relevant sentence” was considered necessary in terms of providing more detailed information about the participants' view of the concept of aesthetics. Because a 'related sentence' is typically more complex and higher-level than a single-word answer, various factors such as the scientific validity and potential misconceptions of the sentence can affect the evaluation process (Ercan, Taşdere, & Ercan, 2010).

What are the concepts you associate with “aesthetics”? Write down the first 5 concepts that come to your mind within a period of 30 seconds. Aesthetics: Aesthetics: Aesthetics: Aesthetics: Aesthetics:
What does the concept of “aesthetics” mean to you? A sample sentence related with aesthetics

Figure 1. A sample page of WAT

Data Analysis

The data obtained with the word association test were analyzed by the content analysis method. Content analysis is a research method that provides an objective tool to make inferences from written, oral, or visual data sources to define and measure certain situations. It is based on conceptualizing the

data in line with the meaning they contain and explaining the meaningful connections between these concepts through themes. It is more than a counting process and aims to interpret the results in terms of the context or the environment in which they are produced (Downe & Wamblot, 1992; Yıldırım & Şimşek, 2018). A concept is an abstract representation of an event, object, or action that the researcher deems significant in the data; it serves as a nomenclature. The purpose of this naming is to group events and phenomena according to their common or similar characteristics (Strauss & Corbin, 1998). These concepts lead the researcher to the themes, and through the themes, the phenomena can become more organized and understandable (Yıldırım & Şimşek, 2021). Microsoft Excel program was used to organize the data in the analysis process. First, the responses of 88 participants were listed and analyzed. Responses with missing concepts or no clear connection between the concepts and the sentence were considered invalid and excluded from the analysis. The valid responses were numbered and subsequently analyzed in detail. Prominent and repetitive concepts or words were identified and coded, and all words were listed alphabetically. Finally, a frequency table was created. In line with the number of repetitions of concepts/words, those that are used only once are not included in the next steps. The expressions that were repeated twice or more and that were valid were gathered under the categories/themes created in line with their similarities to each other. Finally, frequency tables related to the themes were created, and the findings were interpreted with sample sentences.

Validity and Reliability

To ensure the reliability of the research, two researchers independently matched concepts and categories. After the agreement and disagreement between the two encoders were determined numerically by comparing the category lists, the reliability calculation was made using Miles and Huberman's (1994) reliability formula [reliability = consensus / (consensus + disagreement) x 100]. The agreement rate between the two encoders was calculated as 89% [= 41 / (41+5) x 100] out of a total of 46 valid words.

Ethical Permits of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Ordu University Socai and Human Sciences Ethics Committee

Date of ethical review decision=27/10/2022

Ethics assessment document issue number=2022-206

Findings

In this part of the research, the analysis of the data obtained with the WAT is included. The frequency and percentage distributions of the concepts and categories that emerged because of the data analyzed using the content analysis method were evaluated.

A total of 24 answers, in which the same word was repeated more than once by the same person, were excluded from the research. When examining the answers of the 64 participants included in the

study, it was determined that 111 different concepts related to aesthetics were derived from their responses. Within the scope of the study, 66 words that were used only once out of the 111 words derived by the students were excluded. According to the content analysis, 45 words were collected under 4 different categories. These categories are the source of aesthetics has emerged as aesthetic qualifications and terms, aesthetic values, and misconceptions. The concepts in Table 2 are listed alphabetically with their frequency distributions.

Table 2. Words derived concerning the concept of aesthetics

Concepts	f	%	Concepts	f	%	Concepts	f	%
Abstract	1	0,4	Fragrance	1	0,4	Seda Sayan	2	0,8
Ajda Pekkan	2	0,8	Hairdresser	1	0,4	Self-confidence	1	0,4
Appearance	9	3,6	Harmony/			Sensation	1	0,4
Art	12	4,8	Harmonious	4	1,6	Size	1	0,4
Artificial	5	2	Human	2	0,8	Sky	1	0,4
Artistic	1	0,4	Intake	3	1,2	Smile	1	0,4
Attenuation	1	0,4	Landscape	2	0,8	Socrates	1	0,4
Attractive	1	0,4	Life	1	0,4	Song	1	0,4
Beautiful/			Light	1	0,4	Spirit	4	1,6
Beauty	51	20,4	Lip	5	2	Status	1	0,4
Binding	1	0,4	Literature	1	0,4	Stylish	1	0,4
Body	5	2	Love	3	1,2	Subjective	1	0,4
Botox	4	1,6	Luminous	1	0,4	Surgery	3	1,2
Bulent Ersoy	1	0,4	Makeup	1	0,4	Symmetric	2	0,8
Car	1	0,4	Masculinity	1	0,4	Symmetry	3	1,2
Care	4	1,6	Melody	1	0,4	Taste	3	1,2
Change	1	0,4	Music	2	0,8	Theory	1	0,4
Charm	2	0,8	Natural	3	1,2	Therapy	1	0,4
Chorus	1	0,4	Nature	3	1,2	Thought	2	0,8
Concrete	1	0,4	Neat	5	2	Tone	1	0,4
Constructivism	1	0,4	Nose	14	5,6	Turku	1	0,4
Cosmetics	2	0,8	Nuance	1	0,4	Unnatural	1	0,4
Creativity	2	0,8	Operation	6	2,4	Variation	1	0,4
Culture	1	0,4	Orchestra	1	0,4	Visual Arts	1	0,4
Dance	1	0,4	Order	4	1,6			
Demo	1	0,4	Ornament	1	0,4			
Design	1	0,4	Passion	1	0,4			
Desired	2	0,8	Patient	1	0,4			
Difference	1	0,4	Pattern	1	0,4			
Doctor	4	1,6	Perception	2	0,8			
Drawing	1	0,4	Perfect	2	0,8			
Dream	1	0,4	Philosophy	2	0,8			
Elegance	4	1,6	Physical appearance	1	0,4			
Embellishment	1	0,4	Physics	2	0,8			
Emotion	1	0,4	Piano	1	0,4			
Eye	2	0,8	Plastic	1	0,4			
Eyebrow	2	0,8	Pleasant	9	3,6			
Eye Pleasure	1	0,4	Point of view	3	1,2			
Face	2	0,8	Positive	1	0,4			
Fashion	1	0,4	Proportion	4	1,6			
Figure	1	0,4	Regulation	1	0,4			
Fineness	3	1,3	Relativity	1	0,4			
Flexibility	1	0,4	Required	1	0,4			
Formalism	1	0,4	Scene	1	0,4			
Format	1	0,4	Sculpture	3	1,2			
Total							250	100

According to Table 2, 111 different words in total, 250 words related to the concept of aesthetics, were derived by the participants. The expressions most frequently repeated by individuals receiving professional music education are beauty (f=51), nose (f=14), stage (f=12), appearance (f=9), pleasant (f=9), surgery (f=6), lip (f=5), neat (f=5), body (f=5), botox (f=4), harmony/harmonious (f=4), doctor (f=4), grace (f=4), order (f=4), care (f=4), proportion (f=4), spirit (f=4).

Table 3. Categories created in line with the concepts related to the concept of aesthetics

Categories	N	f	%
Aesthetic Qualifications and Terms	19	8	9,35
The source of aesthetics	31	9	15,27
Aesthetic Values	57	7	28,07
Misconceptions	96	22	47,29
Total	203	46	100

As can be seen in the Table 3 large part of the cognitive structures of the participants regarding the concept of aesthetics consists of the category of misconceptions (n=96) derived from 22 different words. These words constitute 47.29% of the total words derived and have the highest rate revealing the quality of the cognitive structures of the participants regarding the concept of aesthetics. The distribution of other cognitive structures into categories according to the frequency of use; it is the category of aesthetic values derived from 7 different words (n=57), the source of aesthetics from 9 different words (n=31) category, and the category of aesthetic qualifications and terms derived from 8 different words (n=19). The total number of frequencies was calculated as 46, as the concept of beauty was used in two different senses in the categories of aesthetic values and misconceptions.

Table 4. Distribution of words derived concerning the concept of aesthetics

Categories	Concepts	N	f	%
Aesthetic Terms and Qualifications	Elegance (3), Neat (3), Point of View (3), Charm (2), Taste (2), Creativity (2), Delicacy (2), Perception (2)	19	8	9,35
The Source of Aesthetics	Art (12), Nature (3), Sculpture (3), Love (3), Music (2), Philosophy (2), Human (2), Thought (2), Landscape (2), Beauty (36), Pleasant (7),	31	9	15,27
Aesthetic Values	Order (3), Symmetry (3), Harmony/Harmonious (3), Proportion (3), Perfect (2) Beautiful/Beauty (15), Nose (14), Appearance (9), Operation (6), Body (5), Artificial (5), Lip (5), Botox (4), Doctor (4),	57	7	28,07
Misconceptions	Care (4), Surgery (3), Symmetric (2), Smooth (2), Physics (2), Eye (2), Eyebrow (2), Face (2), Unnatural (2), Ajda Pekkan (2), Seda Sayan (2), Cosmetics (2), Desired (2)	96	22	47,29
Total		250	46	100

As a result of the analysis of the data obtained in Table 4 the category with the least word derived was the category of aesthetic qualifications and terms (f=8). 8 words were repeated 19 times in total. The words in this category have a share of 9.35% in other categories. The most repeated words were elegance (f=3), neat (f=3), and point of view (f=3). In addition, the words "charm, taste, creativity, delicacy, and perception" were also included as words produced under this category.

The source of aesthetics category (f=9) has a share of 15.27% among other categories. 9 words were repeated 31 times in total. The most repeated words in this category were art (f=12), nature (f=3),

sculpture (f=3), and love (f=3). In addition, the words "philosophy, human, thought, and landscape" are also included as words produced under this category.

The category of aesthetic values (f=7) represents 28.07% of the total categories. Seven words have been repeated a total of 57 times, with "beautiful/beauty" being the most frequently used (f=36) followed by "pleasant" (f=7). Additionally, this category includes words such as "order," "symmetry," "harmony/harmonious," "proportion," and "perfect".

If the category with the most words is derived, the category of misconceptions (22) has a share of 47.29% among other categories. Among the most repetitive words in this category, the word beauty/beautiful (f=15) was included in this category because it was also included in the category of aesthetic values, but because it was determined to represent a human-specific appearance. The words most frequently repeated by the participants were nose (f=14), appearance (f=9), operation (f=6), body (f=5), artificial (5), lip (f=5), botox (f=4), doctor (f=4), care (f=4). Again, in this category, the words "surgery, symmetrical, smooth, unnatural, physique, eye, eyebrow, face, Ajda Pekkan, Seda Sayan, cosmetics, and desired" were included.

Table 5. Sample sentences derived by participants in the concept of aesthetics

Categories	Sample Sentences
Aesthetic Qualification and Terms	<i>It is the sublime." (P89, 4th degree)</i> <i>"It is the personal development of perspective on the world." (P65, 4th degree)</i> <i>"To be naiver and more elegant. It is the reflection of that elegance people in the works one does." (P86, 4th degree)</i>
Source of Aesthetics	<i>"It is the beauty of nature." (P34, 2nd degree)</i> <i>"Appealing to the eye, ear, and mind; evoking art; these are the structures and concepts that are good for the soul." (P46, 1st degree)</i> <i>"It is the concept and science of artistic creativity, which is beautiful in art and life." (P55, 1st degree)</i> <i>"It is the beauty of art that is performed not only in the musical sense, but also, in every field." (P57, 1st degree)</i>
Aesthetic Values	<i>"Aesthetics for me is human thought." (P71, 3rd degree)</i> <i>"It is the harmony of all beauties in each other." (P3, 4th degree)</i> <i>"It is a beautiful concept that is pleasant when we look at it and listen to it." (P36, 2nd degree)</i> <i>"It is a regular and systematic beauty." (P58, 1st degree)</i> <i>"Aesthetics is a perspective that evaluates the concept of beauty without intellectual consciousness or intellectual consciousness." (P69, 4th degree)</i> <i>"It is perfection; the perfection of something." (P84, 4th degree)</i> <i>"Aesthetics is something that looks beautiful when understated." (P2, 3rd degree)</i>
Misconceptions	<i>"They are unnatural processes." (P20, 1st degree)</i> <i>"What a person does to feel good and beautiful." (P24, 2nd degree)</i> <i>"They are procedures applied with plastic surgery." (P30, 1st degree)</i> <i>"It is the correction of the limbs that are not liked or cause health problems." (P31, 1st degree)</i>

In Table 5 the related sentences formed by the individuals who receive vocational music education by associating them with the concept of aesthetics are given. Related sentences were classified in 4 different categories within the scope of the study. In the "Aesthetic Qualifications and Terms", "Source of Aesthetics" and "Aesthetic Values" categories, it is seen that the sentences formed by the participants regarding the concept of aesthetics are related to the philosophical existence of aesthetics, and in the "Misconceptions" category, aesthetics is associated with the surgical/medical aesthetic field.

Discussion and Conclusion

In line with the findings for the question, it was concluded that the cognitive structures of students who receive vocational music education regarding the concept of aesthetics are most strongly associated with the classification of 'aesthetic values,' specifically the concept of beautiful/beauty (f=36). When the relevant literature is examined, it is seen that the same findings have been reached in similar studies on the concept of aesthetics (Karip, 2019; Özalp, 2020; Istók et al., 2009). The concept of beauty has been at the center of aesthetic debates from the ancient age to the present. Aesthetic thinking, which started with the question "What is beautiful?", has evolved into different approaches and views, and aesthetics has become a multidimensional body of thoughts beyond questioning only what is beautiful. As Tunalı (1998) emphasizes, to consider aesthetics as a science or thought that examines only the beautiful is to limit the discussion area of aesthetics; because values such as ugly, tragic, elegant, and sublime, as well as beautiful, fall into the research field of aesthetics.

The concept of art (f=12), which is the second most frequently associated and classified under 'sources of aesthetics', is the main research area in which aesthetics is directly related and nourished. Artistic creation is the most obvious of the sources with which aesthetics is related, and aesthetic beauty, unlike the concept of beauty used in daily life, exists in the value of the artwork created by the artist and the emotion it conveys to the receivers (Doğan, 1975).

In addition, pleasant (f=9), another concept most associated with aesthetics, is one of the prominent concepts in the discussions focusing on the concept of beauty in aesthetics. According to Hartman (1996), pleasant is a feeling value that belongs to subjects, not objects, as a value related to beauty (as cited in Türker, 2011). Yet, aesthetic beauty differs from an everyday notion of beauty that is perceived only as "pleasant" or "pleasant to the eye"; in this sense, it also describes "not beautiful", frightening and disturbing things in daily language (Doğan, 1975).

When the expressions of *harmony/harmonious* (f=3), *symmetry* (f=3), *proportion* (f=3), and *order* (f=3), which are classified under 'aesthetic values', are considered holistically as interrelated concepts, other important expressions come to the fore. Since ancient times philosophers, it has been known that there are philosophers who consider art based on the material world, defend the objectivity of beauty, and therefore observe the features that reinforce harmony in the artwork such as symmetry and proportion. Looking at the history of aesthetics, it can be said that the materialist aesthetic theories, which raised beauty over concepts such as harmony, size, and proportion, from the Aristotelian understanding to the present, put forward an understanding of beauty through the external properties of objects and reduced beauty to a mathematical base (Ziss, 2016).

The most repeated expressions in the category of 'aesthetic terms and qualities' were the concepts of elegance (f=3) and sublime (f=3). Kagan (1982), he says, "There are some appearances that turn into beautiful in terms of their essence and for this, they become the subject of research for aesthetics." According to him, the elegant, as well as the sublime, attractive, dramatic concepts, are among these 'transforming' values. On the other hand, he states that the opposites of these concepts, such as the ugly, vulgar, and funny concepts, are among aesthetic values. In this direction, he argues that aesthetics is a science that investigates all the aesthetic values that exist in art, rather than just being a science of beauty. Kant, one of the most important philosophers in aesthetics, defines the sublime as that which evokes awe or reverence in size and degree. He resembles the sublime and the beauty in

some angles, but separates it from daily, usual emotions. The sublime covers the beauty, but transcends it (Tunali, 1998).

The second question of the research is, "What are the misconceptions of the students who receive vocational music education about the concept of aesthetics?" Findings for the question show that there are misconceptions about the concept of aesthetics among the participants in a significant amount (47.29%). Among these concepts, it is seen that the concepts of beautiful/beauty (f=15), nose (f=14), and appearance (f=9), which are determined to be used only in the same context with the external appearance of the person and the surgical operation, come to the fore. It may be expected that the concept of aesthetics is perceived in this way by people who do not have a professional interest or relationship with art or who are in younger age groups: Demirel (2018), in his study with children aged 9-12, concluded that although the participants associated the concept of aesthetics with beauty, this association generally included surgical intervention and physical appearance, and he commented that they could not "assimilate" aesthetics artistically. Similarly, Kılcan and Akbaba (2014) in their research with eighth-grade students, one of the findings they reached in line with the analysis of the metaphors developed regarding aesthetics and the analysis of the drawings, is that the students perceive aesthetics as a surgical intervention. Based on the answers given by the students in the interviews, the researchers interpreted that the negative effects of the media might have caused this result. Karip (2019), in his research conducted with visual arts teacher candidates, found that only 1.1% of the participants had some misconceptions in which they associate aesthetics with the medical aspect. An important criterion for the participants is that they have taken an aesthetics course in their undergraduate program. In his study, Seyhan (2020), in which he investigated the metaphorical perceptions of social studies teacher candidates regarding the concept of aesthetics and emphasized that aesthetic value is important in social studies learning, found that very few of the participants had misconceptions about aesthetics (operation and artificiality) and stated that the false perception was at a very low level. Based on this information, it is quite thought-provoking that in the present study, the majority of people who received professional music education at the undergraduate level have an aesthetic perception in this direction.

Although it is a common way of thinking to associate aesthetics with visual arts in the field of art, it is undeniable that music aesthetics is also a deep and multidimensional field of thinking. Awareness about aesthetic experience, aesthetic appreciation, aesthetic judgment, and attitude in music are important supporters for understanding music. In the research, it is seen that there is no relationship between the concepts such as experience, value, pleasure, judgment, subject, work/object, which constitute the field of existence of aesthetics, and the concept of aesthetics, therefore, these concepts are not included in the cognitive schemes of students regarding aesthetics. It is demanding to have knowledge and perception about aesthetics without being aware of the basic concepts of aesthetics. Aesthetic perception is a state of awareness, and without this awareness, it becomes difficult for people who pursue art as a profession to make positive contributions to their own aesthetic experience and understanding, as well as to the aesthetic life of their environment and ultimately, society.

In a study investigating music teacher candidates' perceptions of music aesthetics, it was found that participants focused on concepts such as aesthetic judgment, universality in music, aesthetic pleasure, aesthetic taste, harmony, beauty, and interpretation, and they had a certain perception of music aesthetics. In addition, pre-service teachers stated that there is a need for education to have an aesthetic understanding and to make comments. The researcher interpreted these results as a positive

contribution of the 'philosophy' course included in the curriculum during the study years and suggested that courses such as aesthetics and philosophy of art should also be included in an art education program in addition to philosophy courses (Şen, 2014). It should be noted that as of 2018, the compulsory philosophy course in the music teaching undergraduate program was abolished, and the philosophy of education course was added instead, with the 'art and aesthetics' course being included in the general culture elective course pool (Türkiye Higher Education Council, 2018).

Ralph A. Smith, one of the important figures in aesthetic education, suggests that to develop an advanced artistic perception, it is necessary not only to create and apply skills but also to have a mastery of aesthetic concepts and to approach them critically (Aykut, 2012). It can be argued that aesthetic education is a prerequisite for the formation and development of a refined artistic sense. Art and music education that emphasizes aesthetics is expected to have a positive impact on the level of appreciation, artistic perception, and sensitivity.

Recommendations

In line with the results of the research, the following suggestions can be made:

- Institutions offering vocational music education should include, as a compulsory or elective course according to current conditions, a philosophy or aesthetics course that focuses on basic aesthetic concepts, the development of aesthetic experience and taste, music aesthetics, and the aesthetic analysis of works of art, to increase aesthetic awareness in their undergraduate programs.
- Planning extracurricular studies and workshops that will provide students with aesthetic experience and critical approach opportunities, in addition to the inclusion of aesthetics in teaching within the scope of a course.
- Reviewing the possibilities of aesthetic analysis and experience in different fields of art, starting from the idea of having an aesthetic understanding not only in one field of art but also in all fields of life.
- Conducting similar studies with different participants in terms of age, class level, institution of education, and department of music education.
- It may be recommended to carry out similar studies by following different research designs and using different data collection tools.

References

- Atabek Yiğit, E., & Balkan Kıyıcı, F. (2019). Öğretmen adaylarının öğretmen algısı [Teacher candidates' perceptions about teacher]. *MSKU Journal of Education*, 6(1), 20-39.
- Aykaç, N., Bilgin, H., & Bacakoğlu, G. (2016). Kelime ilişkilendirme yoluyla öğrencilerin drama ile ilgili kavramlara ilişkin bilişsel yapılarının incelenmesi [Examination of students' cognitive structures regarding the concepts related to creative drama through word association]. *Creative Drama Journal*, 11(2), 29-46.
- Aykut, A. (2012). *Sanat eğitiminde estetik* [Aesthetics in art education]. Hayal Perest.
- Aykut, A. (2018). *Estetik paradigmlar ışığında sanat ve eğitimi* [Art and education in the light of aesthetic paradigms]. Pegem Akademi.
- Bahar, M., & Özatlı, N. S. (2003). Kelime iletişim test yöntemi ile lise 1. sınıf öğrencilerinin canlıların temel bileşenleri konusundaki bilişsel yapılarının araştırılması [Investigation of the cognitive structures of high school 1st year students on the basic components of living things with the word communication test method]. *Journal of Balıkesir University Institute of Science and Technology*, 5(2), 75-85.
- Balbağ, N. L., & Kaya, M. F. (2019). Fourth grade students' cognitive structures regarding "values": Application of the word association test. *Review of International Geographical Education Online*, 9(1), 193-208.
- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2009). *Bilimsel araştırma yöntemleri* [Scientific research methods] (4th ed.). Pegem Akademi.
- Çetin, A., & Ünsal, S. (2019). Öğretmen adaylarının değerlerle ilgili zihinsel yapıları [Mental structures of pre-service teachers regarding values]. *Mehmet Akif Ersoy University Journal of Education Faculty*, (49), 187-210.
- Demirel, İ. N. (2018). 9-12 Yaş çocukların estetik değer algılarının incelenmesi [Analysis of 9-12 years old children' aesthetic value perceptions]. *Inonu University Journal of the Faculty of Education*, 19(2), 312-327.
- Doğan, M. (1975). *100 Soruda estetik* [Aesthetics in 100 questions.]. Gerçek.
- Downe-Wambolt, B. (1992). Content analysis: method, applications and issues. *Health Care for Women International*, 13, 313-321.
- Ercan, F., Taşdere, A., & Ercan, N. (2010). Kelime ilişkilendirme testi aracılığıyla bilişsel yapının ve kavramsal değişimin gözlenmesi [Observation of cognitive structure and conceptual change through the word association test]. *Journal of Turkish Science Education*, 7(2), 136-154.
- Fubini, E. (2014). *Müzikte estetik* [Aesthetics in music]. Dost Kitabevi.
- Gereken, S. E. (2018). Müzik öğretmeni adaylarının 'makam' kavramına ilişkin bilişsel yapıları [Investigation of music teacher candidates' cognitive structures on the "maqam"]. *Kırıkkale University Journal of Social Sciences*, 8(2), 295-312.
- Hovardas, T., & Korfiatis, K. J. (2006). Word associations as a tool for assessing conceptual change in science education. *Learning and Instruction*, 16(5), 416-432.
- Istók, E., Brattico, E., Jacobsen, T., Krohn, K., Muller, M., & Tervaniemi, M. (2009). Aesthetic responses to music: A questionnaire study. *Musicae Scientiae*, 13, 183-206.
- Johnson, R. B., & Christensen, L. (2019). *Educational research: Quantitative, qualitative, and mixed approaches*. SAGE.
- Kagan, M. (1982). *Güzellik bilimi olarak estetik ve sanat* [Aesthetics and art as the science of beauty]. Altın Kitaplar.
- Karasar, N. (2006). *Bilimsel araştırma yöntemi* [Scientific research method]. Nobel.
- Karip, F. (2019). Görsel sanatlar öğretmen adaylarının estetik kavramına yönelik bilişsel ifadelerinin incelenmesi [Cognitive expression of visual arts preservice teachers related to aesthetics]. *Idil Journal of Art and Language*, 61, 1159-1167.
- Kılcan, B., & Akbaba, B. (2014). Sosyal bilgiler öğretim programında yer alan estetik değerine ilişkin öğrenci algılarının incelenmesi [Examining students' perceptions on esthetic value in social studies teaching program]. *Journal of Theory and Practice in Education*, 10(4), 1047-1076.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*. SAGE.
- Nacaroğlu, O., & Kızkapan, O. (2021). Gifted students' beliefs about knowledge and learning. *Journal of Science Learning*, 4, 275-287.

- Özalp, H. K. (2020). Görsel sanatlar öğretmen adaylarının estetik alanına ilişkin bilişsel yapılarının kelime ilişkilendirme testi ile incelenmesi [Analysis on cognitive structures of preservice visual arts teachers regarding aesthetics through word association test]. *Erzincan University Journal of Education Faculty*, 22(2), 515-534.
- Özaydın, N. (2022). Müzik öğretmen adaylarının 'koro' kavramına yönelik bilişsel yapıları [Prospective music teachers' cognitive structures of concept of 'choir']. *Milli Eğitim Dergisi*, 51(235), 2197-2224.
- Rubin, A., & Babbie, E. R. (2011). *Research methods for social work*. Brooks/Cole.
- Seyhan, A. (2020). Sosyal bilgiler öğretmen adaylarının estetik değerine ilişkin metaforları [Social studies prospective teachers' metaphoric perceptions about the value of aesthetics]. *Journal of Values Education*, 18(40), 115-147.
- Soykan, Ö. N. (2020). *Estetik ve sanat felsefesi* [Aesthetics and philosophy of art]. Bilge Kültür Sanat.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. (3rd ed.) Sage Publications, Inc.
- Şen, Ü. S. (2014). Müzik öğretmeni adaylarının müzik estetiğine ilişkin algıları [The perception of the candidates for music teacher on musical aesthetics]. *Idil Journal of Art and Language*, 3(13), 1-24.
- Torun, U. (2021). Müzikte estetiğin eğitimde önemi ve müzik estetiği gelişimine dönemsellik bakış [The importance of aesthetics in music in education and a periodic view on the development of music aesthetics]. *Ethnomusicology Journal* 4(2), 329-345.
- Townsend, D. (2002). *Estetiğe giriş* [Introduction to aesthetics]. İmge Kitabevi.
- Tunalı, İ. (1998). *Estetik* [Aesthetic]. Remzi Kitabevi.
- Türker, H. (2011). Nicolai Hartmann'da estetik değer [Aesthetic value in Nicolai Hartmann]. *Mukaddime*, 3(3), 1-26.
- Ünal, F., & Er, H. (2017). Öğretmen adaylarının sosyal bilgiler dersinde öğretimi zor olan soyut kavramlara ilişkin bilişsel yapılarının incelenmesi [A study on teacher candidates' cognitive characteristic with regard to difficult -to- teach abstract concepts in social studies courses]. *Bartın University Journal of Educational Research*, 1(1), 6-24.
- Yaman, H., Alaca, M. B., & Er Nas, S. (2022). Ortaokul öğrencilerinin yaşam becerilerine yönelik bilişsel yapılarının incelenmesi [An investigation of secondary school students' cognitive structures in the subject of life skills]. *Erzincan University Journal of Education Faculty*, 24(3), 444-456.
- Yıldırım, A., & Şimşek, H. (2021). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in the social sciences]. Seçkin.
- Yıldırım, V., & Koç, T. (2006). *Müzik felsefesine giriş* [Introduction to philosophy of music]. Bağlam.
- Yükseköğretim Kurumu [YÖK]. (2018). *Müzik öğretmenliği lisans programı* [Music teaching undergraduate program]. <https://www.yok.gov.tr/kurumsal/idari-birimler/egitim-ogretim-dairesi/yeni-ogretmen-yetistirme-lisans-programlari>
- Ziss, A. (2016). *Estetik: Gerçekliği sanatsal özümsemenin bilimi* [Aesthetics: The science of artistic assimilation of reality]. Hayalperest.

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 60%

Author 2: 40%

Conflict Statement

There is no material or individual organic link with the person or institution involved and no conflict of interest in the research.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Mesleki Müzik Eğitimi Alan Öğrencilerin Estetik Kavramına İlişkin Bilişsel Yapılarının İncelenmesi

Giriş

Estetiğin bir bilim olarak ele alınışı, isimlendirilmesi ve belirli tanımlar üzerinden irdelenmesi 18. yüzyıl gibi yakın bir zamana tarihlense de nesnelere kurulan estetik ilişkilerin, güzeli araştıran ve sorgulayan düşüncelerin, düşünce tarihi kadar eskiye uzandığı söylenebilir. Estetiğin bir bilim dalı olduğuna ilişkin görüşün karşısında onu felsefi bir alan olarak ele alan görüş, estetiği sanat felsefesi ile aynı çerçevede ele alan düşünce karşısında birbirinden ayrı tutan düşünce ve kapsadığı her bir unsur üzerinden estetiği tanımlayan önermeler düşünüldüğünde, tek bir estetik tanımı yapmanın olanaksızlığı fark edilir. Ancak Ziss'in (2016, s. 130) tanımı, estetiği yalnızca güzelin bilimi olarak değil, daha geniş bir çerçevede anlama olanağı sunar: Estetik, "*gerçekliğin sanatsal özümsemesinin bilimidir ve her şeyden önce de sanatın yasalarının bilimi ve sanatsal yaratı kuramıdır*".

Yaşadığımız dünyanın ve tekniğin gelişiminin yanında, insan bilincindeki, duygu ve sezgisindeki gelişim nedeniyle, sanat olgusu ve estetik değerlendirme, insan etkinliklerinin ayrılmaz bir parçası haline gelir (Doğan, 1975). Sanatı tam anlamıyla algılayabilmek, yorumlayabilmek ve eleştirel bir bakış edinebilmek için estetik kavramları bilmek ve birbirleriyle ilişkilerini kavrayabilmek gerekir. Sanat ile estetiğin iç içeliği düşünüldüğünde, özellikle de sanatı yaratmayı, üretmeyi, yorumlamayı ve sanat üzerine düşünmeyi meslek olarak seçen bireylerin estetik ve estetiğe ilişkin temel kavramlar hakkında bilgi sahibi olması ve estetik bakışı benimsemeleri beklentisi söz konusu olur. Güzeli sanatların her alanı gibi, müzik de estetikle ilintilidir; müzik estetiğinin, besteci, yorumcu ve dinleyici arasındaki bağıntıları ve bu bağıntıların güzele ilişkin ölçütlerini araştırdığı söylenebilir. Estetikten ve felsefeden bağımsız bir sanat anlayışı düşünülemez gibi, bunlardan yoksun bir genel müzik eğitimi de düşünülemez. Estetik bakış açısı, yalnızca sanat ve sanat eserlerine karşı edinilen bir tutum olmanın ötesine geçerek bir yaşam biçimi haline gelir; yaşantılarımızın her alanında etkisi gözlemlenir. Bu nedenlerle, mesleki

sanat eğitimi alan sanatçı, eğitimci ve sanat bilimci adaylarının estetik kavramına ilişkin bilgi düzeylerini, yaklaşımlarını ve varsa kavram yanlışlarını ortaya koymak önem kazanır.

Kelime ilişkilendirme testleri, kişilerin belli bir kavrama ilişkin uzun dönemli hafızalarında yer edinmiş ilgili kavramların arasındaki bağları değerlendirmek, bu kavramlar arasında yeterli ve anlamlı ilişkiler olup olmadığını ortaya koymak için kullanılan çeşitli metotların içinde yaygınca ve uzun süredir kullanılan bir yöntemdir (Bahar & Özatlı, 2003, s. 75). Bu araştırmada da, pek çok farklı disiplinde önemli kavramlara ilişkin bilişsel yapıları çözümlmek için başvuru kelime ilişkilendirme testi aracılığıyla mesleki müzik eğitimi alan öğrenciler tarafından estetik kavramının nasıl algılandığını belirlemek amaçlanmış ve şu sorulara yanıt aranmıştır:

1. Mesleki müzik eğitimi alan öğrencilerin estetik kavramına ilişkin bilişsel yapıları nasıldır?
2. Mesleki müzik eğitimi alan öğrencilerin estetik kavramına ilişkin kavram yanlışları nelerdir?

Yöntem

Nitel yöntemin izlendiği bu araştırma, betimleyici bir kimlik taşımaktadır. Eğitim alanında sıklıkla yapılan betimsel, bir diğer adıyla betimleyici araştırmalar, bir olgu ya da durumu detaylıca tanımlamayı hedefler ve varlıkların, olayların, nesnelerin, kurumların, grupların “ne” olduğunu açıklamaya çalışır (Büyüköztürk vd., 2009; Karasar, 2006). Bu araştırmada da çalışma grubunun estetik kavramına ilişkin bilişsel algı durumlarının “ne” olduğu ortaya konmaya çalışılmaktadır.

Araştırmanın çalışma grubunu, 2022- 2023 öğretim yılında Türkiye’de bir devlet üniversitesine bağlı Müzik, Müzikoloji ve Türk Müziği bölümlerinin 1., 2., 3. ve 4. sınıflarında öğrenimine devam eden ve çalışmaya gönüllü katılım sağlayan öğrenciler oluşturmaktadır. Araştırma verileri, belli bir kavrama ilişkin bilişsel yapıyı ortaya koymak ve kavram yanlışlarını tespit etmek için alanyazında kullanılan alternatif bir ölçme-değerlendirme tekniği olan kelime ilişkilendirme testi (KİT) ile toplanmıştır. Kelime ilişkilendirme testlerinde, araştırma grubuna verilen bir dizi anahtar kelime ile ilişki kurulan kelimelerin, verilen süre içinde sıralanması beklenir.

Kelime ilişkilendirme testi ile elde edilen veriler, içerik analizi yöntemiyle çözümlenmiştir. Verilerin içerdikleri anlam doğrultusunda kavramsal hale getirilmesi ve temalar aracılığıyla bu kavramların arasındaki anlamlı bağlantıların açıklanması temeline dayanan içerik analizi sürecinde, tekrarlayan ve öne çıkan kelimelerin belirlenmesiyle kodlama yapılmış ve bir frekans tablosu oluşturulmuştur. Tekrarlanan ve geçerli olan ifadeler, birbirlerine olan benzerlikleri doğrultusunda oluşturulan kategoriler/temalar altında toplanmıştır. Son olarak temalara ilişkin frekans tabloları oluşturulmuş ve elde edilen bulgular örnek cümlelerle birlikte yorumlanmıştır.

Bulgular

Geçersiz yanıtlar kapsam dışı bırakıldıktan sonra araştırmaya dahil edilen 64 katılımcı yanıtı incelendiğinde, estetik kavramı ile ilgili birbirinden farklı 111 kavram türetildiği tespit edilmiştir. Bu sözcükler içinde yalnızca bir kez kullanılmış olan 66 sözcük araştırmaya dahil edilmemiştir. İçerik analizi doğrultusunda 45 sözcük 4 farklı kategori altında toplanmıştır. Bu kategoriler; estetiğin kaynağı, estetik nitelermeler ve terimler, estetik değerler ve kavram yanlışları olarak ortaya çıkmıştır.

Katılımcıların estetik kavramına ilişkin bilişsel yapılarının büyük bir kısmını, 22 farklı sözcük türetilen *kavram yanlışları* (n=96) kategorisi oluşturmaktadır. Bu sözcükler türetilen toplam

sözcüklerin %47,29'nu oluşturarak katılımcıların estetik kavramına ilişkin bilişsel yapılarının niteliğini ortaya çıkaran en yüksek orana sahiptir. Diğer bilişsel yapıların kategorilere dağılımı kullanım sıklığına göre; 7 farklı sözcük türetilen *estetik değerler* (n=57) kategorisi, 9 farklı sözcük türetilen *estetiğin kaynağı* (n=31) kategorisi, 8 farklı sözcük türetilen *estetik nitelermeler ve terimler* (n=19) kategorisidir. Güzel/güzellik kavramının *estetik değerler* ve *kavram yanılgıları* kategorilerinde iki farklı anlamda kullanılması üzerine toplam frekans sayısı 46 olarak hesaplanmıştır.

Elde edilen verilen analizi sonucunda en az sözcük türetilen kategori estetik nitelermeler ve terimler (f=8) kategorisi olmuştur. Bu kategoride yer alan sözcükler diğer kategoriler içerisinde %9,35'lik bir paya sahiptir. En çok tekrar edilen sözcükler zarafet (f=3), düzgün (f=3) ve bakış açısı (f=3) olmuştur. Estetiğin kaynağı kategorisi (f=9) diğer kategoriler içerisinde %15,27'lik bir paya sahiptir. Bu kategoride en çok tekrar eden sözcükleri sanat (f=12), doğa (f=3), heykel (f=3) ve aşk (f=3) olmuştur. Bir diğer kategori olan estetik değerler kategorisi (f=7) diğer kategoriler içerisinde %28,07'lik bir paya sahiptir. En çok tekrar edilen güzel/güzellik (f=36) ve hoş (7) sözcükleri olmuştur. En çok sözcük türetilen kategori ise kavram yanılgıları (22) kategorisi diğer kategoriler içerisinde %47,29'luk bir paya sahiptir. Bu kategori içerisinde en çok tekrar eden sözcükler arasında estetik değerler kategorisinde de yer alan, ancak insana özgü dış görünüşü temsil ettiği saptandığı için bu kategoride yer verilen güzel/güzellik (f=15) sözcüğü olmuştur. Katılımcılar tarafından en çok tekrar edilen sözcükler burun (f=14), görünüm/görünüş (f=9), ameliyat (f=6), vücut (f=5), yapay/yapaylık (5), dudak (f=5), botoks (f=4), doktor (f=4), bakım (f=4) olmuştur.

Tartışma ve Sonuç

Araştırmanın "Mesleki müzik eğitimi alan öğrencilerin estetik kavramına ilişkin bilişsel yapıları nasıldır?" sorusuna yönelik ulaşılan bulgular doğrultusunda, mesleki müzik eğitimi alan öğrencilerin estetik ile en çok ilişkilendirdikleri ifadelerin 'estetik değerler' altında sınıflandırılan *güzellik/güzel* (f=36) kavramı olduğu sonucuna ulaşılmıştır. İlgili alanyazın incelendiğinde estetik kavramına ilişkin yapılmış benzer araştırmalarda da aynı yönde bulguya ulaşıldığı görülmektedir (Karip, 2019; Özalp, 2020; Istók et al., 2009). İlişkilendirilme sıklığı ikinci sırada yer alan ve 'estetiğin kaynakları' altında sınıflandırılan *sanat* (f=12) kavramı, estetiğin doğrudan ilintili olduğu ve beslendiği temel araştırma alanıdır. Bunun yanında, çalışmada estetik ile en çok ilişkilendirilen bir diğer kavram olan *hoş* (f=7), estetikte güzel kavramına odaklanan tartışmalarda da öne çıkan kavramlardandır. 'Estetik değerler' altında sınıflandırılan *uyum* (f=3), *simetri* (f=3) *oran* (f=3) ve *düzen* (f=3) ifadeleri birbiriyle ilintili kavramlar olarak bütüncül şekilde ele alındığında, öne çıkan diğer önemli ifadelerdir. 'Estetik terim ve nitelikler' kategorisinde en çok tekrar eden ifadeler ise *zarafet* (f=3) ve *yüce* kavramları (f=3) olmuştur.

Araştırmanın ikinci sorusu olan "Mesleki müzik eğitimi alan öğrencilerin estetik kavramına ilişkin kavram yanılgıları nelerdir?" sorusuna yönelik ulaşılan bulgular, katılımcılar arasında oldukça önemli bir yoğunlukta (%47,2) estetik kavramına ilişkin kavram yanılgılarının bulunduğunu göstermektedir. Bu kavramlar arasında yalnızca kişilerin dış görüntüleriyle ve cerrahi operasyonla aynı bağlam içerisinde kullanıldığı belirlenen *güzel/güzellik* (f=15), burun (f=14) ve görünüm/görünüş (f=9) kavramlarının öne çıktığı görülmektedir. Sanatla mesleki bir ilgi ve ilişkisi bulunmayan ya da küçük yaş gruplarındaki kişilerce estetik kavramının bu yönde algılanması beklendik olabilir ve bu yönde bulgulara ulaşan ilgili çalışmalar da (Demirel, 2018; Kılcan & Akbaba, 2014) bulunmaktadır. Ancak lisans düzeyinde mesleki müzik eğitimi alan kişilerin, azımsanamayacak bir çoğunlukta bu yönde bir estetik algıya sahip olmaları oldukça düşündürücüdür. Estetiğe ilişkin temel kavramların farkında

olmadan, estetik hakkında bilgi ve algı sahibi olmak güçtür. Estetik algı, bir farkındalık halidir ve bu farkındalık olmadan sanatı meslek edinen kişilerin gerek kendi estetik yaşantı ve anlayışlarına, gerekse çevrelerinin ve nihayetinde toplumun estetik yaşantısına olumlu katkılarda bulunabilmeleri güçleşir.

Öneriler

Araştırmada ulaşılan sonuçlar doğrultusunda şu öneriler getirilebilir:


- Özellikle temel estetik kavramları, estetik deneyimi, estetik beğeni gelişimini, müzik estetiğini ve sanat yapıtlarının estetik çözümlenmesini odağına alan, estetik farkındalığı artırma amacındaki bir felsefe ya da estetik dersinin mevcut koşullara göre zorunlu ya da seçmeli ders olarak mesleki müzik eğitimi veren kurumların lisans programlarında yer alması,
- Estetiğin bir ders kapsamında öğretime katılmasının yanında, öğrencilere estetik deneyim ve eleştirel yaklaşım olanakları sunulacak ders dışı çalışmalar ve atölyelerin planlanması,
- Sanatın yalnızca bir alanında değil, tüm alanlarında ve hatta tüm yaşamda estetik anlayışa sahip olma ülküsünden yola çıkarak farklı sanat alanlarında estetik çözümlenme ve deneyim olanaklarının gözden geçirilmesi,
- Yaş, sınıf düzeyi, eğitim alınan kurum ve müzik alanında eğitim alınan bölüm değişkenleri açısından farklı katılımcılarla benzer çalışmaların yürütülmesi,
- Farklı araştırma desenleri izlenerek ve farklı veri toplama araçları kullanılarak benzer çalışmaların yapılması önerilebilir.





<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Effectiveness of Presenting the Touch Math Technique on a Tablet in Teaching Simple Addition to Children with Autism Spectrum Disorder*

 Abdurahman Demir,
Tokat/Türkiye
a.demirrr9@gmail.com
Orcid ID: 0000-0002-0431-6825

 Sertan Talas, Dr., Corresponding Author
Tokat Gaziosmanpaşa University, Türkiye
sertan_talas@hotmail.com
Orcid ID: 0000-0003-1635-9707

 Yasin Gökbulut, Assoc. Prof. Dr.
Tokat Gaziosmanpaşa University, Türkiye
yasin.gokbulut@gop.edu.tr
Orcid ID: 0000-0001-8554-1102

Article Type: Research Article
Received Date: 13.09.2023
Accepted Date: 27.10.2023
Published Date: 30.10.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software
Doi: 10.29329/tayjournal.2023.610.07

Citation: Demir, A., Talas, S., & Gökbulut, Y. (2023). Effectiveness of presenting the touch math technique on a tablet in teaching simple addition to children with autism spectrum disorder. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 846-872.

* This study was derived from the master's thesis of the first author at Tokat Gaziosmanpaşa University Graduate Education Institute.

Abstract

Individuals with autism spectrum disorder often struggle with essential skills like mathematics, which are vital for independence. This includes understanding numbers, managing money, shopping, grasping time concepts, recognizing shapes, and arithmetic problem-solving. This research evaluates the effectiveness of the "Touch Math" method, delivered via tablet, in teaching basic addition to individuals with autism spectrum disorder. This technique is recognized in literature for its potential in teaching numbers and arithmetic. The study was conducted using the participant-across multiple probe design, a single-subject research method. The participant-across multiple probe design is a single-subject research method conducted with multiple participants to reveal the effects of an independent variable on a dependent variable. Four students aged 8-10 with autism spectrum disorder participated in the study. The findings indicate that the tablet-based "Touch Math" method effectively teaches them basic addition skills. The data of the study show that the "Touch Math" technique demonstrates 100% success in teaching addition skills to participants after an average of 7 to 9 teaching sessions. The follow-up data of the research show that participants maintained their acquired skills at a 100% level in the follow-up sessions conducted on the seventh, fourteenth, and twenty-first days after the teaching sessions. The study's findings show that participants applied their learned skills across various settings and people. Feedback from participants, their parents, and teachers affirmed the positive social validity of the study's methods, especially the tablet presentation. Based on these findings, suggestions have been made for future studies and practitioners.

Keywords: Touch Math technique, tablet, simple addition process, autism spectrum disorder.

Introduction

Autism Spectrum Disorder [ASD] is a developmental disorder that is part of a widely observed spectrum of developmental disorders. It is characterized by challenges in interpersonal communication and interaction, limited, repetitive patterns in behavior, interests, and activities, and a delay or atypical functionality in at least one of the language or symbolic play skills used in interpersonal interaction and communication before the age of 3 (American Psychiatric Association [APA], 2013). Individuals diagnosed with ASD may exhibit repetitive behaviors and limited areas of interest. Moreover, they may experience deficiencies in daily living skills and academic abilities. Sensory sensitivities in individuals with ASD are also frequently observed, which can manifest in various ways, such as hypersensitivity to light or sound (Lord, Elsabbagh, Baird, & Veenstra-Vanderweele, 2018; Rogers & Ozonoff, 2005). Among academic skills, the importance of mathematical skills for being independent in daily life is significant. Counting, numbers, using money, shopping, time, shapes, and problem-solving requiring arithmetic procedures are mathematical skills that individuals with developmental deficiencies need in their daily lives (Ministry of National Education [MoNE], 2008, p. 5). To enable individuals diagnosed with ASD to be independent in daily life, these skills need to be imparted. To teach basic mathematical skills to individuals diagnosed with ASD, the tools and materials used in the lesson must be suitable for the student's needs and level, and mathematical skills should be provided systematically and according to the level. If this teaching environment is not established, the difficulty of acquiring mathematical skills increases even more (Cawley, 1978, p. 201).

It is believed that when appropriate methods and techniques are applied to teach mathematical skills to students diagnosed with ASD (Autism Spectrum Disorder), acquiring these skills will be easier and more permanent (King, Lemons, & Davidson, 2016). One of these methods is the Touch Math technique. The Touch Math technique emerged as a result of research by Kramer and Krug (1973) on teaching addition procedures to students with intellectual disabilities. Later, this technique was

developed for the purpose of teaching arithmetic procedures (Bullock, Pierce, & McClelland, 1989). The Touch Math technique is a multi-sensory approach used to teach addition, subtraction, multiplication, and division, where dots corresponding to the numerical value are placed on numbers, excluding zero. Students see the numbers, touch the designated dots, say the numbers, and hear the problems spoken aloud. This technique is especially used when teaching numbers and arithmetic procedures (Nuhoğlu & Eliçin, 2013; Vinson, 2004). In addition to smart boards used in schools, tablets have now been incorporated into educational life. In studies conducted to help individuals diagnosed with ASD acquire academic skills, it has been observed that technological devices are utilized (Acungil, 2014; Bosseler & Massaro, 2003; Burke, Andersen, Bowen, Howard, & Allen, 2010; Coleman-Martin, Heller, Cihak, & Irvine, 2005; Değirmenci & Özen, 2013; Eliçin, 2015; Halisküçük, 2007; Massaro & Bosseler, 2006; Murdock, Ganz, & Crittendon, 2013; Öncül, Yücesoy, & Özkan, 2010; Özkan, 2013; Öztürk, 2016; Sani & Bozkurt, 2011; Williams, 2013).

Technology-based tools, especially tablet computers, have initiated a revolutionary era for individuals with autism spectrum disorder, providing multifaceted benefits for education and communication needs. In particular, tablet computers are believed to be highly effective as augmentative and alternative communication devices. Touchscreen interfaces are intuitive and help individuals who may struggle with traditional verbal communication to express themselves more effectively (Schlosser et al., 2014). Applications designed for users diagnosed with autism spectrum cater to each individual's unique strengths and challenges, providing environments suitable for personalized and adaptable learning experiences (Fletcher-Watson et al., 2016). Additionally, another technological advancement, virtual reality, can offer safe environments for individuals with ASD to practice social scenarios and coping mechanisms without the pressure of real-world interactions (Parsons & Cobb, 2014). Digital games and simulations have been shown to enhance cognitive and motor skills and can be particularly engaging for individuals with ASD, potentially encouraging longer and more effective learning sessions (Whyte et al., 2018). Moreover, technology often provides the predictability and routine preferred by individuals with autism, helping to reduce anxiety (Koegel et al., 2013). Although the literature praises technology, especially tablet computers, for providing therapeutic and educational advantages for individuals with autism spectrum disorder (Kagohara et al., 2013), it is essential to acknowledge and consider the challenges and adverse outcomes associated with its use.

A significant concern is the potential for individuals diagnosed with autism to become overly dependent on tablets, which could lead to a decrease in social interactions (Parsons & Cobb, 2014). Since individuals with ASD already face challenges in social communication, excessive focus on screens could further limit opportunities to practice and develop these crucial skills (Pavlopoulou & Dimitriou, 2020). Moreover, the immersive nature of tablet applications could exacerbate obsessive and repetitive behaviors often associated with autism (Lorah et al., 2015). Screen time can also impact sleep patterns; research indicates that excessive exposure to screens, especially before bedtime, can lead to sleep disorders in children with ASD (Engelhardt et al., 2019). Additionally, while tablets offer personalized learning experiences, they can also be a source of sensory overload for some individuals with ASD due to their heightened sensitivities to auditory and visual stimuli (Robertson & Ne'eman, 2012). From this perspective, the use of tablet computers in individuals with autism should be well-planned, and considerations mentioned in the literature should be taken into account during their use.

When looking at the national literature, there are a limited number of studies where the Touch Math technique is presented with technological applications (Genç, Issı, & Yıldız, 2017; Kot, 2019; Öztürk, 2016). In the literature, no research has been found regarding the effectiveness of presenting the Touch Math technique on a tablet in teaching the basic addition procedure to students diagnosed with ASD. It is anticipated that conducting research in this area would be beneficial, both because it is believed to be beneficial for students diagnosed with ASD and because there are not enough studies in the literature related to teaching the basic addition procedure using the Touch Math technique. The aim of this research is to determine the effectiveness of presenting the Touch Math technique using the explicit teaching method on a tablet in teaching simple addition procedures to children with ASD. In the research, answers to the following questions have been sought:

1. "Is the presentation of the Touch Math technique on a tablet effective in acquisition, follow-up, and generalization when teaching simple addition procedures to children diagnosed with ASD (Autism Spectrum Disorder)?"
2. "After the presentation of the simple addition skill to children diagnosed with ASD (Autism Spectrum Disorder) using the Touch Math technique, to what extent are the acquired skills retained after 1 week, 2 weeks, and 3 weeks?"
3. After presenting the simple addition skill to children diagnosed with ASD (Autism Spectrum Disorder) using the Touch Math technique, to what extent are the acquired skills generalized to different people and environments?"
4. What are the opinions (social validity) of the students, teachers, and parents of students included in this research regarding the simple addition procedure using the Touch Math technique?"

Method

Research Model

In this research, the multiple baseline design across participants, which is one of the single-subject research methods, was used. Single-subject research is an experimental method where the causal or functional relationship between independent and dependent variables is investigated with a single participant over a specific period (Horner, Carr, Halle, McGee, Odom, & Wolery, 2005). The multiple baseline design across participants is a model where the effect of the independent variable is investigated with at least three different participants. The goal is to impart the target to at least three subjects. Participants should be determined independently from each other and from individuals who might be influenced by the independent variable being researched (Tekin-İftar, 2012). In the study, the effectiveness of the Touch Math technique presented on a tablet in teaching simple addition procedures to three participants diagnosed with ASD was examined. It was aimed to impart the determined target to all 3 participants, ensuring that the environment and application remain the same. One participant took part in the pilot application phase, and it was considered to continue with this participant in case of any participant loss. In the multiple baseline design across participants, a baseline session is first applied to collect starting level data to determine the target skill performance of the participants. After obtaining stable data, the teaching session begins with the first participant to apply the independent variable. The teaching session continues with the first participant until the determined criterion is met. After the criterion is met, second baseline sessions are applied to all participants. Once stable data is obtained, the teaching session begins for the second participant. The teaching session continues with

the second participant until the determined criterion is met, and once the criterion is met, third baseline sessions are applied to all participants. After obtaining stable data, the teaching session begins for the third participant. The teaching session continues until the determined criterion is met, and once the criterion is met, the final baseline sessions are applied to all participants. (Tekin-İftar & Kırcaali-İftar, 2004)

The multiple baseline model allows for the generalization of data results across different participants since it investigates the effectiveness of teaching applied to different participants. The prerequisites for implementing the multiple baseline model are that prerequisite skills are independent of each other and functionally similar (Tekin-İftar, 2012). In the study, participants met the prerequisite skills. The application was carried out one-on-one on different days and times for each participant. In this study, the first baseline session was conducted to obtain the initial performance data of the participants regarding the basic addition skill. This session was conducted with worksheets prepared in advance, each containing 10 basic addition procedures. The difficulty level of the basic addition procedures on the papers is the same for all papers. Once stable data was obtained, teaching sessions began with the first participant. The touchpoint technique was presented with a tablet. After the teaching sessions conducted with the first participant, a baseline session was applied. When the determined criterion was met, the second baseline session was organized with all participants. Once stable data was obtained, teaching sessions began with the second participant. After the teaching sessions conducted with the second participant, a baseline session was applied. When the determined criterion was met, the third baseline session was organized with all participants. Once stable data was obtained, teaching sessions began with the third participant. After the teaching sessions conducted with the third participant, a baseline session was applied. When the determined criterion was met, the fourth and final baseline session was conducted. Following the termination of the teaching session, follow-up data was collected once from all participants at the end of the first, second, and third weeks to evaluate the continuity of the basic addition skill.

Dependent Variable

The dependent variable is the characteristic or attribute affected by the independent variable (Cresswell, 2012, p. 115). The dependent variable of this research is the level of performance of individuals diagnosed with ASD in executing the basic addition skill. Basic addition skills are fundamental mathematical proficiencies that individuals typically begin to acquire in early childhood. These skills involve combining two or more groups of objects to determine their total amounts (Baroody, 1987). For many children, initial addition learning begins with fingers, counting beads, or tangible objects to physically combine groups. As students achieve cognitive development, they transition to mental strategies and begin to recognize number patterns, use number bonds, and memorize specific addition procedures for efficiency. Teaching strategies such as the use of number lines, ten frames, and visual representations have been found to reinforce understanding. More importantly, mastering basic addition procedures not only aids in daily tasks but also serves as a prerequisite for more advanced mathematical concepts like subtraction, multiplication, and division (Jordan et al., 2007).

Independent Variable

The independent variable of this study is the instructional presentation of the point determination technique, also known as "TouchPoint Math" or Touch Math, on a tablet for teaching basic

addition procedures to children diagnosed with ASD (Autism Spectrum Disorder). Touch Math, commonly referred to as "TouchPoint Math", is an instructional approach designed to assist students, especially those with learning difficulties and intellectual disabilities, in grasping fundamental arithmetic skills through tactile and kinesthetic strategies. In this method, numbers are presented with designated "touch points." Every digit from one to nine has touch points associated with its numerical value. For instance, the number three has three touch points (Sneider & Beals, 2006). When performing addition or subtraction procedures, students touch these points in a specific sequence, vocalizing the count aloud, thereby making abstract mathematical processes more tangible and hands-on.

Setting

The study was conducted at the "Atlı Karıncalar Special Education and Rehabilitation Center" located in the city center of Tokat. The applications were carried out in an individual education room within the institution. The room measures 12 square meters. The room is equipped with one bookshelf, one cabinet, one table, three chairs, one small table, two small chairs, one writing board, and one camera.

Materials

In the study, a tablet was used as the primary material, along with a camera and a photo camera for data collection. Additionally, various data collection forms were utilized, including the teaching session implementation reliability form, the collective-daily check-in and follow-up session implementation reliability form, and the generalization session implementation reliability form. Forms for daily check-ins, collective check-ins, monitoring, and generalization sessions were also employed. Furthermore, a reward box was used as a reinforcer during the sessions.

Participants

The researcher who conducted the study is a graduate of the Classroom Teaching program at Tokat Gaziosmanpaşa University. The researcher is currently pursuing a master's degree in classroom education at the same university and is enrolled in the Graduate School of Tokat Gaziosmanpaşa University, Department of Basic Education, Classroom Education Program. The researcher is a specialist instructor and serves as an expert teacher at a special education and rehabilitation center. All applications were carried out by the researcher. The research was conducted at the Tokat Special Atıklarınçalar Special Education and Rehabilitation Center. Before starting the research, detailed information about the study was provided to the families of the students. Parental consent forms were signed by the parents. Four participants were included in the study, one for the pilot application and three for the experimental process. Two of the participants reside in the city center, while the other two reside in the district. One of the participants continues their education in a special lower class, while the other three continue their education as inclusive students. Participants were selected based on their possession of predetermined prerequisite skills. The identified prerequisite skills are;

1. Follows instructions.
2. Recognizes, verbalizes, and writes numbers.
3. Counts rhythmically by ones.
4. Understands the concepts of big and small, and can identify larger and smaller numbers.
5. Counts objects.
6. Counts by adding on.

Ahmet, who participated in the research process, is an 8-year-old male student. He can follow instructions, recognize, verbalize, and write numbers, count rhythmically by ones, understand the concepts of big and small, count objects, and count by adding on. He is currently continuing to receive support education at a special education and rehabilitation center in the city where the research was conducted.

The second participant, Aslı, is a 9-year-old female student. She can follow instructions, recognize, verbalize, and write numbers, count rhythmically by ones, understand the concepts of big and small, count objects, and count by adding on. She is currently continuing to receive support education at a special education and rehabilitation center in the city where the research was conducted.

The third participant, Çınar, is an 8-year-old male student. He can follow instructions, recognize, verbalize, and write numbers, count rhythmically by ones, understand the concepts of big and small, count objects, and count by adding on. He is currently continuing to receive support education at a special education and rehabilitation center in the city where the research was conducted.

Implementation Process

In this section, information related to the pilot implementation process, baseline sessions, teaching sessions, follow-up, and generalization sessions of the study will be provided.

Pilot Implementation

Before initiating the main phase of this research, a pilot study session was conducted to identify and rectify potential challenges that might be encountered during the implementation process. Erdem, a 10-year-old male student diagnosed with Autism Spectrum Disorder [ASD], participated in the pilot study. He is capable of following instructions, recognizing, vocalizing, and writing numbers, counting rhythmically by ones, understanding the concepts of "big" and "small", counting objects, and adding by counting on. Given that he possesses the necessary prerequisite skills, 10 teaching sessions were conducted using the touch math technique presented via a tablet to teach basic addition. The results of these sessions indicated that no modifications to the approach were necessary.

Multiple Probe Sessions

Multiple probe sessions were utilized to assess the participants' baseline performance on the target skill before the introduction of any intervention. For the first participant, these sessions continued until data from three consecutive sessions demonstrated stability. Once stable data were secured, the instructional intervention was initiated for the first participant. After the first participant met the predetermined criterion in the instructional sessions, another multiple probe session was conducted across all participants. This procedure was replicated for each participant. After every participant achieved the predetermined criterion in the instructional sessions, a final multiple probe session was carried out to evaluate their performance.

During the multiple probe sessions, the participant and the practitioner sat face-to-face. The practitioner initiated the session by saying to the participant, "I have a paper here with addition problems, let's look at them together," and then placed a worksheet containing 10 simple addition problems without reference points on the table. After the participant had a chance to review the worksheet, the practitioner instructed, "I'd like you to solve the addition problems on this paper. Let me know when you're ready to start." The practitioner waited for a positive response from the participant.

Once the participant signaled readiness, the practitioner directed, "Please read the numbers aloud as you solve the addition problem, and after finding the result, say it out loud and then write it down." The expectation was for the participant to count the touch points on the first number and then continue counting using the touch points on the second number to arrive at the sum. No reactions were given to the participant's correct or incorrect answers. Responses were recorded on a data collection form. After the session was completed, the participant was thanked for their participation, and the session was concluded.

Daily probe sessions were conducted during the instructional phase to assess the participants' performance on the targeted skill. Throughout the instructional sessions, the touch math technique was actively employed, utilizing reference points. Therefore, to monitor the participants' performance without the use of reference points, daily probe sessions were designed using worksheets containing 10 simple addition problems without reference points. The criterion was set as the participant's ability to respond correctly independently across three consecutive sessions. Once this was achieved, the instructional sessions were concluded, and a multiple probe session was conducted with all participants.

The procedures followed in the daily probe sessions were identical to those in the multiple probe sessions. The instructor presented the participant with a statement, "I have a paper with addition problems, let's look at it together," and then placed a worksheet containing 10 simple addition problems without reference points on the table. After the participant examined the worksheet, the instructor said, "I'd like you to solve the addition problems on this paper. When you're ready, let's begin," awaiting a positive response from the participant. Once the participant gave a positive response, the instructor instructed, "Read the numbers aloud as you solve the addition problem, and after stating your answer, write it down." The instructor did not react to the participant's correct or incorrect answers. Responses were recorded on a form. After the session was completed, the participant was thanked for their participation, and the session was concluded.

Teaching Sessions

Following the determination of the baseline performance in the probe sessions and the attainment of stable data, the teaching sessions for simple addition instruction using the tablet presentation of the touch math technique were initiated. The teaching sessions were conducted at the Tokat Special Merry-Go-Round Special Education and Rehabilitation Center. The touch math technique with tablet presentation was implemented using the explicit instruction method. Accordingly, the teaching process consists of three stages: modeling, guided practice, and independent application.

Modeling stage: The instructor sits face-to-face with the student and reminds them of the numbers with touch points. Then, the instructor says, "Now, I'm going to teach you how to do addition." capturing the student's attention. The instructor explains the importance of doing addition with touch point numbers and says, "Now, we will do addition using touch point numbers on the tablet. By counting the touch points on the numbers for addition, you won't need to open your fingers, and you'll complete the addition in a shorter time. If you listen to me and follow my instructions, you can choose a reward from the basket at the end of the lesson." This motivates the student. The instructor places the tablet, which contains simple addition tasks with touch point numbers, on the table and asks, "Are you ready?" After receiving a positive response from the student, the lesson begins.

The instructor says, "I will do the procedures by explaining them to you, so listen carefully." and demonstrates the first procedure. The instructor asks, "What is the name of this procedure?" and without waiting for an answer from the student, says, "This is an addition procedure." The instructor points to the first procedure on the tablet and asks, "What is $4+2$?" Without waiting for an answer, the instructor says, "I will rhythmically count the number of touch points on the second number, starting from the first number, and then mark the number that matches the result I found." The instructor shows the number options on the tablet screen. Pointing to the top number, the instructor says, "The number 4 is the first addend in this procedure." Then, pointing to the bottom number, says, "The number 2 is the second addend in this procedure." The instructor continues, "Let's add 4 and 2 now. Let's keep the number 4 in our mind and add the touch points on the number 2 to it." Pointing to the touch points on the number 2 and counting on from 4, the instructor says, "5, 6" and then asks, "What did I find?" Afterward, the instructor says, "I found 6. So, 4 plus 2 equals 6. Now, I'm selecting the result I found from the numbers on the tablet."

Guided practice stage: The instructor points to the procedure on the tablet and asks, "What is the name of this procedure?" After the student responds with "Addition procedure," the instructor asks, "Which numbers do we need to add?" The student answers, "4 and 2." The instructor then instructs, "Now, just like I showed you, keep the top number in your mind, and add the number of touch points on the bottom number to it. Then, mark the result you found from the numbers on the tablet." Following the guidance, the student counts, "5, 6," and selects the number 6 on the tablet.

Independent practice stage: The instructor says, "Now, you will do it on your own, just like I showed you. $4+2=?$ What's the result? Perform the addition procedure on the tablet and mark the result from the numbers displayed on the tablet." The student counts the touch points on the bottom number and adds it to the top number. After determining the result, the student selects the corresponding number on the tablet. If the student makes an error, the instructor reverts to the guided practice stage to assist and guide the student.

Concluding the instruction sessions: After completing the exercises on the tablet, the instructor says, "Well done! You did a great job in the lesson. In our next session, we will continue to practice addition. You can choose a reward from the reward basket." After listening, the student selects a reward from the reward box, and the lesson is concluded. At the end of the lesson, the session's activities are summarized, and the student is given the chosen reinforcer from the reward box to conclude the lesson.

Follow-Up and Generalization

Once the participants were able to independently perform basic addition procedures using the point determination technique presented on the tablet, follow-up sessions were conducted to determine the retention of this skill. Follow-up sessions were held at the end of the first, second, and third weeks after learning was achieved. Similar to the initial assessment sessions, the follow-up sessions were implemented to determine the participants' performance in achieving the targeted skill.

During the follow-up sessions, the participant and the practitioner sat face-to-face. The practitioner said to the participants, "I have a paper with addition procedures here, let's take a look together." and placed a worksheet containing 10 basic addition procedures without reference points on the table. After the participant examined the worksheet, the practitioner said, "I want you to do the addition procedures on the paper, let's start when you're ready." waiting for a positive response from

the participant. Once the participant gave a positive response, the practitioner instructed, "Read the numbers aloud as you do the addition procedure and write down the result after saying it out loud." and asked the participant to start. No reaction was given to the participant's correct or incorrect answers. The answers were recorded on the data collection form. After the session was completed, the participant was thanked for their participation, and the session was concluded.

To determine the generalization effect of presenting the touch math technique with a tablet on the basic addition procedure skill, generalization sessions were organized. The generalization sessions were conducted by teachers working at the Tokat Atıklarınçalar Special Education and Rehabilitation Center in their own classrooms. Like the initial level sessions, they were conducted as a pre-test – post-test. The pre-test was applied after the first collective probe level sessions were completed, and the post-test was applied after the last collective probe sessions were completed. The teachers who conducted the generalization sessions only gave instructions, did not react to correct or incorrect answers, and recorded the answers.

Reliability

In the study, interobserver reliability data and implementation reliability were collected. The reliability data of the study were collected by a special education expert who completed postgraduate education and another person who completed postgraduate education in another field.

Interobserver reliability and implementation reliability data were collected in 30% of the sessions recorded on video. Within the scope of the research, data were collected by watching video recordings of collective probe sessions, daily probe sessions, follow-up sessions, and generalization sessions and recording them on data collection forms. To calculate the interobserver reliability data, the formula " $(\text{agreement}) / (\text{agreement} + \text{disagreement}) \times 100$ " was used (Tekin-İftar, 2012).

Interobserver reliability was calculated as 100%. For the calculation of implementation reliability, the formula " $(\text{observed implementer behavior}) / (\text{planned implementer behavior}) \times 100$ " was used (Tekin-İftar, 2012). The implementation reliability related to the multiple probe, daily probe, instruction, follow-up, and generalization sessions of the study was found to be 100%.

Social Validity

Social validity refers to the data collected to determine the social necessity of dependent and independent variables. It involves evaluations made by the relatives of the participants regarding the dependent and independent variables (Kurt, 2012, pp. 375-376). To collect social validity data, three forms were created: the student social validity data collection form, the parent social validity data collection form, and the teacher social validity data collection form. Teachers and parents were informed about the study, and they were asked to fill out the forms.

Ethical Permissions of the Research

In this study, all the rules that need to be followed within the scope of the "Regulations on Scientific Research and Publication Ethics of Higher Education Institutions" have been adhered to. None of the actions specified under the title "Actions Against Scientific Research and Publication Ethics" in the second section of the regulation have been performed.

Ethical Committee Approval Information:

Name of the committee conducting the ethical evaluation = Tokat Gaziosmanpaşa University Social and Humanities Research Ethics Committee

Date of the ethical review decision =19/09/2022

Publication number of the ethical evaluation document =12-04

Findings

Effectiveness Findings

Looking at the graph area for Ahmet in Figure 1, it is observed that the percentage of correct responses is 0% based on the data obtained from the collective probe sessions conducted to determine the baseline level. In the 10 simple addition problems prepared in advance to determine the baseline level, the number of correct answers is 0. In the three collective probe sessions conducted for the baseline level, it was determined that the percentage of correct responses was 0, and with the acquisition of stable data, teaching sessions were started with Ahmet.

In the daily probe session conducted with Ahmet, the percentage of correct responses in the first session was 0%, in the second session 0%, in the third session 0%, in the fourth session 30%, in the fifth session 50%, in the sixth session 80%, in the seventh session 100%, in the eighth session 100%, and in the ninth session 100%. A total of 9 teaching sessions and 9 daily probe sessions were conducted with Ahmet. In each daily probe session, a set of 10 simple addition problems was given. When the correct response rate was 100% in three consecutive daily probe sessions, stable data was obtained, and the teaching and daily probe sessions were terminated. In the subsequent nine collective probe sessions, it was observed that Ahmet gave a 100% correct response in the simple addition procedure. Based on this data, it was observed that the presentation of the touch math technique with a tablet in teaching the addition procedure was effective on Ahmet.

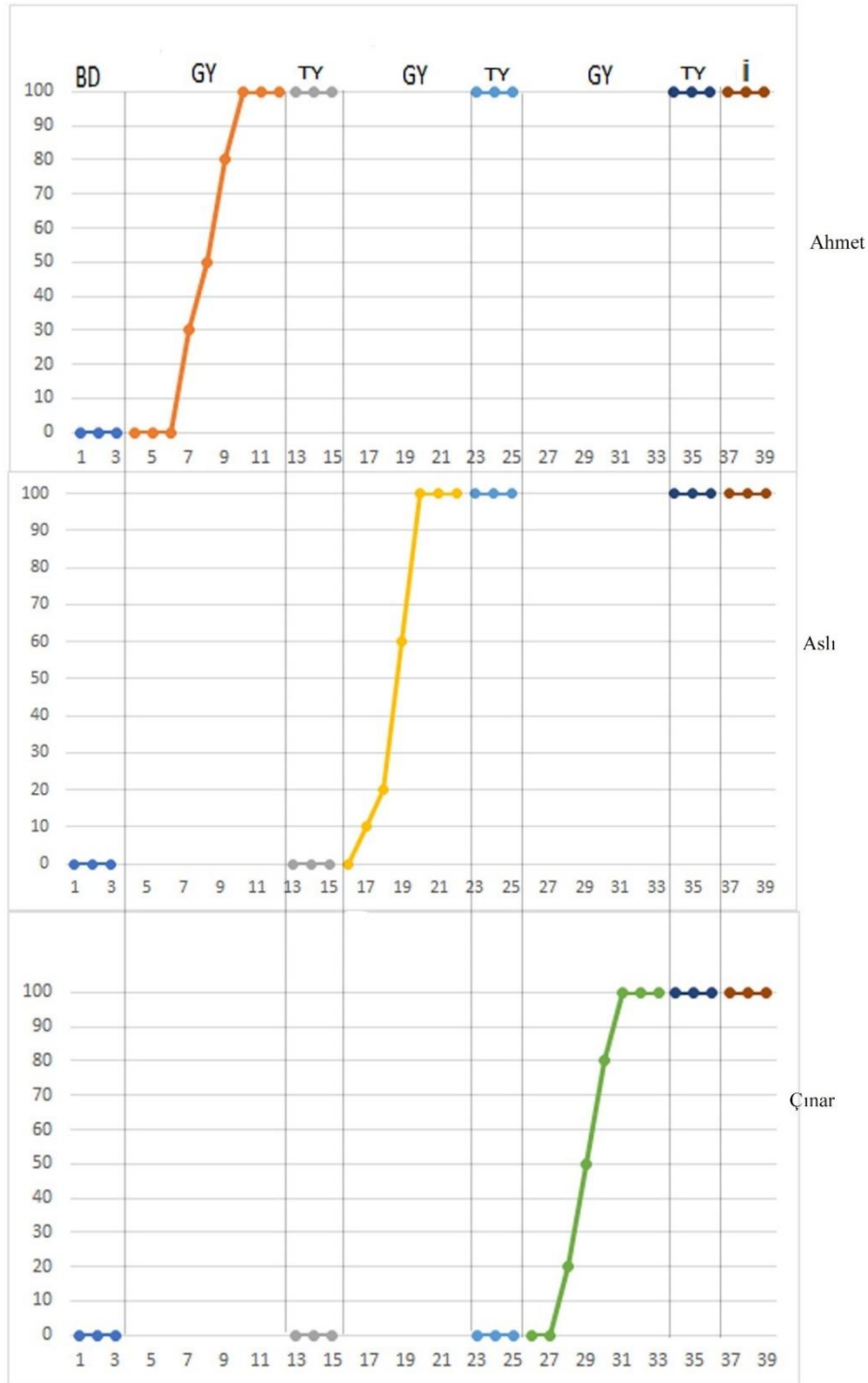


Figure 1. The percentages of correct responses in the baseline, daily probe, collective probe, and follow-up sessions for Ahmet, Aslı, and Çınar regarding the simple addition procedure.

In Figure 1, looking at the graph area for Aslı, it is observed that the percentage of correct responses in the collective probe session conducted to determine the baseline level is 0%. For the 10 simple addition problems prepared in advance to determine the baseline level, the number of correct answers is 0. After obtaining stable data in the daily probe sessions with Ahmet, three collective probe sessions were conducted with all participants. It was determined that Aslı's percentage of correct responses in these collective probe sessions was also 0%. After obtaining stable data, teaching sessions with Aslı commenced.

In the daily probe sessions conducted with Aslı, the percentage of correct responses in the first session was 0%, in the second session it was 10%, in the third session it was 20%, in the fourth session it was 60%, in the fifth session it was 100%, in the sixth session it was 100%, and in the seventh session it was 100%. A total of 7 teaching sessions and 7 daily probe sessions were conducted with Aslı. In each daily probe session, 10 simple addition problems were presented. Once a stable data of 100% correct response rate was achieved in three consecutive daily probe sessions, the teaching and daily probe sessions were concluded. In the subsequent 6 collective probe sessions, it was observed that Aslı gave a 100% correct response in the simple addition task. Based on this data, it was observed that the presentation of the touch math technique on a tablet was effective in teaching the addition task to Aslı.

When looking at the graph area for Çınar in Figure 1, it is observed that the correct response rate is 0% based on the data obtained from the collective probe session conducted to determine the starting level. The number of correct answers in the previously prepared 10 simple addition problems is 0. After obtaining stable data in the daily probe sessions with Ahmet, three collective probe sessions were conducted with all participants. It was determined that Çınar's correct response rate was also 0% in these conducted collective probe sessions. After obtaining stable data in the daily probe sessions with Aslı, three more collective probe sessions were conducted. It was again determined that Çınar's correct response rate was 0% in these sessions. After obtaining this stable data, teaching sessions were initiated with Çınar.

In the first daily probe session conducted with Çınar, the correct response rate was 0%. In the second daily probe session, it was 0%, in the third session, it was 20%, in the fourth session, it was 50%, in the fifth session, it was 80%, and in the sixth, seventh, and eighth sessions, it was 100%. A total of 8 teaching sessions and 8 daily probe sessions were conducted with Çınar. In each daily probe session, 10 simple addition problems were given. Once a stable data was obtained with a correct response rate of 100% in three consecutive daily probe sessions, the teaching and daily probe sessions were concluded. In the subsequent 3 collective probe sessions, it was observed that Çınar gave a 100% correct response in the simple addition procedure. Based on this data, it is observed that the presentation of the touch math technique on a tablet is effective on Çınar in teaching the addition procedure.

Follow-Up Findings

After the study conducted to teach the simple addition procedure using the touch math technique presented on a tablet with the explicit teaching method, three follow-up sessions were conducted 7, 14, and 21 days later to determine whether the participants, Ahmet, Aslı, and Çınar, maintained the simple addition procedure skill they acquired. The graph in Figure 2 shows that the correct answer percentage for the simple addition procedure in the follow-up sessions conducted for Ahmet, Aslı, and Çınar was 100%. When looking at the data, it is observed that even 7, 14, and 21 days after the completion of the simple addition procedure teaching using the touch math technique presented on a tablet with the explicit teaching method, the participants' correct answer percentages remain at 100%.

Generalization Findings

In the study, generalization sessions were organized to determine whether Ahmet, Aslı, and Çınar could perform at the desired level with the simple addition procedure skill they acquired in different environments and with different individuals. For the generalization sessions, they were

conducted with the teachers at the special education and rehabilitation center where the research was carried out and in the teachers' classrooms. Data was collected using a pre-test – post-test application. The data from the conducted pre-test – post-test application can be seen in the graph in Figure 2.

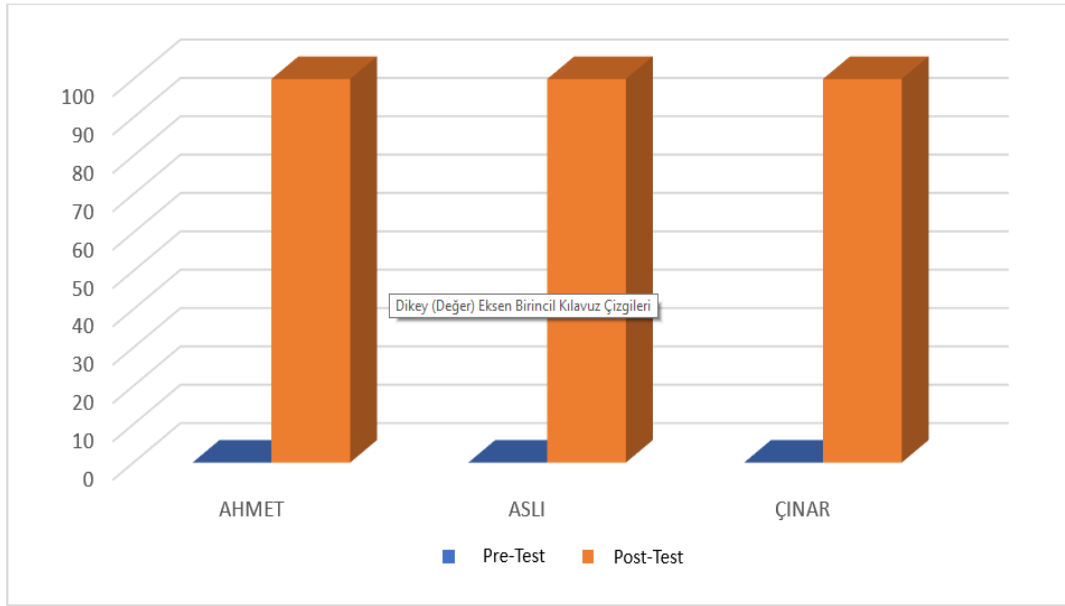


Figure 2. Ahmet, Aslı, and Çınar's generalization percentages for the simple addition procedure skill to different individuals and environments through the pre-test – post-test application.

As seen in Figure 2, while Ahmet, Aslı, and Çınar's correct response percentages are 0% in the pre-test session, they are observed to be 100% in the post-test session. Considering these findings, the fact that Ahmet, Aslı, and Çınar's correct response percentages are 100% indicates that the presentation of the touch math technique via tablet in teaching addition procedures to children diagnosed with ASD is effective in generalizing the acquired skill to different environments and individuals.

Social Validity Findings

To collect the social validity data of the study, the student social validity data collection form, the parent social validity data collection form, and the teacher social validity data collection form were filled out by the participants. Opinions were obtained from the students, their parents, and the teachers working at the rehabilitation center.

Based on the information obtained from the social validity form applied to the participants, all participants expressed that the addition procedure is significant in their lives. They were satisfied with the use of the touch math technique in teaching and stated that they were able to learn the addition procedure through this method.

All parents stated that the addition procedure is a lifelong necessary and essential skill. They noticed an improvement in their children's ability to perform addition procedures with the provided instruction. Therefore, they expressed that the touch math technique is beneficial and effective.

All teachers mentioned that there was a positive difference in the students' ability to perform addition procedures during the teaching process. They found that presentations made with tablets effectively increased student motivation. They also expressed their intentions to use this method for different students and would recommend the touch math technique presented on tablets to their colleagues.

Discussion and Conclusion

Based on the findings obtained in the study, it has been determined that the presentation of the Touch Math technique on tablets is effective in teaching the addition procedure to children diagnosed with ASD. Students were able to maintain the basic addition skill they acquired even after the first, second, and third weeks following the completion of the application. They were also able to generalize this basic addition skill to different individuals and environments. Furthermore, it was observed that students, parents, and teachers have positive opinions regarding the social validity of the study.

Before delving into a detailed discussion of the research findings, one of the most crucial topics that needs to be addressed is whether instructional activities presented on tablet computers are beneficial, especially for individuals diagnosed with autism. The use of tablets for students diagnosed with autism can sometimes lead to overstimulation due to the multifaceted sensory inputs provided by the devices, such as bright screens and auditory stimuli (Kuznekoff et al., 2015). Additionally, tablets can inadvertently encourage repetitive and restrictive behaviors, which are characteristic challenges for individuals with autism (Boucenna et al., 2014). On the other hand, it is undeniable that there are many studies in the literature that have yielded positive results when using tablets. In this context, presenting the Touch Math technique via tablets stands out as a tangible, predictable, and low-tech method that caters to multiple senses and aims to enhance motivation while minimizing distractions. Beyond mathematics, this tactile strategy can be extended to other learning areas. For instance, understanding reading sequences, marking progressions on historical timelines, and even tracing patterns in basic scientific concepts can be achieved with touch-based techniques (Anderson et al., 2017).

Indeed, while technology offers countless advantages, it is believed that the presentation of traditional tactile methods like the Touch Math technique on tablets can be extremely beneficial for certain students. In this context, the primary finding of this research is the effectiveness of presenting the Touch Math technique on tablets for teaching addition to children diagnosed with Autism Spectrum Disorder [ASD]. According to the findings, this study appears to be effective. When looking at the literature, there are many studies that have proven the effectiveness of the Touch Math technique. The findings of this study are consistent with those of previously conducted quasi-experimental (Badır, 2014; Berry, 2007; Cihak and Foust, 2008; Can-Çalık, 2008; Eliçin et al., 2013; Fletcher et al., 2010; Littlefield, 2003; Newman, 1994; Pupo, 1994; Simon and Hanrahan, 2004; Yıkılmış, 2016) and experimental (Velasco, 2009) studies. Individuals diagnosed with ASD often struggle to grasp abstract concepts. Consequently, they face challenges in learning mathematical skills. The Touch Math technique is believed to be more effective as it caters to multiple senses.

In the study investigating the effectiveness of presenting the Touch Math technique on tablets for teaching addition to children diagnosed with Autism Spectrum Disorder [ASD], there is no difference in the students' initial levels. However, there are differences in the data obtained from the number of instructional sessions conducted to impart the targeted skill and daily check-in sessions. 9 instructional sessions were conducted with Ahmet, 7 with Ashı, and 8 with Çınar. From this, it can be inferred that even though students learn a skill using the same method, individual differences also play a role in the learning process.

The findings of the study share common results with studies investigating the effectiveness of the Touch Math technique in teaching addition to children diagnosed with Autism Spectrum Disorder

[ASD]. Yıkılmış (2016), who researched the effectiveness of the Touch Math technique in teaching addition to children diagnosed with ASD, and Cihak and Foust (2008), Fletcher et al. (2010), who compared the effectiveness of the Touch Math technique and the number line technique in teaching addition to children diagnosed with ASD, have concluded that the Touch Math technique is effective in teaching addition. The findings of this study are consistent with previous research and support this study. There are also differences between previous research and this study. Unlike previous studies, in this study, the Touch Math technique was presented on a tablet. In this respect, it is believed to contribute to the literature and serve as an example for future studies.

The second finding of the study is whether the students can maintain the basic addition skill they have acquired. Looking at the findings, it is observed that all children with ASD can maintain the basic addition skill they have acquired even after the first, second, and third weeks following the completion of the application. When the follow-up findings are examined, it is seen that the correct response percentage for the basic addition skill in the follow-up sessions conducted at the end of the first, second, and third weeks for all three students is 100%. Accordingly, it is consistent with previous studies that investigated the permanence of the Touch Math technique (Badır, 2014; Çalık 2008; Eliçin et al., 2013; Simon & Hanrahan, 2004).

The third finding of the study is whether the students can generalize the basic addition skill to different people and environments. Looking at the findings, it is observed that all three participants were able to generalize the basic addition skill they acquired to different people and environments. This is consistent with the generalization findings of previous studies (Avant & Heller, 2011; Badır, 2014; Can-Çalık, 2008; Eliçin et al., 2013; Yıkılmış, 2016).

The fourth and final finding of the study pertains to the social validity data based on the opinions of students, parents, and teachers. The findings indicate that students, parents, and teachers have expressed positive views regarding the Touch Math technique. Only one student responded with "undecided" to the question "Do you like math class?". It is believed that this response may be due to the student's lack of confidence in their math skills. Students, parents, and teachers have expressed the view that the presentation of the Touch Math technique via tablet is useful, effective, generalizable, and lasting. The social validity findings of this study are consistent with those of previous studies (Badır, 2014; Can-Çalık, 2008). This research is also expected to contribute to the literature as it is the first study that examines the opinions of students, parents, and teachers regarding the tablet presentation of the Touch Math technique for teaching addition procedures to children diagnosed with ASD.

The research findings highlight the effectiveness of the Touch Math technique presented via tablet in teaching addition procedures to children diagnosed with ASD. Despite the different presentations in other studies, the effectiveness of the Touch Math technique in teaching addition procedures remains consistent. This consistency stems from the flexible nature of the Touch Math technique's presentation. The fact that the Touch Math technique was presented via tablet for the first time to children diagnosed with ASD will also contribute to the literature.

The findings of the study indicate that the Touch Math technique presented via tablet is effective for students diagnosed with ASD in teaching basic addition procedures. Additionally, the findings demonstrate that the skills imparted to the students can be generalized to different environments and individuals and are lasting. These findings are consistent with previous research. The implementation

of the study using the explicit instruction method has facilitated easier learning for the students due to the modeling and guiding stages. It is believed that the research can be further developed based on the findings and observations obtained. Some recommendations have also been provided to shed light on future research.

Recommendations

Suggestions for Implementation

1. It is recommended to provide training to teachers on the planning and implementation of the Touch Math technique.
2. The presentation of the Touch Math technique via tablet is not only recommended for addition prodedures but also for subtraction, multiplication, and division prodedures.

Suggestions for Future Research:

1. The participants of the study consist of students diagnosed with ASD (Autism Spectrum Disorder). In future research, it is suggested that studies be conducted on the presentation of the touch math technique on tablets for teaching basic addition prodedures to individuals with special needs who have other disabilities.
2. The number of participants in this study is three students. It is suggested that studies investigating the effectiveness of the touch math technique be conducted with larger study groups.
3. In this study, the effectiveness of presenting the touch math technique on tablets has been researched. It is suggested that studies be conducted to compare the effectiveness of the touch math technique's presentation on tablets with different presentations.
4. It is suggested that the touch math technique be compared with different teaching techniques in terms of efficiency.
5. In this study, the effectiveness of presenting the touch math technique on tablets for teaching basic addition prodedures has been researched. It is suggested that the effectiveness of the touch math technique for teaching more complex addition prodedures be investigated.

References

- Acungil, A. T. (2014). *Zihin yetersizliği olan öğrencilere görsel-işitsel teknolojilerle sunulan tablet bilgisayar öğretim programının etkililiği* [Effectiveness of tablet computer instruction program (tacıp) presented via audio-visual technologies on teaching the use of tablet computer to students with intellectual disability]. (Tez No. 373611). [Master's Thesis, Anadolu University], National Thesis Center.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5)*. American Psychiatric.
- Avant, M. J. T., & Heller, K. W. (2011). Examining the effectiveness of Touch Math with students with physical disabilities. *Remedial and Special Education, 32*(4), 309-321.
- Badır, T. (2014). *Zihin engelli bireylere çıkarma işlemi öğretiminde sabit bekleme süreli öğretimle sunulan nokta belirleme tekniğinin etkililiği* [The effectiveness of the touchmath tekniği presented with constant time delay method on teaching the mentally retarded individuals subtraction]. (Tez No. 357733). [Master Thesis, Abant İzzet Baysal University], National Thesis Center.
- Baroody, A. J. (1987). The development of counting strategies for single-digit addition. *Journal for Research in Mathematics Education, 18*(2), 141-157.
- Bosseler, A., & Massaro, D. W. (2003). Development and evaluation of a computer- animated tutor for vocabulary and language learning in children with autism. *Journal of Autism and Developmental Disorders, 33*, 653-672.
- Bullock, J. K., Pierce, S., & McClelland, L. (1989). *Touch Math: The touch point approach for teaching basic math computation*. Colorado Springs.
- Burke, R. V., Anderson, M. N., Bowen, S. L., Howard, M. R., & Allen, K. D. (2010). Evaluation of two instruction methods to increase employment options for young adults with autism spectrum disorders. *Research in Developmental Disabilities, 31*(6), 1223-1233.
- Can-Çalık, N. (2008). *Genel eğitim sınıflarında eğitim gören zihin engelli öğrencilere temel toplama becerilerinin öğretiminde nokta belirleme tekniğinin etkililiğinin incelenmesi* [The investigation of the effectiveness of the instruction with the touch math technique on the basic summation skills of the students with mild mental retardation in the regular classes]. (Tez No. 232004). [Master's Thesis, Ankara University], National Thesis Center.
- Cawley, J. F. (1978). *An instructional design in mathematics: Teaching the learning- disabled adolescent*. Houghton Mifflin Company.
- Cihak, D. F., & Foust, J. L. (2008). Comparing number lines and touch points to teach addition facts to students with autism. *Focus on Autism and Other Developmental Disabilities, 23*(3), 131-137.
- Coleman-Martin, M. B., Heller, K. W., Cihak, D. F., & Irvine, K. L. (2005). Using computer-assisted instruction and the nonverbal reading approach to teach word identification. *Focus on Autism and other developmental disabilities, 20*(2), 80-90.
- Cresswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative*. Pearson.
- Değirmenci, D. H., & Özen, A. (2013, October 30-November 1). The effectiveness of video modeling strategy in teaching hotel card services skills to individuals with intellectual disabilities [Conference session]. 23rd National Special Education Congress, Abant İzzet Baysal University, Bolu.
- Eliçin, Ö., Dağseven Emecen, D., & Yıkmaş, A. (2013). The effectiveness of teaching basic addition procedures to children with intellectual disabilities by direct instruction method using point identification technique. *Marmara University Atatürk Faculty of Education Journal of Educational Sciences, 37*(37), 118-136.
- Engelhardt, C. R., Mazurek, M. O., & Sohl, K. (2019). Media use and sleep among boys with autism spectrum disorder, ADHD, or typical development. *Pediatrics, 134*(6), 1081-1088.
- Fletcher, D., Boon, R. T., & Cihak, D. F. (2010). Effects of the touchmath program compared to a number line strategy to teach addition facts to middle school students with moderate intellectual disabilities. *Education and Training in Autism and Developmental Disabilities, 45*(3), 449-458.

- Fletcher-Watson, S., Petrou, A., Scott-Barrett, J., Dicks, P., Graham, C., O'Hare, A., ... & McConachie, H. (2016). A trial of an iPad™ intervention targeting social communication skills in children with autism. *Autism, 20*(7), 771-782.
- Genç, E. D., Issı, H. N., & Yıldız, O. (2017). A mobile application based on point detection technique for mathematics teaching. *Istanbul Journal of Innovation in Education, 3*(1), 55-62.
- Horner, R. H., Carr, E. G., Halle, J., McGee, G. Odom, S., & Wolery, M. (2005). The use of single subject research to identify evidence-based practise in special education. *Exeptional Children, 2*(71), 165-180.
- Jordan, N. C., Kaplan, D., Ramineni, C., & Locuniak, M. N. (2007). Predicting first-grade math achievement from developmental number sense trajectories. *Learning Disabilities Research & Practice, 22*(1), 36-46.
- Kagohara, D. M., van der Meer, L., Ramdoss, S., O'Reilly, M. F., Lancioni, G. E., Davis, T. N., ... & Sutherland, D. (2013). Using iPods® and iPads® in teaching programs for individuals with developmental disabilities: A systematic review. *Research in Developmental Disabilities, 34*(1), 147-156.
- King, S. A., Lemons, C. J., & Davidson, K. A. (2016). Math interventions for students with autism spectrum disorder: a best-evidence synthesis. *Exceptional Children, 82*(4), 443-462.
- Koegel, L. K., Singh, A. K., & Koegel, R. L. (2013). Improving motivation for academics in children with autism. *Journal of Autism and Developmental Disorders, 43*(9), 2114-2123.
- Kot, M. (2019). *Zihin yetersizliği olan öğrencilere çarpma ve bölme işlemlerinin öğretiminde nokta belirleme tekniğinin farklı sunumlarının karşılaştırılması* [Comparison of different presentations of touchmath technique in the teaching of multiplication and division processes for intellectual disability]. (Tez No. 597428). [Master Thesis, Bolu Abant İzzet Baysal University], National Thesis Center.
- Kramer, T., & Krug, D. A. (1973). A Rationale and Procedure for Teaching Addition. *Education and Training of the Mentally Retarded, 8*(3), 140-5.
- Kurt, O. (2012). Sosyal geçerlik [Social validity]. In E. Tekin-İftar (Ed.), *Eğitim ve davranış bilimlerinde tek-denekli araştırmalar* [Single-subject research in education and behavioral sciences]. (pp. 375-402). Turkish Psychologists Association.
- Littlefield, L. (2003). A comparison of two methods of addition instruction, touchpoints and manipulatives, with first grade students with learning disabilities in a resource classroom to determine efficiency and effectiveness. [Unpublished doctoral dissertation]. University of Kentucky.
- Lorah, E. R., Tincani, M., Dodge, J., Gilroy, S., Hickey, A., & Hantula, D. (2015). Evaluating picture exchange and the iPad™ as a speech generating device to teach communication to young children with autism. *Journal of Developmental and Physical Disabilities, 27*(6), 881-896.
- Lord, C., Elsabbagh, M., Baird, G., & Veenstra-Vanderweele, J. (2018). Autism spectrum disorder. *The Lancet, 392*(10146), 508-520.
- Massaro, D. W., & Bosseler, A. (2006). Read my lips: The importance of the face in a computer-animated tutor for vocabulary learning by children with autism. *Autism, 10*(5), 495-510.
- Ministry of National Education [MoNE] (2008). *Özel eğitim ve rehabilitasyon merkezi zihinsel engelli bireyler destek eğitim programı* [Special education and rehabilitation center mentally disabled individuals support education program]. Ankara. Access of date: 23.04.2023
- Minsheu, N. J., Goldstein, G., Taylor, H. G., & Siegel, D. J. (1994) Academic achievement in high functioning autistic individuals. *Journal of Clinical and Experimental Neuropsychology, 16*(2), 261-270.
- Murdock, L. C., Ganz, J., & Crittendon, J. (2013). Use of an iPad play story to increase play dialogue of preschoolers with autism spectrum disorders. *Journal of autism and developmental disorders, 43*, 2174-2189.
- Newman, T. M. (1994). *The effectiveness of a multisensory approach for teaching addition to children vwith Down syndrome*. [Unpublised master thesis]. McGill University.
- Nuhoğlu, H., & Eliçin, Ö. (2013). The use of pointing technique (Touch Math) in teaching mathematics skills. *Ankara University Faculty of Educational Sciences Journal of Special Education, 14*(01), 021-036.

- Öncül, N., & Yücesoy Özkan, Ş. (2010). Teaching the daily living skills to adults with moderate and severe intellectual disabilities using video modeling. *Anadolu University Journal of Social Sciences*, 10(3), 143-156.
- Özkan, Y. Ş. (2013, October 30-November 1). Comparison of teaching video models in which peers and individuals themselves are models in teaching first aid skills to children with intellectual disabilities. [Conference session]. *23rd National Special Education Congress, Abant İzzet Baysal University, Bolu*.
- Öztürk, H. Z. (2016). *Tablet bilgisayar üzerinde eş zamanlı ipucuyla sunulan Nokta Belirleme Tekniğinin rakam-nesne eşlemesi öğretiminde etkililiği* [The effectiveness of touch math to teach number-object matching via simultaneous prompting on a tablet computer]. (Tez No. 418154). [Master Thesis, Bolu Abant İzzet Baysal University], National Thesis Center.
- Parsons, S., & Cobb, S. (2014). State-of-the-art of virtual reality technologies for children on the autism spectrum. *European Journal of Special Needs Education*, 29(3), 355-366
- Pupo, M. (1994). Teaching intellectually disabled students addition through a multisensory approach. [Unpublished master thesis]. McGill University.
- Robertson, A. E., & Ne'eman, A. D. (2012). Autistic acceptance, the college campus, and technology: Growth of neurodiversity in society and academia. *Disability Studies Quarterly*, 32(4).
- Sani-Bozkurt, S. (2012). *Otizimli çocuklara rol oyun becerilerinin öğretiminde akran ve yetişkin modelin kullanıldığı video modelin etkililiği ve verimliliği* [The effectiveness and efficiency of video modeling where peer and adult model used in teaching role playing skills to children with autism]. (Tez No. 298168). [Master's Thesis, Anadolu University], National Thesis Center.
- Schlosser, R. W., Wendt, O., Angermeier, K., & Shetty, M. (2014). Searching for evidence in augmentative and alternative communication: Navigating a scattered literature. *Augmentative and Alternative Communication*, 20(4), 233-255.
- Simon, R., & Hanrahan, J. (2004). An evaluation of the Touch Math method for teaching addition to students with learning disabilities in mathematics, *European Journal of Special Needs Education*, 19(2), 191-209. <https://doi.org/10.1080/08856250410001678487>
- Sneider, C., & Beals, K. (2006). Scaffolding the writing of students with disabilities through procedural facilitation: Using an Internet-based technology to improve performance. *Learning Disability Quarterly*, 29(1), 9-29.
- Tekin-İftar, E. (2012). Çoklu yoklama modelleri [Multiple porobe models]. In E. Tekin-İftar (Ed.), *Eğitim ve davranış bilimlerinde tek-denekli araştırmalar* [Single-subject research in education and behavioral sciences] (pp. 217-243-402). Nobel.
- Tekin-İftar, E., & Kırcaali-İftar, G. (2004). *Özel eğitimde yanlışsız öğretim yöntemleri* [Errorless teaching methods in special education]. Nobel.
- Velasco, V. (2009). *Effectiveness of touch math in teaching addition to kindergarten students* (Publication No. 1472250). [Doctoral dissertation, California State University]. ProQuest Dissertations & Theses Global.
- Whyte, E. M., Smyth, J. M., & Scherf, K. S. (2018). Designing serious game interventions for individuals with autism. *Journal of Autism and Developmental Disorders*, 48(12), 2714-2730.
- Williams, K. F. (2013). *The use of video prompting via an iPad® and a system of least-to-most prompting to teach individuals with moderate intellectual disabilities the vocational task of rolling silverware* (Publication No. 3604848). [Doctoral dissertation, Liberty University]. ProQuest Dissertations & Theses Global.
- Yıkılmış, A. (2016). Effectiveness of the touch math technique in teaching basic addition to children with Autism. *Educational Sciences: Theory & Practice*, 16(3), 1005-1025.

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 40%

Author 2: 30%

Author 3: 30%

Conflict Statement

There is no material or individual organic connection with the people or institutions involved in the research and there is no conflict of interest in the research.

Genişletilmiş Türkçe Özet



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Otizm Spektrum Bozukluğu Bulunan Çocuklara Basit Toplama İşlemi Öğretiminde Nokta Belirleme Tekniğinin Tablet ile Sunumunun Etkililiği

Giriş

Otizm spektrum bozukluğu [OSB], yaygın olarak görülen gelişimsel bozukluklar arasında yer alır. OSB, kişiler arası iletişim ve etkileşimde zorluklar, tekrarlayıcı davranışlar ve sınırlı ilgi alanları ile karakterizedir (American Psychiatric Association [APA], 2013). Bu bireyler, dil veya sembolik oyun becerilerinde 3 yaşından önce gecikme veya atipik bir fonksiyonellik gösterebilirler. Ayrıca, günlük yaşam becerileri ve akademik yeteneklerde eksiklikler yaşayabilirler. OSB tanılı bireylerde sıklıkla sensoriyel duyarlılıklar gözlemlenir; bu, ışığa veya sese aşırı duyarlılık şeklinde belirebilir (Lord et al., 2018; Rogers & Ozonoff, 2005).

Günlük yaşamda bağımsızlık için matematik becerileri büyük önem taşır. Sayma, sayılar, para kullanımı, alışveriş, zaman kavramı, şekiller ve problem çözme gibi matematik becerileri, gelişimsel yetersizliği olan bireyler için hayati öneme sahiptir (Millî Eğitim Bakanlığı [MEB], 2008). Bu nedenle, OSB tanısı almış bireylerin günlük yaşamda bağımsız olabilmeleri için bu becerilerin kazandırılması esastır.

OSB tanılı öğrencilere matematik becerileri kazandırmak için uygulanan yöntemlerin, bu becerilerin daha etkili ve kalıcı öğrenilmesine yardımcı olabileceği belirtilmiştir (King vd., 2016). Nokta belirleme tekniği, bu yöntemlerden biridir ve zihinsel yetersizliği olan öğrencilere toplama işlemi öğretimi için Kramer ve Krug (1973) tarafından geliştirilmiştir. Bu teknik daha sonra dört işlem becerisinin öğretimi için genişletilmiştir (Bullock vd., 1989). Teknik, çok duyulu bir yaklaşım sunar ve öğrencilere rakamları hem görsel hem de dokunsal olarak öğretir (Nuhoğlu & Eliçin, 2013; Vinson, 2004). Teknolojik araçların, özellikle tabletlerin, OSB tanılı bireylerin akademik beceri kazanımında etkili olduğu gözlemlenmiştir (Acungil, 2014; Bosseler & Massaro, 2003; Eliçin, 2015; Öztürk, 2016).

Teknolojik araçlar, özellikle tabletler, otizm spektrum bozukluğu [OSB] olan bireyler için eğitim ve iletişimde devrim yaratmıştır. Tabletler, dokunmatik ekranlarıyla bireylerin kendilerini ifade etmelerine yardımcı olurken, OSB için özel uygulamalar kişiselleştirilmiş öğrenme deneyimleri sunar (Schlosser vd., 2014; Fletcher-Watson vd., 2016). Sanal gerçeklik ve dijital oyunlar, sosyal becerilerin geliştirilmesi ve bilişsel-motor becerilerin artırılmasında faydalıdır (Parsons & Cobb, 2014; Whyte vd., 2018). Ancak, tabletlerin aşırı kullanımı, sosyal etkileşim azalması ve takıntılı davranışlarda artış gibi olumsuz sonuçlara yol açabilir (Pavlopoulou & Dimitriou, 2020; Lorah vd., 2015). Ayrıca, ekran süresinin uyku düzenini bozabileceği ve bazı bireyler için duysal yüklenmeye neden olabileceği belirtilmiştir (Engelhardt vd., 2019; Robertson & Ne'eman, 2012). Bu nedenle, tablet kullanımı dikkatli bir şekilde planlanmalıdır.

Yöntem

Bu araştırmada, tek denekli araştırma yöntemlerinden biri olan katılımcılar arası çoklu yoklama modeli tercih edilmiştir. Tek denekli araştırma, belirli bir zaman diliminde, bağımsız ve bağımlı değişkenler arasındaki ilişkiyi tek bir katılımcı üzerinde inceleyen deneysel bir yaklaşımdır (Horner vd., 2005). Katılımcılar arası çoklu yoklama modeli ise, bağımsız değişkenin etkisinin en az üç farklı katılımcı üzerinde değerlendirildiği bir modeldir ve bu modelle en az üç deneğe belirli bir beceri veya bilginin kazandırılması hedeflenir. Seçilen katılımcılar, araştırılan bağımsız değişkenin potansiyel etkisinden bağımsız olmalıdır (Tekin-İftar, 2012). Bu çalışmada, OSB tanılı üç deneğe tablet kullanılarak sunulan nokta belirleme tekniği ile basit toplama işlemi öğretiminin etkililiği ele alınmıştır. Çoklu yoklama modeli, farklı bireyler üzerinde gerçekleştirilen öğretimin etkililiğini değerlendirir ve bu sonuçların farklı bireyler için de geçerli olup olmadığını belirlemeye yardımcı olur. Bu modelin başarılı bir şekilde uygulanabilmesi için, katılımcıların ön koşul becerilere sahip olması, durumların birbirinden bağımsız ve işlevsel olarak benzer olması gerekmektedir (Tekin-İftar, 2012).

Bağımlı Değişken

Bağımlı değişken, bağımsız değişken tarafından etkilenen özellik ya da niteliktir (Cresswell, 2012, s. 115). Bu araştırmanın bağımlı değişkeni, araştırmaya katılan OSB tanısı almış bireylerin, temel toplama işlemi becerisini gerçekleştirme düzeyleridir.

Bağımsız Değişken

Bu araştırmanın bağımsız değişkeni, OSB tanısı almış olan çocuklara basit toplama işleminin öğretiminde nokta belirleme tekniğinin tablet ile sunumunun yapıldığı öğretimdir. Genellikle "TouchPoint Math" olarak adlandırılan Touch Math, özellikle öğrenme güçlüğü ve zihinsel yetersizlik çeken öğrencilerin dokunsal ve kinestetik stratejiler yoluyla temel aritmetik becerileri kavramalarına yardımcı olmak için tasarlanmış bir öğretim yaklaşımıdır.

Ortam

Araştırmanın Tokat il merkezinde bulunan Atlı Karıncalar Özel Eğitim ve Rehabilitasyon Merkezinde gerçekleştirilmiştir. Uygulamalar kurum içerisinde bulunan bireysel eğitim odasında gerçekleştirilmiştir. Oda 12m² büyüklüğündedir. Odada 1 adet kitaplık, 1 adet dolap, 1 adet masa ve 3 adet sandalye, 1 adet küçük masa ve 2 adet küçük sandalye, 1 adet yazı tahtası ve 1 adet kamera bulunmaktadır.

Araç-Gereçler

Araştırmada materyal olarak tablet ve veri toplamak amacıyla kamera ve fotoğraf makinesi, öğretim oturumları uygulama güvenilirliği veri toplama formu, toplu -günlük yoklama ve izleme oturumları uygulama güvenilirliği veri toplama formu, genelleme oturumları uygulama güvenilirliği veri toplama formu, günlük yoklama, toplu yoklama, izlenme ve genelleme oturumları veri toplama formu kullanılmıştır. Aynı zamanda pekiştireç için de ödül kutusu kullanılmıştır.

Katılımcılar

Araştırmayı gerçekleştiren uygulayıcı Tokat Gaziosmanpaşa Üniversitesi Sınıf Öğretmenliği mezunudur. Araştırma Tokat Özel Atlı Karıncalar Özel Eğitim ve Rehabilitasyon Merkezi'nde gerçekleştirilmiştir. Araştırmaya başlamadan önce öğrencilerin ailelerine yapılacak çalışma ile ilgili ayrıntılı bilgi verilmiştir. Velilerine, veli onay formu imzalatılmıştır Araştırmaya; biri pilot uygulama, üçü deney sürecinde olmak üzere 4 katılımcı dahil edilmiştir

Pilot Uygulama

Bu araştırmanın uygulanma sürecinde karşılaşılabilecek engellerin uygulamaya başlamadan önce belirlenebilmesi, düzeltilebilmesi amacıyla, araştırmanın uygulama sürecine başlanmadan pilot çalışma oturumu gerçekleştirilmiştir.

Yoklama Oturumları

Toplu yoklama oturumları, ilk öğrencide üst üste 3 oturumun verileri kararlı olana değin devam ettirilmiştir. Kararlı verilerin elde edilmesiyle birlikte ilk öğrenciyle öğretim oturumuna başlanılmıştır. İlk öğrenci öğretim oturumlarında belirlenen ölçütü karşıladığında tüm katılımcılarla birlikte tekrar toplu yoklama oturumu gerçekleştirilmiştir. Günlük yoklama oturumları, öğretim oturumu sürecinde katılımcıların istendik beceriye yönelik performansını tespit etmek için yapılmıştır.

Öğretim Oturumları

Başlama düzeyi performans belirlemek için gerçekleştirilen yoklama oturumunda kararlı verilerin elde edilmesinden sonra, nokta belirleme tekniğinin tablet sunumu ile gerçekleştirilen basit toplama işlemi öğretimi oturumlarına başlanmıştır. Öğretim oturumları Tokat Özel Atlı Karıncalar Özel Eğitim ve Rehabilitasyon Merkezi'nde gerçekleştirilmiştir. Nokta belirleme tekniğinin tablet ile sunumu açık anlatım yöntemi ile uygulanmıştır. Buna bağlı olarak öğretim süreci model olma, rehber olma ve bağımsız uygulama aşaması olmaz üzere 3 aşamadan oluşmaktadır.

İzleme ve Genelleme

Tablet ile sunulan nokta belirleme tekniği ile basit toplama işlemi öğretiminde katılımcılar bağımsız bir şekilde basit toplama işlemi becerisini gerçekleştirebildiklerinde kalıcılığını tespit etmek amacıyla izleme oturumları gerçekleştirilmiştir. İzleme oturumu öğrenme gerçekleştikten birinci, ikinci ve üçüncü hafta sonunda gerçekleştirilmiştir. Başlama düzeyi yoklama oturumunda olduğu gibi izleme oturumu da katılımcıların hedeflenen beceriyi gerçekleştirme performanslarını tespit etmek için uygulanmıştır.

Güvenirlilik

Araştırmada gözlemciler arası güvenirlilik verileri ve uygulama güvenirliliği toplanmıştır. Araştırmanın güvenirlilik verileri lisansüstü eğitimi tamamlamış olan bir özel eğitim uzmanı ve başka bir alanda lisansüstü eğitimini tamamlamış bir kişi tarafından toplanmıştır.

Sosyal Geçerlik

Bağımlı ve bağımsız değişkenlerin sosyal yönden gerekliliğini tespit etmek için katılımcıların yakınlarının bağımlı ve bağımsız değişkenlere yönelik değerlendirmeleri için toplanan veridir (Kurt, 2012, ss. 375-376). Sosyal geçerlik verilerinin toplanabilmesi için öğrenci sosyal geçerlik veri toplama formu, veli sosyal geçerlik veri toplama formu ve öğretmen sosyal geçerlik veri toplama formu olmak üzere 3 adet form oluşturulmuştur.

Bulgular

Ahmet'e ait bulgular bakıldığında, başlama düzeyini belirlemek için gerçekleştirilen toplu yoklama oturumunda elde edilen verilere göre doğru tepki yüzdesinin %0 olduğu görülmektedir. Öğretimin başlamasından sonra gerçekleştirilen dokuz toplu yoklama oturumu sonundan Ahmet'in basit toplama işleminde %100 doğru tepki verdiği görülmüştür. Bu verilere bakılarak toplama işlemi öğretiminde nokta belirleme tekniğinin tablet ile sunumunun Ahmet üzerinde etkili olduğu görülmüştür. Aslı'ya ait bulgular incelendiğinde, başlama düzeyini belirlemek için gerçekleştirilen toplu yoklama oturumunda elde edilen verilere göre doğru tepki yüzdesinin %0 olduğu görülmektedir. Başlama düzeyini belirlemek için önceden hazırlanan 10 basit toplama işleminde doğru cevap sayısı 0'dır. Öğretim oturumları sonrasında gerçekleştirilen 6 toplu yoklama oturumlarında da Aslı'nın basit toplama işleminde %100 doğru tepki verdiği görülmüştür. Bu verilere bakılarak toplama işlemi öğretiminde nokta belirleme tekniğinin tablet ile sunumunun Aslı üzerinde etkili olduğu görülmüştür. Çınar'a ait veriler incelendiğinde, başlama düzeyini belirlemek için gerçekleştirilen toplu yoklama oturumunda elde edilen verilere göre doğru tepki yüzdesinin % 0 olduğu görülmektedir. Çınar'ın basit toplama işleminde %100 doğru tepki verdiği görülmüştür. Bu verilere bakılarak toplama işlemi öğretiminde nokta belirleme tekniğinin tablet ile sunumunun Çınar üzerinde etkili olduğu görülmüştür.

Ahmet, Aslı ve Çınar'ın gerçekleştirilen izleme oturumlarında basit toplama işlemine yönelik doğru cevap yüzdesinin %100 olduğu, verilere bakıldığında açık anlatım yöntemiyle uygulanan nokta belirleme tekniğinin tablet ile sunumunun basit toplama işlemi öğretimi tamamlandıktan 7, 14 ve 21 gün sonra da katılımcıların doğru cevap yüzdelerinin %100 olduğu görülmektedir.

Ahmet, Aslı ve Çınar'ın ön test oturumunda doğru tepki yüzdeleri %0 iken son test oturumunda doğru tepki yüzdelerinin %100 olduğu görülmektedir. Bu bulgulara bakıldığında Ahmet, Aslı ve Çınar'ın doğru tepki yüzdelerinin %100 olması, OSB tanısı almış olan çocuklara toplama işlemi öğretiminde nokta belirleme tekniğinin tablet ile sunumunun, kazanılan becerinin farklı ortam ve farklı kişilere genellenmesinde etkili olduğunu göstermektedir.

Katılımcılara uygulanan sosyal geçerlilik formundan elde edilen bilgiler doğrultusunda, tüm katılımcıların toplama işleminin yaşamlarında önemli olduğunu, nokta belirleme tekniğinin öğretiminde kullanılmasından honut olduklarını ve bu sayede toplama işlemini öğrenebildiklerini ifade etmişlerdir.

Ebeveynlerin tamamı; toplama işleminin yaşam boyu gerekli ve önemli bir beceri olduğunu, yapılan öğretim ile birlikte çocuklarının toplama işlemi yapma becerisinde gelişme olduğunu ve bu nedenle nokta belirleme tekniğinin faydalı ve etkili olduğunu ifade etmişlerdir.

Öğretmenler tamamı ise öğretim sürecinde öğrencilerin toplama işlemi yaoma becerilerinde olumlu yönde farklılık olduğunu, tablet ile yapılan sunumların öğrenci motivasyonunu artırmada etkili olduğunu, bu yöntemi farklı öğrenciler içinde kullanacaklarını ve tablet üzerinden sunulan nokta belirleme tekniğini diğer meslektaşlarına önereceklerini ifade etmişlerdir.

Tartışma ve Sonuç

Araştırma sonuçları, OSB tanılı çocuklara tablet ile sunulan nokta belirleme tekniğiyle toplama işlemi öğretiminin etkili olduğunu göstermektedir. Bu teknik, öğrencilere kazandırılan beceriyi sürdürdürebilmeleri ve farklı ortamlara genelleyeabilmeleri için faydalıdır. Ancak, tabletlerin OSB tanılı bireylerde aşırı uyarılmaya yol açabileceği ve tekrarlayıcı davranışları teşvik edebileceği belirtilmiştir (Kuznekoff vd., 2015; Boucenna vd., 2014). Yine de tabletlerle yapılan eğitimin birçok olumlu yönü vardır ve nokta belirleme tekniği, dokunsal bir yaklaşım sunarak öğrenmeyi destekler (Anderson vd., 2017). Araştırma bulguları, alan yazınında da desteklenen nokta belirleme tekniğinin etkililiğini teyit etmektedir (Badır, 2014; Velasco, 2009; Yıkılmış, 2016). OSB tanılı çocuklara tablet ile sunulan nokta belirleme tekniğiyle toplama işlemi öğretimi etkilidir. Ancak, öğrenciler arasında öğrenme sürecinde bireysel farklılıklar gözlemlenmiştir. Örneğin, Ahmet için 9, Aslı için 7 ve Çınar için 8 öğretim oturumu gerçekleştirilmiştir. Bu çalışmanın bulguları, Yıkılmış (2016), Cihak ve Foust (2008) ve Fletcher ve diğerleri (2010) gibi önceki çalışmalarla tutarlıdır. Ancak bu çalışma, nokta belirleme tekniğini tablet üzerinden sunarak alan yazınına yeni bir katkı sağlamaktadır.

Araştırmada, OSB tanılı çocukların tablet ile sunulan nokta belirleme tekniğiyle toplama işlemi becerisini sürdürdürebildikleri, bu beceriyi farklı ortamlara ve kişilere genelleyeabildikleri ve teknik hakkında olumlu görüşlere sahip oldukları tespit edilmiştir. Öğrencilerin, velilerin ve öğretmenlerin bu tekniği etkili bulduğu görülmüştür. Öğrencilerin %100 başarıyla toplama işlemi becerisini sürdürdükleri belirlenmiştir (Badır, 2014; Çalık 2008; Eliçin ve diğerleri, 2013). Genelleme yeteneği, önceki çalışmalarla tutarlıdır (Avant & Heller, 2011; Yıkılmış, 2016). Öğrenci, veli ve öğretmen görüşleri de teknik hakkında olumlu bulgular sunmaktadır (Badır, 2014; Can-Çalık, 2008). Bu çalışma, teknik hakkında öğrenci, veli ve öğretmen görüşlerini inceleyen ilk araştırma olup, alan yazınına katkı sağlamaktadır.

Öneriler

Uygulama Önerileri

1. Öğretmenlere nokta belirleme tekniğinin planlanması ve uygulanması konusunda eğitim verilmesi önerilmektedir.

2. Nokta belirleme tekniğinin tablet üzerinden sunulması sadece toplama işlemleri için değil aynı zamanda çıkarma, çarpma ve bölme işlemleri için de önerilmektedir.

Gelecekteki Araştırmalara Yönelik Öneriler:

1. Araştırmanın katılımcıları OSB (Otizm Spektrum Bozukluğu) tanısı alan öğrencilerden oluşmaktadır. Gelecekte yapılacak araştırmalarda, özel gereksinimli ve diğer engelleri olan bireylere

temel toplama işlemlerinin öğretilmesi amacıyla nokta belirleme tekniğinin tabletlerde sunulmasına yönelik çalışmaların yapılması önerilmektedir.

2. Bu çalışmanın katılımcı sayısı üç öğrencidir. Nokta belirleme tekniğinin etkililiğini araştıran çalışmaların daha geniş çalışma grupları ile yapılması önerilmektedir.

3. Bu çalışmada nokta belirleme tekniğinin tabletlerde sunulmasının etkililiği araştırılmıştır. Nokta belirleme tekniğinin tabletlerde sunumunun etkililiğini farklı sunumlarla karşılaştıracak çalışmaların yapılması önerilmektedir.

4. Nokta belirleme tekniğinin verimlilik açısından farklı öğretim teknikleriyle karşılaştırılması önerilmektedir.


5. Bu çalışmada, temel toplama işlemlerinin öğretiminde nokta belirleme tekniğinin tabletlerde sunulmasının etkililiği araştırılmıştır. Daha karmaşık toplama işlemlerinin öğretilmesinde nokta belirleme tekniğinin etkililiğinin araştırılması önerilmektedir.





<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Undergraduate Students in Vocational Music Education's Using Social Media to Improve their Instrument Playing Skills

 Sami Emrah Gerekten, Asst. Prof., Corresponding Author
Afyon Kocatepe University State Conservatory, Türkiye
genc.sami.07@hotmail.com
Orcid ID: 0000-0002-6362-0704

 Emre Şengün, Music Teacher and Master Student
Afyon Kocatepe University Social Sciences Institute, Türkiye
emre.sngn15@gmail.com
Orcid ID: 0000-0001-5769-3969

 Erol Atmaca, Music Teacher and Master Student
Afyon Kocatepe University Social Sciences Institute, Türkiye
atmacaerol0715@gmail.com
Orcid ID: 0000-0003-2221-6462

Article Type: Research Article

Received Date: 27.02.2023

Accepted Date: 27.10.2023

Published Date: 30.10.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: 10.29329/tayjournal.2023.610.08

Citation: Gerekten, S. E., Şengün, E., & Atmaca, E. (2023). Undergraduate students in vocational music education's using social media to improve their instrument playing skills. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 873-901.

Abstract

The research is a mixed method study that aims to examine the utilisation of social media platforms by undergraduate vocational music education students to improve their instrumental skills from various aspects. The questionnaire form prepared by the researchers was used to collect the quantitative data obtained from the study group and the interview form prepared by the researchers was used to collect qualitative data. The data obtained in the study were analysed bidirectionally as quantitative and qualitative. The quantitative data analysis of the research was carried out by descriptive analysis method. The quantitative data obtained were presented with relevant frequency and percentage calculations. Qualitative data were analysed through content analysis. The data obtained after the analysis were presented to the reader as codes, categories and themes. In the study, quantitative data on the social media platforms that undergraduate students use predominantly when they turn to social media platforms with the motivation of improving their instrument playing skills, the distribution of the main factors in choosing these platforms, and the post owners they follow the most were accessed. In addition, qualitative findings were obtained regarding the reasons why students prefer social media platforms, their opinions on the advantages offered by these platforms, and the effective factors in choosing the music genres on the platforms. As a result of the study, it was seen that students used platforms effectively in developing their instrument playing skills and it was understood that they actively included the content on these platforms in their self-regulated learning processes

Keywords: Social media, music education, instrument education, instrument playing, mixed method research.

Introduction

People on earth now live 'in an interconnected network society that is globally and locally interwoven' (Castells, quoted in Toprak et al., 2009, p. 25). For this networked society, the internet has begun to be accepted as a 'social space' (Kaplan & Haenlein, 2009, p. 60). The internet has started to be used primarily in areas such as communication and information (Valkenburg and Peter, 2009), and especially through social media platforms, the sharing of information and news has evolved to a different position than in the past (Newman et al., 2012).

Social media is a concept that refers to web-based platforms that 'represent the totality of tools, services and applications that enable users to interact using network technologies' (Boyd, 2008, p. 92). It is known that the number of users has reached 4.7 billion worldwide according to data from July 2022 (Statista, 2022). Social media platforms, as a communication tool through which people can get the information they need (Kim et al., 2016; Lin and Liu, 2012; Timisi, 2003), have become a widely used tool in the context of access to information and skills development (Haase & Young, 2010).

There are many studies (Kabilan et al., 2010; Seaman and Tinti-Kane, 2013; Wang et al., 2013) that show that social media platforms are also used in the field of education. These platforms offer many opportunities to students in terms of social interaction and quick access to information sources in any environment (Paul et al., 2022). The quality of the teaching-learning process can be enhanced by some of the advantages they offer (Moran et al., 2011; Tess, 2013) and they allow people to shape the learning process directly or indirectly (Jones et al., 2010). It can be seen that these platforms are preferred in the field of education, especially in prominent topics such as "collaborative learning" (Cayari, 2018; Pettenati and Ranieri, 2006), "informal learning" (Sabaawi and Dahlan, 2017), "microlearning" (Mujica et al., 2021) and "self-regulated learning" (Matzat, & Vrieling, 2016; Turhal, 2022).

Music is another area of education that benefits from the advantages offered by social media platforms. The role of social media in music teaching and learning has increased in recent years (Chan

et al., 2015; Salavuo, 2008). Social media platforms have started to emerge as an environment where many performers, educators and academics share their musical performances, experiences, teachings and knowledge (Cayari, 2018). So much so that, according to Lei et al., (2021), video sharing platforms and social networking sites are among the most intensively used tools in music education. In fact, it is noteworthy that the YouTube application has come to the fore as an important tool used by teachers to present examples in their lessons in music education, teaching and research (Cayari, 2018; Dougan, 2014; Waldron, 2012).

At the level of instrumental education, performers, academics or teachers who have become instructors of their instruments also increase some qualifications in their teaching processes by using internet-based applications and digital content (Löchtefeld et al., 2011; Rogers et al., 2014; Yin et al., 2005). In addition to written and audio materials, such audiovisual materials have begun to be used in instrumental teaching and learning processes (Lei et al., 2021). Teachers can also share their productions related to their instruments with students through social media platforms (Giebelhausen, 2015). Thus, it is observed that these videos, performance recordings and other shared contents have become important materials in informal instrument teaching processes in the near future.

On the other hand, with the development of internet-based information technologies, individuals have become self-directed 'sharing learners' (Goksel et al., 2018). This study focuses on the situations in which students use social media applications with the motivation of improving their instrumental playing skills. It is based on the assumption that students shape their informal instrumental learning processes with 'learning to learn' and 'managing their own learning' strategies. In this context, the problem of the study is: 'What are the characteristics of the tendencies of students in vocational music education to use social media platforms to improve their instrument playing skills? Within this problem, answers were sought to the following sub-problems:

1. What are the platforms that students prefer and why, the profiles they follow on these platforms, the types of music they listen to, the types of content, and their tendencies in terms of performance techniques?
2. What are the reasons why students prefer the platforms, the factors that influence their choice of music genre to listen to, the benefits offered by these platforms and students' opinions about their expectations from the platforms?

Method

Research Design

The study is a mixed method research. Mixed method research is 'a research approach that involves the collection of qualitative and quantitative data and the integration of these two types of data' (Creswell, 2017, p 4). In mixed research method, the researcher collects and analyses quantitative and qualitative data while seeking answers to research questions (Creswell & Clark, 2018, p. 26; Tashakkori & Creswell, 2007, p. 4). Mixed methods research is preferred because it provides a wide variety of methods to enrich the research (Gorard & Taylor, 2004, p. 2). On the other hand, it allows the research problem to be addressed more comprehensively and increases validity and reliability (Creswell, 2012).

The research was conducted using a nested mixed design, which is one of the mixed methods research types. In the nested mixed design, data can be used sequentially or combined and the main idea

is addressed more comprehensively in one type of data (Bütün, 2014 as cited in Söğüt & Polat, 2020). It is used in cases where answers are sought to research questions that require the researcher to use different data sets (Creswell & Plano-Clark, 2015). This type of design is based on one data set supporting the other data set. The data set with a high importance in the research is defined as the 'primary' data set, while the data set with a lower importance value is defined as the 'secondary' data set. In other words, the research is qualitative or quantitative research, but data from alternative methods are needed to support, generalise or explain the data (Creswell & Plano-Clark, 2015). In this study, which was conducted using a nested mixed design, quantitative data was identified as 'primary' and qualitative data was identified as 'secondary'. The qualitative phase was used to enrich and support the quantitative findings.

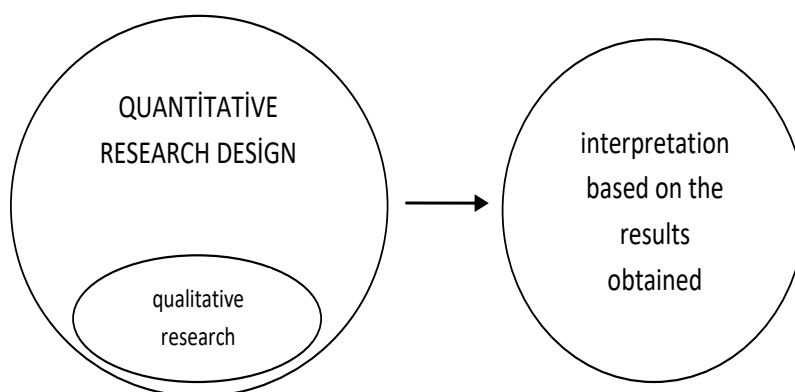


Figure 1. Nested complex mixed methods research (Toraman, 2021, p. 19)

The quantitative screening model was preferred in the part where numerical data was obtained on the use of social media to improve the instrumental skills of students in vocational music education, and the case study design was preferred in the part where in-depth qualitative data was obtained on the students' orientations. The quantitative part of the research is descriptive in nature, prepared in a quantitative survey model. The survey model is "a research approach that aims to describe a past or current situation as it is" (Karasar, 2012, p. 77). Survey research offers researchers significant advantages in presenting information from a large number of sample groups (Büyüköztürk et al., 2017). Another important advantage is that internet-based survey researches reduce the amount of time required (Robson, 2017). The qualitative part of the research is a case study. A case study is a research design that systematically examines, explores, and describes data collected through various data collection instruments about one or more situations or events (Creswell, 2013; Merriam, 2009). The case study design is based on how and why questions and allows the researcher to examine in depth a phenomenon or event that the researcher cannot control (Yıldırım & Şimşek, 2011).

Data Collection

In the research, quantitative data were collected using the questionnaire technique. Questionnaire technique is a technique that can be applied to individuals orally or in writing and allows obtaining different types of quantitative and qualitative data from the determined sample about themselves, their environment or their institution (Arıkan, 2018). It is often used to reveal the thoughts and tendencies of a large community (Büyüköztürk, 2005). In this study, web survey, which is one of the survey types, was preferred. Qualitative data were collected through an interview form with semi-structured questions.

The research began with a review of the relevant literature on the use of social media platforms for instrumental teaching/learning purposes. After determining the research design, questionnaire and interview techniques were adopted as data collection methods. The questionnaire and interview pools of questions prepared by the researchers, based on the literature, were submitted to three expert academics working in the field of music education, and necessary changes and adjustments were made. After the pilot application, the finalised forms were simultaneously presented to the study group via a Google Forms application.

In the questionnaire form, ethical approval information, introductory information about the research, participant consent section, demographic information section and research questions were presented. Three open-ended questions were included in the interview form to explore in depth the students' motivation to improve their instrumental skills and their orientation towards social media platforms. Open-ended questions are used by the respondent to share his/her thoughts or to provide a basis for a topic by supporting it with a justification (Haladayna, 1997). Volunteer participants were asked to complete both forms without a time limit. Each participant took an average of between 20 and 35 minutes to complete the process.

Data Collection Tools

In the study, the '*Social Media Use Questionnaire for Improving Instrument Playing Skills of Undergraduate Students Receiving Vocational Music Education*', consisting of closed-ended questions prepared by the researchers, was used as a quantitative data collection tool. In the questionnaire, there were first questions to determine the demographic characteristics of the students such as gender, age, school, type of school, instrument and class level. The next part was designed as three sets of questions titled 'orientations' (f: 3), 'learning content' (f: 2) and 'motivation' (f: 4) to describe undergraduate students' preference for using social media platforms to improve their instrumental playing skills. Students were asked to answer a total of 9 questions, with 2-4 questions in each question set.

Table 1. *Social media usage questionnaire for improving instrument playing skills of undergraduate students receiving vocational music education*

<p>Theme 1: Orientation</p> <p>Which social media platform's videos do you follow the most to improve your skills on your instrument? Which teachers, influencers or artists do you follow who share videos about your instrument on social media platforms?</p> <p>Which music genre do you follow more on social media platforms to improve your instrument and performance skills?</p>
<p>Theme 2: Learning Content</p> <p>What kind of content is mostly included in the videos you use for your instrument on social media platforms? What performance techniques about your instrument have you learnt or developed through social media platforms?</p>
<p>Theme 3: Motivation</p> <p>What criteria do you use when choosing the profiles/people/owners you follow on social media platforms to improve your instrument performance? In which cases do you need social media platforms for your instrument training? How do you tend to videos about your instrument on social media platforms? What are the important deficiencies you see in the posts about your instrument on social media platforms?</p>

The study used the '*Social Media Use Interview Form for Improving Instrument Playing Skills of Undergraduate Students Receiving Vocational Music Education*' as a qualitative data collection tool. The

form contained a total of 4 questions focusing on students' social media platforms, orientations towards these platforms, students' experiences and expectations. The questions in the form are as follows:

1. What is/are your reason(s) for preferring social media platforms (Facebook, YouTube, Instagram, Tiktok, etc.) for developing instrumental skills?
2. What factors influence your choice of music genre(s) that you follow on social media platforms to improve your instrument playing skills?
3. How do you benefit from posting about your individual instrument on social media platforms? And why?
4. What do you expect from the content of posts on social media platforms to improve your instrument playing skills?

Working Group

Criterion sampling, one of the purposive types of sampling, was used in the study. Criterion sampling involves pre-determining some criteria of importance and sampling events, situations, objects and people that meet these criteria (Merriam, 2013; Patton, 2002). Studies using criterion sampling are preferred in monitoring programmes (Coyne, 1997) because they provide access to rich data and increase credibility (Flick, 2014). In Türkiye, music and instrumental education is basically divided into three groups: amateur, general and vocational. Since this research focuses on the potential of vocational music education students to use social media with a focus on their professional instruments, the criteria were determined as 'participants' being in formal vocational music education at the undergraduate level' and 'using social media platforms with the motivation to improve their instrument playing skills'. The study group of the research, Undergraduate 1st, 2nd, 3rd and 4th year undergraduate students (f:295) aged 17 years and over enrolled in the autumn term of the 2022-2023 academic year in higher education institutions providing vocational music education in the western, central, southern and eastern regions of Türkiye. The participants in the study group participated in the study voluntarily. In the table below, various information about the study group (f: 295) is presented:

Table 2. Demographic information of the participants

Variables		f	%
Gender	Male	159	53.9
	Female	136	46.1
	Total	295	100
Age Range	17-20	99	33.6
	21-25	141	47.8
	26-30	26	8.8
	31-35	22	7.5
	35+	7	2.3
School Type	Conservatory	181	61.4
	Faculty of fine arts	9	3.1
	Faculty of Music and Performing Arts	4	1.4
	Faculty of Education	97	32.8
	Other	4	1.3
Class Level	License-1	88	29.8
	License-2	83	28.1
	License-3	52	17.6
	License-4	72	24.5
	Baglama/Saz	79	26.80
Instrument	Woice Training	38	12.88
	Violin	33	11.18
	Piano	30	10.19
	Guitar	26	8.81
	Flute	18	6.10
	Oud	12	4.06
	Kanun	11	3.72
	Viyola	11	3.72
	Tar	5	1.69
	Ney	4	1.35
Daily Time Spent on Social Media (Minutes)	Other	28	9.50
	1-30	27	9.02
	31-60	67	27.7
	61-90	94	31.9
	91-120	86	29.2
Time Allotted to Watching and Listening to the Instrument on Social Media Platforms of Participants (Minute)	240+	21	6.6
	1-30	104	3.7
	31-60	89	30.6
	61-90	53	18.2
	91-120	35	12
	240+	5	1.2

It can be seen that 53.9% of the students who responded to the questionnaire form are male (f: 159), 46.1% are female (f: 136) and they are mainly between 17 and 25 years old (33.6%). It can be assumed that they are mainly educated in conservatories (f: 181) and faculties of education (f: 97). The instruments played by the participants show a great variety. The instruments performed by the participants are mostly bağlama 26.80% (f: 79), singing 12.88% (f: 38), violin 11.18% (f: 33) and piano 10.19% (f: 30). The daily use of social media by the participating students is mostly between 61-120 minutes (61.1%). It can be assumed that a significant part of the participating students (66.3%) (f: 193) spend at least 30-60 minutes on these platforms when they turn to social media platforms with the motivation to improve their instrumental playing skills.

Data Analysis

The data obtained in the research was analysed bidirectionally as quantitative and qualitative. The quantitative data analysis of the research was carried out using the descriptive analysis method. Quantitative data were analysed using SPSS 22 package. Frequency and percentage calculations based on the students' responses to the questions in the questionnaire were presented to the reader.

The qualitative data were analysed using content analysis. Content analysis firstly involves coding, combining codes that are related to each other into categories or subcategories, and then arriving at themes consisting of subcategories. After organising the themes, the findings are interpreted (Eysenbach & Köhler, 2002; Merriam & Grenier, 2019; Patton, 1990). Content analysis is preferred due to its advantages in explaining the dataset at a general level and analysing the data in a systematic structure (Baltacı, 2019). In the coding of the qualitative data, collaborative coding was carried out by the researchers. Collaborative coding is preferred because it contributes to "generating new and rich codes" (Olesen et al., 1994) and "creating a shared interpretation and understanding" (Weston et al., 2001). In the process of interpreting the data obtained, some of the participants' views were conveyed through direct quotations. When these quotations were made, the participants were given pseudonyms in order to respect their confidentiality. For example, the pseudonym 'S1' identifies student number 1.

Validity and Reliability

The relevant literature (Ayhan et al., 2016; Kabilan et al., 2010; Lei et al., 2021; Uygun, 2020; Waldron, 2012;) was used in the preparation of the question pool, which contains the questions that make up the questionnaire form. The questionnaire and interview forms prepared by the researchers were reviewed by three academics who are experts in the field of music education and instrument education. The questions were edited for comprehensibility, inclusiveness, language and number according to expert opinion. After the pilot application with 5 students, the forms were finalised. Purposive criterion sampling was used to determine the sample.

To ensure the external reliability of the research, detailed information about the participants and their demographic characteristics was provided. To increase the internal reliability of the research, collaborative coding (Erickson and Stull, 1998; Schreier, 2012) was used by the researchers in the coding process during the analysis of the qualitative data, and the reliability of the codings presented to the expert academics in the field was calculated using Miles and Hubermann's (1994) reliability formula (86%). For the internal validity of the study, the integrity and consistency of the data were checked, and for the external validity of the study, the process of preparing and administering the questionnaire and interview forms and analysing the data was explained in detail. In addition, instructions on how to use the questionnaires were given to participants when they completed them and in the relevant part of the form. The research text included direct statements from the participants to describe the data in detail.

Ethical Permits of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Afyon Kocatepe University Social and Human Sciences Scientific Research and Publication Ethics Committee

Date of ethical review decision=30.09.2022

Ethics assessment document issue number=2022/283

Findings

Quantitative Findings

Findings Related to Students' Tendencies to Improve Their Instrument Playing Skills on Social Media Platforms

The social media platforms used by the students in the study group to develop their individual instrumental skills are quite diverse. When analysing the usage rates of these platforms, it can be seen that the highest number (f: 172) belongs to Youtube.

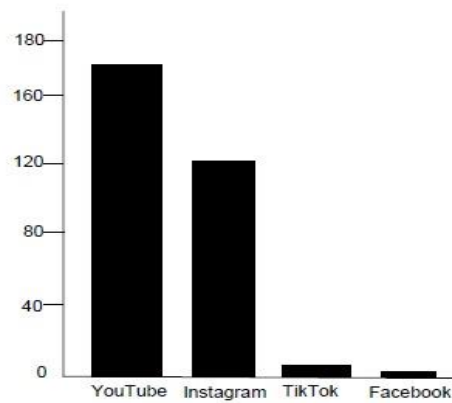


Figure 2. Platforms used by the participants to improve their instrument playing skills

YouTube (f: 119) is followed by the Instagram application. The preference rates of the other platforms used are quite low compared to YouTube. Among these platforms, Tiktok (f: 2) and Facebook (f: 1) come next. According to the data obtained from the research, there are some similarities and differences in the participants' preference of YouTube and Instagram platforms for related purposes:

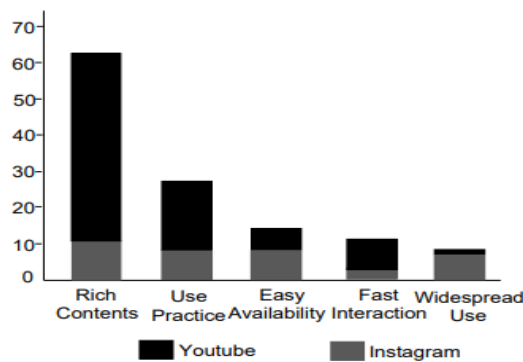


Figure 3. The reasons why participants prefer YouTube and Instagram platforms that they use to improve their instrument skills

Youtube and Instagram users cite rich content and coverage, ease and practicality of use, and prevalence and widespread use as sources of motivation. This situation is common to users of both platforms. However, Youtube is more preferred by the participants, mainly due to its features such as rich content, practicality of use and easy accessibility.

In another research question, participants were asked about the profiles they follow on social media platforms. The participants stated that they mostly follow names such as 'Çetin Akdeniz', 'Erdal Erzincan', 'Sinan Ayyıldız' and 'Muhlis Berberoğlu' among the educators, phenomena and performers who share videos about their instruments on social media platforms. Other prominent names include 'Fazıl Say', 'Hasan Genç', 'Göksel Baktagir', 'Gökhan Karakaya', 'Oğuzhan Açıköz', 'İlter Kurcala', 'İsmail Altunsaray', 'Salih Gündoğdu', 'Neşet Ertaş', 'İsmail. Tunçbilek', 'Mustafa İpekçioğlu', 'Ali Yılmaz', 'Erol Parlak', 'Muhammed Yıldırım'.

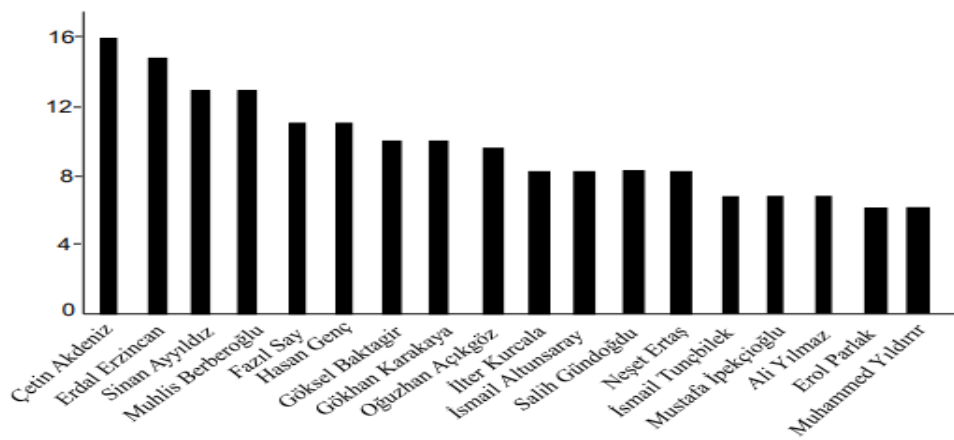


Figure 4. Educators, influencers and performers that participants utilised on social media platforms

It was observed that the music genre that participants followed more on social media platforms to improve their instrumental skills was 'Turkish folk music' (f: 80). This genre was followed by 'classical music' (f: 74) and 'Turkish art music' (f: 50).

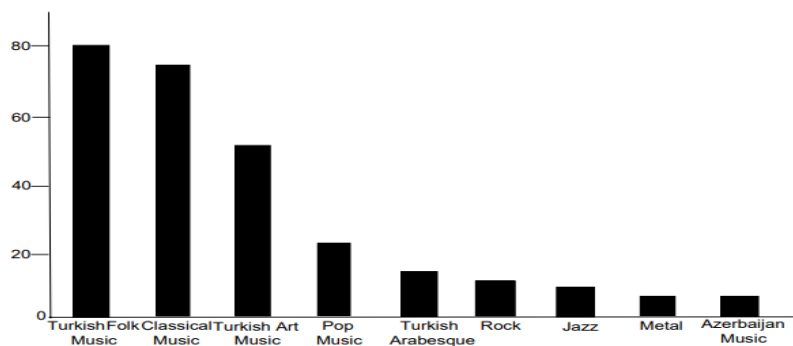


Figure 5. Types of music that participants follow on social media platforms

It is understood that participants benefited from a large number and variety of music genres when using social media platforms to improve their instrumental skills. These genres included folk music (Turkish, Azeri), classical music genres (Western classical, Turkish classical), popular music, jazz, rock and metal music genres.

Findings Related to the Learning Content that Students Use to Improve Their Instrumental Playing Skills on Social Media Platforms

The types of content in the videos used by the students in the study group to improve their instrumental playing skills on social media platforms vary considerably. When analysing the proportions of content types in these videos, the highest proportion is 'works' with 62.4% (f: 184).

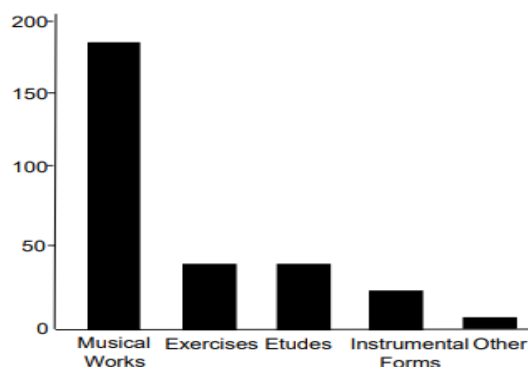


Figure 6. Distribution of videos used by participants by content

It was observed that the preference rates for other video content were quite low compared to pieces. The numerical distribution is 'exercises' (f: 41), 'etudes' (f: 39), 'instrumental forms' (f: 25). Participants focus more on learning some performance techniques on social media platforms that they use to improve their instruments.

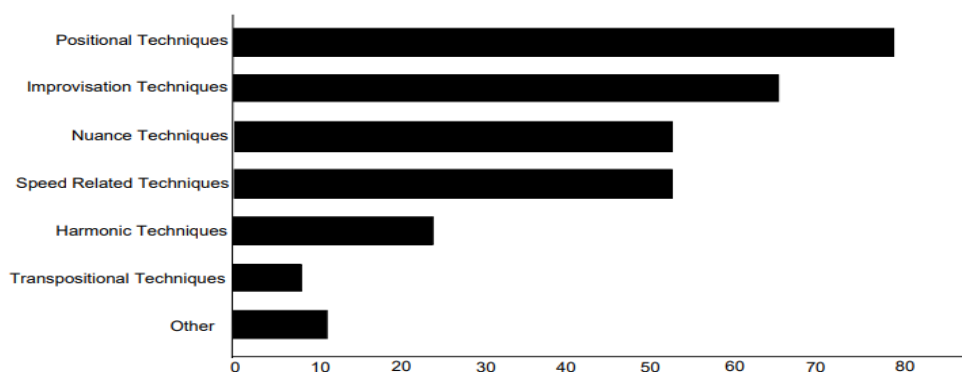


Figure 7. Instrumental performance techniques used by participants on social media platforms

According to the participants, these performance techniques are mainly 'positional techniques' (f: 80), 'improvisation techniques' (f: 66), 'speed-related techniques' (f: 53) and 'nuance techniques' (f: 53).

Findings on the Factors Influencing Students' Orientation Towards Social Media Platforms

According to the answers to the question aimed at determining the criteria according to which the participants choose the profiles/people/share owners when they turn to social media platforms to improve their instrument playing skills, a significant majority of the participants (f: 97) do not have a specific criterion.

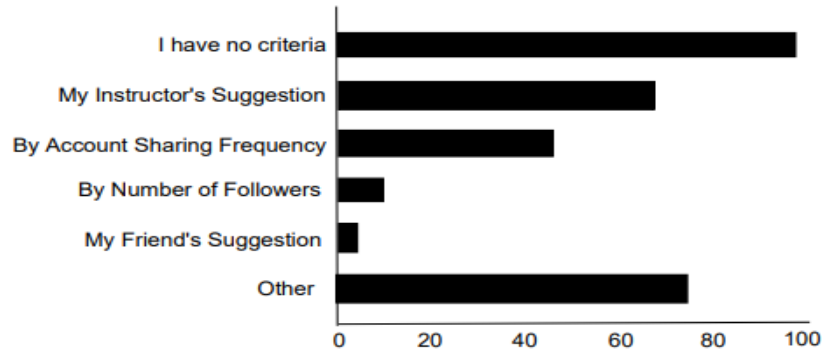


Figure 8. Motivating factors for participants' use of social media in relation to their instrument playing skills

The other group acts mainly according to criteria such as "the teacher's suggestion" (f: 73) and "according to the frequency of sharing the account" (f: 45). Analysing the answers to the question about the situations in which participants turn to social media platforms to improve their playing skills, it can be seen that a significant majority of participants (f: 234) turn to these platforms when they are looking to improve their performance skills.

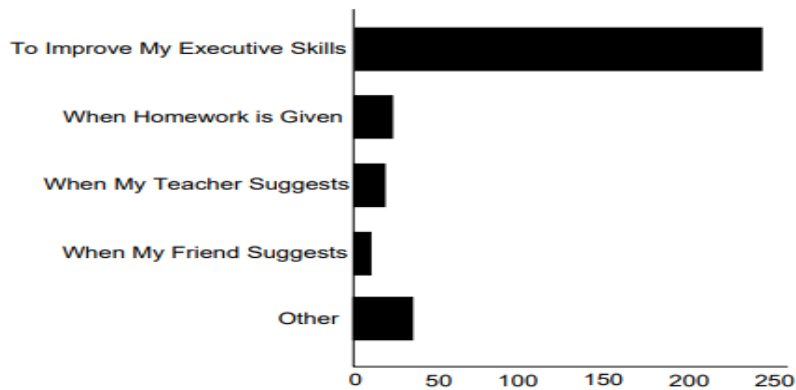


Figure 9. Participants' orientation towards social media platforms

Other participants use social media platforms for relevant purposes 'when homework is assigned' (f: 18), 'when tutorials suggest it' (f: 12), 'during exam periods' (f: 9) and 'when friends suggest it' (f: 5).

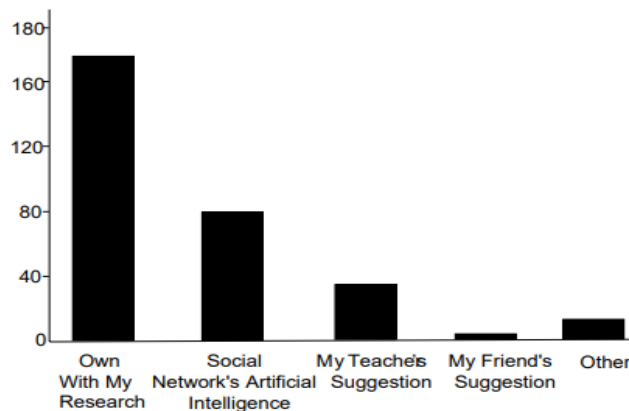


Figure 10. Different factors that lead respondents to use social media platforms

Participants tend to share information about their instruments on social media platforms mainly through 'their own research' (f: 176). In addition, factors such as 'the artificial intelligence of the social network' (f: 77) and 'teacher recommendation' (f: 33) are also effective in their orientation.

Qualitative Findings

After analysing the qualitative findings, four themes were formed as 'reasons for preferring social media platforms', 'effective factors in the selection of music genres', 'advantages offered by social media platforms' and 'expectations for social media content'.

Qualitative Findings on the Reasons Why Students Prefer Social Media Platforms (Facebook, Youtube, Instagram, Tiktok, Etc.) To Improve Their Instrument Playing Skills.

The findings in the theme of 'reasons for preferring social media platforms', which includes the data on the reasons why the participants prefer the social media platform they use to improve their instrument skills, are grouped into three categories as 'reasons for content', 'reasons for user comfort' and 'reasons for global use'. 'Reasons related to content' category is divided into 'rich content', 'reasons related to user comfort' category is divided into 'easy accessibility' and 'usage practice', 'reasons related to global usage' category is divided into 'fast interaction' and 'widespread use' subcategories.

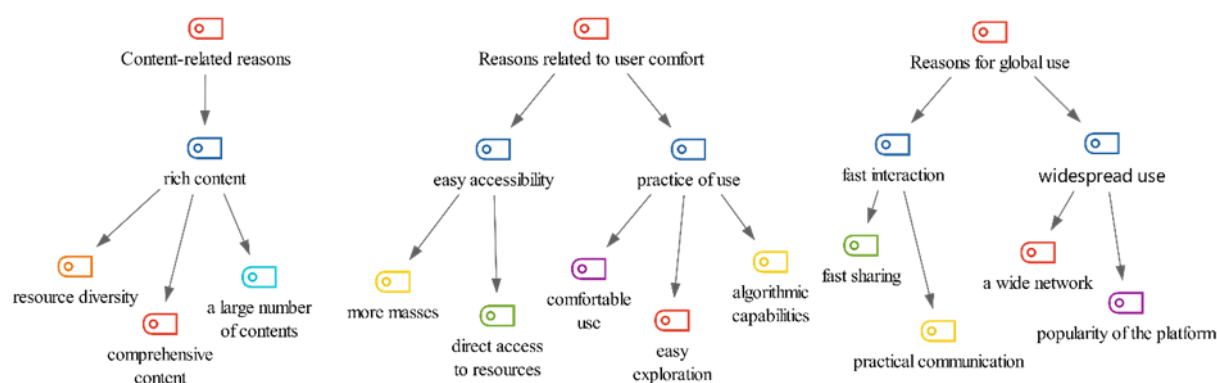


Figure 11. Code-category map for the theme of reasons for preferring social media platforms

In particular, some of the opinions of the participants who prefer the YouTube platform regarding the subcategory of 'rich content' (57.14%) emphasise the positive aspects of the platform in this sense:

'More comprehensive in terms of information. It is more useful visually and aurally. It has more data in the field of music' (S230).

'It is a more comprehensive platform. Videos can be long and detailed' (S203).

'Youtube has complete concert recordings. (...) I can reach deeper into social media' (S255).

The category of 'reasons related to content' is followed by the category of 'reasons related to user comfort'. This category has the subcategories of 'practice of use' (19.78%) and 'easy accessibility' (16.27%). Among the student opinions, there are many examples of the practical benefits of the platforms:

' (...) it gives me the chance to make a wider search. Search filters make my job easier' (S255).

'it takes me less time to reach the content I am looking for' (S226).

'I use (...) because it is more convenient in terms of slowing down, stopping and downloading the video' (S151).

Algorithmic opportunities related to the platforms in the sub-category of 'practice of use' are seen as one of the important factors for students to use these platforms more effectively and intensively:

'Because the videos are related, when I watch one, I see more related videos' (S226).

In the opinions in the 'easy accessibility' sub-category, the ease of access to the content of the platforms is mentioned:

'I have more and easier access to educational and detailed information' (S224).

'(...) I can communicate one-to-one with flutists and reach them more easily in terms of exchange' (S268).

'(...) I have wider and more up-to-date access to the works of today's artists' (S196).

The opinions in the category of 'reasons for global use' focus on the advantages of platforms being used by a large number of people and groups:

'I can reach a wider audience' (S106).

'I prefer the classical guitar community because it is more active on this platform' (S111).

Qualitative Findings on the Factors Influencing Students' Choice of Music Genre(S) to Follow on Social Media Platforms in order to Improve Their Instrumental Playing Skills.

As a result of the coding of the data obtained in the theme of 'effective factors in the selection of music genres', two categories were formed as 'personal factors' and 'social factors'. The 'personal factors' category was subcategorised as 'factors related to taste', 'factors related to education', 'affective factors'; the 'social factors' category was subcategorised as 'factors related to prevalence', 'factors related to belonging'.

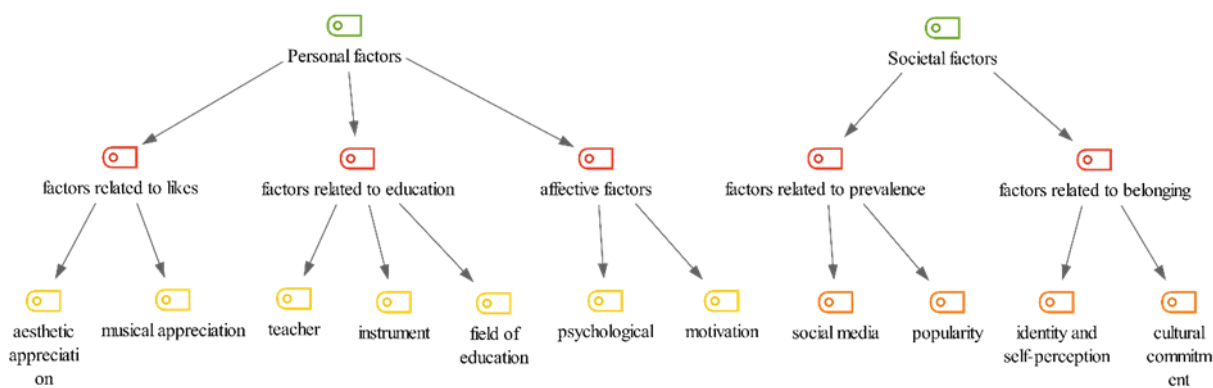


Figure 12. Code-category map for the theme of effective factors in the selection of music genres

After the coding of the participants' opinions, it is seen that the subcategory of 'factors related to tastes' is one of the most important factors in choosing the relevant music genre. When the participants turn to platforms to improve their instrument playing skills, they mostly choose music genres by prioritising aesthetic appreciation criteria:

'The sensations of the genres of music I listen to, the feelings they create, the themes they describe and deal with, and their playing styles have been effective' (S184).

'The musical world I am in and my own taste' (S63).

'I choose it because it speaks to my own soul' (S45).

Another sub-category under the category of 'personal factors' is 'factors related to education'. The participants stated that the types of music they are orientated towards on social media platforms have a direct relationship with the characteristics of the model individuals in the academic institutions where they study and the instruments they continue to learn in these institutions:

'I prefer this genre because the pieces I play on the violin are usually classical pieces and I like classical music' (S42).

'The fact that I studied Western music at the College of Fine Arts, which I am interested in. At the university I study in the folk music department' (S150).

'The meşk environments in which my instrument is used usually include classical Turkish music, so this is an important factor' (S291).

'My own department is the folk music department (...) because I like to do research in this field' (S225).

In the category of 'personal factors', there are also codes related to the participants' orientation towards music genres depending on their affective expectations:

'It is because I enjoy listening and performing' (S180).

'My interest and (...) familiarity with the ear guide me' (S268).

The second category, 'social factors', consists of subcategories related to 'prevalence' and 'belonging'. In this category, there are findings that the social interaction factor affects the type of music preferred by the participants when they use social media to improve their instrument playing skills:

'My previous life, the social factors in which I was involved and my interests' (S269).

'The environment I grew up in during my life and my tastes' (S65).

Especially the opinions in the sub-category of 'factors related to belonging' show that students' cultural characteristics are effective in their orientation towards music genres:

'(...) my loyalty to my own culture' (S22).

'(...) because I grew up in the Barak culture' (S35).

'(...) I was oriented with the influence of the geography I was in' (S61).

Qualitative Findings in Relation to the Benefits of Sharing About Their Instruments on Social Media Platforms, According to The Students

As a result of the coding of the data obtained in the theme of 'advantages offered by social media platforms', three categories were formed as 'advantages related to performance', 'advantages related to motivation' and 'advantages related to learning'. The category of 'advantages related to performance' has subcategory codes as 'learning performance techniques', 'improving performance techniques'; the category of 'advantages related to motivation' has subcategory codes as 'cognitive motivation', 'learning motivation', 'affective motivation'; and the category of 'advantages related to learning' has subcategory codes as 'increasing the quality of learning', 'awareness'.



Figure 13. Code-category map for the theme of advantages offered by social media platforms

The opinions in the category of advantages related to execution include advantages for development in different areas of execution competence:

'To develop interpretive skills by listening to different interpretations of the pieces, to learn new pieces thanks to the curiosity generated by the pieces I do not know' (S150).

'To learn the tricks of the trade for the pieces I will play in the future or the pieces I already play and to add to my current knowledge of exercises and techniques' (S235).

In the category of 'advantages related to motivation', the advantage codings obtained from the sentences in which the participants emphasised that they provided learning motivation as well as cognitive and affective motivation are as follows:

'Learning new information about my instrument and new exercises is an important benefit' (S175).

'Improving my self-confidence and my playing' (S62).

'It encourages me to improve my instrument' (S3).

According to the participants, the use of social media also offers the advantages of 'increasing the quality of learning' and 'gaining awareness' in the perspective of developing instrument playing skills. Some participant views are as follows:

'I can see and use different techniques, I can catch some points that I need to pay attention to in different pieces and I can get different information' (S37).

'Learning new pieces, techniques and harmony information is an important advantage' (S163).

'It creates an advantage in terms of changing perspective and development' (S151).

Participants mostly expressed opinions focussing on the advantage of learning performance techniques. This category was followed by codes in categories such as 'cognitive motivation', 'improving performance techniques' and 'awareness'.

Qualitative Findings Related to Students' Content Expectations from Social Media Platform Posts to Improve Their Instrument Playing Skills.

As a result of the coding of the data in the theme of 'expectations for social media content', the category of 'types of expectations' was formed. This category is divided into subcategories as 'expectations regarding content quality', 'theoretical expectations', 'practical expectations':

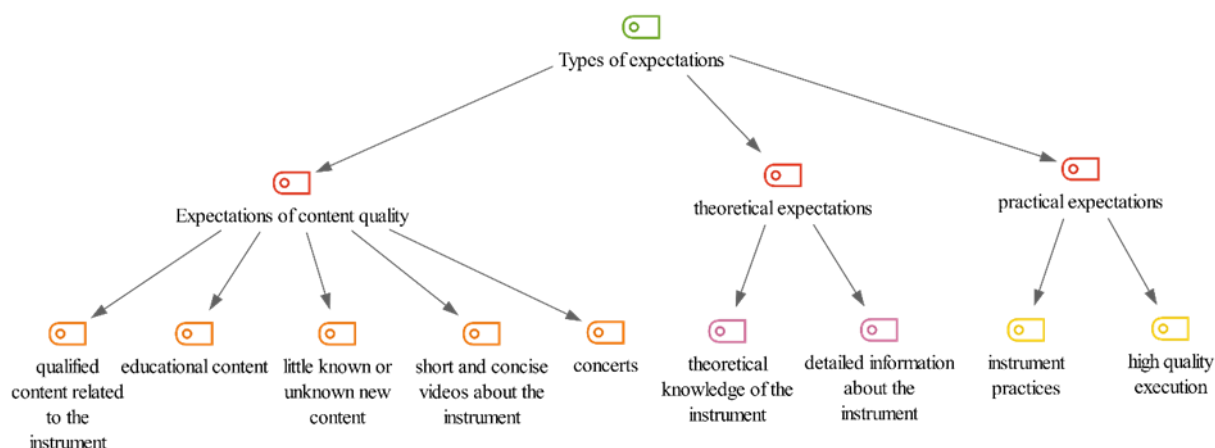


Figure 14. Code-category map of the theme of expectations towards social media content

The codes in the subcategory 'Expectations regarding the quality of content' emphasise that the content related to their instruments should have an instructive and qualified character. In addition, the participants would like to access more 'short-essential' and 'little known or unknown' content related to their instruments due to the 'fast', 'new' and 'archival' nature of social media platforms:

'There could be more exercises, etudes and recordings in the studio' (S57).

'I would like to see different and varied positions and pieces' (S286).

'I would like to see the pieces with their sheet music' (S176).

'I would like to see content about what can be done to overcome the obstacles (intonation problems, learning the wrong technique, etc.) encountered when playing the instrument' (S183).

'I would like to see new flamenco and classical pieces with their sheet music' (S178).

Some of the opinions in the 'theoretical expectations' sub-category, in which expectations regarding theoretical and detailed information about the instrument were coded, are as follows:

'I want detailed theoretical information about my instrument rather than generalisations' (S234).

'(...) I expect detailed theoretical explanations (...) rather than practice' (S37)

The opinions in the 'practice expectations' sub-category have the codes 'high quality performance expectation' and 'instrument practices' and it is understood that students have more technical concerns in these codes:

'I would like to see (...) content to push the limits of the instrument and get to better places' (S228).

'I would like to see information on positional studies (...), beginner and advanced (...) technique videos' (S157).

After analysing the data on the expectations of the participants, it was seen that the dominant codes among the categories obtained were 'instrument practices', 'instructive content' and 'little known or unknown new content'. While students act with the motivation to improve their instrument playing skills from social media, they want the next related posts to fulfil these expectations more.

Discussion and Conclusion

The aim of the research was to describe how students in vocational music education use internet-based social media platforms with a motivation to improve their instrument playing skills, and to examine their tendencies on these platforms from various aspects. The data presented in the study show that students use social media platforms as a versatile and rich 'virtual-informal learning space' to improve their instrumental skills and make these platforms part of their self-regulated music learning.

Lei et al., (2021) mentions that social media can play an important supporting role in music education. Again, social networking sites are seen by educators as the Web 2.0 application that will provide the most benefit to student interaction (Ajjan & Harsthone, 2008). Among these social networking sites, the Youtube platform is used in a wide range of educational fields, from medicine to sports, from mathematics to science (Del Valle-Ramón et al., 2020; Gayef & Çaylan, 2021; Pecay, 2017; Yücekaya et al., 2021). It was found that students in the study group mostly used the Youtube platform to improve their instrumental playing skills. Schmidt-Jones (2022) attributes this advantage of Youtube to the popularity of the platform and the expansion of educational opportunities it offers. In fact, the high diversity in the number of phenomena presented by the participating students (n: 295) provides an important indication of the richness of diversity advantage offered by the platform. When it comes to learning an instrument, Youtube is preferred by students more than other platforms due to its visual and audio details, its rich archive and its filtering function. Instagram, on the other hand, differs from Youtube for students due to its advantage of fast interaction, and students may also turn to this platform because it is used by people related to their instruments.

YouTube is especially used by professional musician-instructors for teaching purposes through structured lesson videos they produce (Waldron, 2012). It is seen that there are a considerable number of educators and academicians among the content producers that students follow on social media platforms for the purpose of improving their instrument playing skills (Atmaca & Gerekten, 2023). When the common characteristics of the most followed content producers are analysed, it is seen that they are well-known in their fields and their performance levels are at a high level.

It can be seen that students benefit from many and different genres of music when using social media platforms to improve their instrumental skills. The opinions obtained point to the themes of 'aesthetic taste' and then 'identity and self-perception' among the factors influencing this orientation. In fact, it is well known that people's aesthetic tastes are mainly shaped by the phenomenon of personality and that they tend towards any musical genre (Payne, 1967). It is understood that the same criterion has a significant impact on the participants' choice of music genres on social media platforms that they are motivated to study the instrument. It shows that they are not willing to use the aesthetically unsatisfactory content in the development of their instrumental skills.

People can create a bond of belonging between themselves and a musical genre through their identities and the geographies in which they grew up. From history to the present, there are very strong links between music, geogrwaldronaphy and identity (Hudson, 2006). This is similar with our participating students. Students may prefer content and content producers that are close to their own musical identities (MacDonald et al., 2017; Spsychiger, 2017).

Students most often use 'artefacts' as content types in the videos they use to improve their instrumental skills on social media platforms. It is interesting that the works are preferred more than the teaching materials such as exercises and etudes that are among the other options. This situation suggests that students have a 'repertoire-oriented' motivation to improve their instrumental skills.

Undergraduate students benefit from social media platforms by providing easy access to various genres of music and various musicians and make significant gains in improving their instrument playing skills. Students use social media platforms to learn to analyse music and tend to improve their playing techniques (Lei et al., 2021). The participant students of the study also utilise video sharing platforms to develop many techniques for their instruments. Among these techniques, 'positional techniques' take the lead, followed by 'improvisation techniques', 'speed-related techniques' and 'nuance techniques'.

The profiles/people/post owners that students follow on social media platforms to improve their instrumental skills are mostly reached through the suggestions and guidance of their teachers. This situation shows that teachers use these platforms to improve the quality of their educational processes. Lei et al., (2021) state that social media platforms help to improve instrument playing techniques. In parallel with this study, it is quite similar that the participating students describe the contribution of social media platforms to 'learning performance techniques' related to their instruments as the most important advantage offered by the platforms.

Students want to see more content on social media platforms where they can learn the practices related to their instruments. This situation of the students, who gave many examples of what they described as shortcomings, can be interpreted in the sense that they expect more and richer content from social media.

Recommendations

The research data is limited to students receiving vocational music education at the undergraduate level in terms of the study group. The use of social media platforms by students at other formal education levels and amateur and vocational student groups to improve their instrument playing skills can be suggested for future research. In addition, studies can be carried out with study groups consisting of instructors, performers, academicians and teachers who share on these platforms, and the data obtained can be compared with those presented by students.

Secondly, it is understood that the participating students have some expectations from these platforms to improve their instrument playing skills. However, our research was produced only within the limitation of the students who follow the post owners. There is a need for further studies on the content owners who post on social media for teaching purposes. In this context, research on social media and the motivations of the audience sharing on social media platforms can be suggested.

References

- Ajjan, H., & Hartshorne, R. (2008) Investigating faculty decisions to adopt web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education*, 11(2), 71-80.
- Arıkan, R. (2018). Anket yöntemi üzerinde bir değerlendirme [An evaluation on the survey method]. *Haliç University Journal of Social Sciences*, 1(1), 97-159.
- Atmaca, E., & Gerekten, S. E. (2023). Özengen bağlama öğrencilerinin öğrenme ihtiyaçları: Youtube deneyimleri zemininde netnografik bir çözümleme [Learning needs of amateur bağlama students: A netnographic analysis on the basis of Youtube experiences]. *Sivas Cumhuriyet University International Journal of Education*, 12(3), 760-776.
- Ayhan, A., Gürbüz, T., & Ekinci, T. (2016, September, 26-28). YouTube üzerinde dijital müzik eğitimi materyalleri yayınlayan kanallar üzerine bir araştırma: Müzikolaj örneği [A research on channels that publish digital music education materials on YouTube: The example of musicolage]. 2. *Uluslararası Müzik ve Dans Kongresi, Muğla Türkiye*.
- Baltacı, A. (2019). Nitel araştırma süreci: Nitel bir araştırma nasıl yapılır? [Qualitative research process: How to conduct a qualitative research?]. *Ahi Evran University Journal of Institute of Social Sciences*, 5(2), 368-388.
- Boyd, D. (2008). *American teen sociality in networked publics*. [Unpublished doctoral dissertation]. *University of Berkeley*
- Büyüköztürk, Ş. (2005). Anket geliştirme [Questionnaire development]. *Turkish Journal of Educational Sciences*, III/2, 133-225.
- Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö., Karadeniz, Ş., & Demirel, F. (2017). Bilimsel araştırma yöntemleri (23. baskı) [Scientific research methods (23rd ed.)]. Pegem Akademi.
- Cayari, C. (2018). Connecting music education and virtual performance practices from YouTube. *Music Education Research*, 20(3), 360-376.
- Chan, C., T., Cheng, K. T. L., & Chiu, D. K. W. (2015). Alert driven communications management for children music learning based on Suzuki method. *International Journal of Systems and Service-Oriented Engineering*, 5(3), 75-89.
- Coyne, I. T. (1997). Sampling in qualitative research. purposeful and theoretical sampling; merging or clear boundaries? *Journal of Advanced Nursing*, 26(3), 623-630.
- Creswell, J. W. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research* (4th ed.). Pearson.
- Creswell, J.W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. (3rd ed.). SAGE.
- Creswell, J. W., & Plano Clark, V. L. (2015). *Karma yöntem araştırmaları: Tasarımı ve yürütülmesi* [Mixed method research: Design and conduct]. (Y. Dede & S. B. Demir, Trans.; 2nd ed). Anı.
- Creswell, J.W. (2017). *Araştırma deseni: Nitel, nicel ve karma yöntem yaklaşımları* [Research design: Qualitative, quantitative and mixed methods approaches]. Eğiten Kitap.
- Creswell, J. W., & Clark, V. L. (2018). *Designing and conducting mixed methods research* (3th ed.). Sage.
- Del Valle-Ramón, D., Muñoz-Repiso, A., & Gómez-Pablos, V. B. (2020). Project-based learning through the youtube platform for teaching mathematics in primary education. *Education in the Knowledge Society*, 21(9).
- Dougan, K. (2014). YouTube has changed everything? Music faculty, librarians, and their use and perceptions of YouTube. *College and Research Libraries*, 75(4), 575-589.
- Erickson, K. C., & Stull, D. D. (1998). *Doing team ethnography: Warnings and advice*. Sage.
- Eysenbach, G., & Köhler, C. (2002). How do consumers search for and appraise health information on the world wide web? Qualitative study using focus groups, usability tests, and in-depth interviews. *Bmj*, 324(7337), 573-577.
- Flick, U. (2014). *An introduction to qualitative research*. Sage.
- Gayef, A., & Çaylan, A. (2021). Use of Youtube in medical education. *Konuralp Medical Journal*, 13(3), 640-647.
- Giebelhausen, R. (2015). What the tech is going on? Social media and your music classroom. *General Music Today*, 28(2), 39-46.
- Goksel, N., Hargis, J., & Mutlu, M. E. (2018, 2-4 July). Help yourself and design your own personal learning environment. *Proceedings of EDULEARN18' Conference*, Mallorca-Spain. <https://library.iated.org/view/GOKSEL2018HEL>

- Gorard, S., & Taylor, C. (2004). Combining methods in educational and social research. Open University.
- Haase, A., & Young, A., (2010). Uses and gratifications of social media: A comparison of Facebook and Instant messaging. *Bulletin of Science, Technology ve Society*, 30(5) 350 –361.
- Haladayna, T. M. (1997). *Writing test items to evaluate higher order thinking*. Allyn& Bacon.
- Hudson, R. (2006). Regions and place: Music, identity and place. *Progress in Human Geography*, 30(5), 626-634.
- Jones, N., Blackey, H., Fitzgibbon, K., & Chew, E. (2010). Get out of my space! *Computers & Education*, 54(3), 776–782.
- Kabilan, M., Ahmad, N., & Abidin, M. (2010). Facebook: An online environment for learning of english in institutions of higher education? *Internet and Higher Education*, 13(4), 179-187.
- Kaplan, M., & Haenlein, M. (2009). The fairyland of second life: about virtual social worlds and how to use them. *Business Horizons*, 52(6), 59-68.
- Karasar, N. (2012). *Bilimsel araştırma yöntemi* [Scientific research method]. (24th ed.). Nobel.
- Kim, M. J., Chung, N. H., Lee, C. K., & Preis, M. W. (2016). Dual-Route of persuasive communications in mobile tourism shopping. *Telematics and Informatics*, 33(2), 293-308.
- Lei, S. Y., Chiu, D. K., Lung, M. M. W., & Chan, C. T. (2021). Exploring the aids of social media for musical instrument education. *International Journal of Music Education*, 39(2), 187-201.
- Lin, S. W., & Liu, Y. C. (2012). The effects of motivations, trust, and privacy concern in social networking. *Service Business*, 6(4), 411-424.
- Löchtefeld, M., Gehring, S., Jung, R., & Krüger, A. (2011), 'Guitar: Supporting guitar learning through mobile projection', in CHI 2011. Vancouver: ACM, (pp. 1447–52).
- MacDonald R., Hargreaves D. J., & Miell D. (2017). *Handbook of musical identities*. Oxford University.
- Matzat, U., & Vrieling, E. M. (2016). Self-regulated learning and social media—a 'natural alliance'? Evidence on students' self-regulation of learning, social media use, and student–teacher relationship. *Learning, Media and Technology*, 41(1), 73-99.
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. Jossey-Bass.
- Merriam, S. B. (2013). *Nitel araştırma: Desen ve uygulama için bir rehber* [Qualitative research: A guide to design and implementation]. (S. Turan, Trans.), Nobel.
- Merriam, S. B., & Grenier, R. S. (2019). *Qualitative research in practice: Examples for discussion and analysis*. Jossey-Bass.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. SAGE.
- Mohmed Al-Sabaawi, M. Y., & Dahlan, H. M. (2017, April). Acceptance model of social media for informal learning. *International Conference of Reliable Information and Communication Technology*. Springer, Cham.
- Moran, M., Seaman, J., & Tinti-Kane, H. (2011). Teaching, learning, and sharing: How today's higher education faculty use social media. *Pearson Learning Solutions and Babson Survey Research Group*, 1-32.
- Mujica, A., Villanueva, E., & Lodeiros-Zubiria, M. (2021). Micro-learning platforms brand awareness using socialmedia marketing and customer brand engagement. *International Journal of Emerging Technologies in Learning (ijET)*, 16(17), 19-41.
- Newman, N., Dutton, W. H., & Blank, G., (2012). Social media in the changing ecology of news: the fourth and fifth estates in Britain. *International Journal Of Internet Science*, 7(1), 6-22.
- Olesen, V., Droes, N., Hatton, D., Chico, N., & Schatzman, L. (1994). Analyzing together: Recollections of a team approach. *Analyzing Qualitative Data*, 111-128.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. SAGE.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. SAGE.
- Paul, I., Elias, J., & Mirunalini, M. (2022). Social media and education. *JETT*, 13(2), 144-148.
- Payne, E. (1967). Musical taste and personality. *British Journal of Psychology*, 58(1-2), 133-138.
- Pecay, R. K. D. (2017). YouTube integration in science classes: Understanding its roots, ways and selection criteria. *Qualitative Report*, 22(4).

- Pettenati, M., & Ranieri, M. (2006, October 1-2). Informal learning theories and tools to support knowledge management in distributed CoPs. *Proceedings of the EC-TEL06 Workshops*, Crete-Greece. <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=c0a3680fe2a1d1789ccade7875c68ccafbbebfff#page=356>
- Robson, C. (2017). *Gerçek dünya araştırması bilimsel araştırma yöntemleri* [Real world research scientific research methods]. (Ş. Harmancı & N. Demirkasımoğlu, Trans. Eds.). Anı. (Original published date 2002).
- Rogers, K., Röhlig, A., Weing, M., Gugenheimer, J., Könings, B., Klepsch, M., Schaub, F., Rukzio, E., Seufert, T., & Weber, M. (2014). P.I.A.N.O.: Faster piano learning with interactive projection'. *Proceedings of the Ninth ACM International Conference on Interactive Tabletops and Surfaces (ITS 2014): Children and Learning*, Dresden: Germany.
- Salavuo, M. (2008). Social media as an opportunity for pedagogical change in music education. *Journal of Music, Technology of Education*, 1(2-3), 121-136.
- Schmidt-Jones, C. (2022). Instrument-based music theory on YouTube: Entries and barriers to lifelong learning. *Journal of Music, Technology and Education*, 14(1), 5-20.
- Schreier, M. (2012). *Qualitative content analysis in practice*. Sage.
- Seaman, J., & Tinti-Kane, H. (2013). *Social media for teaching and learning*. Pearson Learning Systems.
- Söğüt, M., & Polat, S. (2020). Ters-yüz sınıf modelinin etkin vatandaşlık öğrenme alanının öğretiminde kullanılmasının öğrencilerin akademik başarılarına etkisi [The effect of using the flipped classroom model in the teaching of active citizenship learning area on students' academic achievement]. *OPUS International Journal of Society Researches*, 15(24), 2472-2504.
- Spychiger M. B. (2017). From musical experience to musical identity: Musical self-concept as a mediating psychological structure. In MacDonald R., Hargreaves D. J., Miell D. (Eds.), *Handbook of musical identities* (pp. 267-287). Oxford University.
- Statista (2022). 'Social-networks', Access of date 03.10. 2022 <https://www.statista.com/topics/1164/social-networks>
- Tashakkori, A., & Creswell, J. W. (2007). The new era of mixed methods. *Journal of Mixed Methods Research*, 1(1), 3-7.
- Tess, P. A. (2013). The role of social media in higher education classes (real and virtual) – A literature review. *Computers in Human Behavior*, 29(5), 60-68.
- Timisi, N. (2003). Yeni iletişim teknolojileri ve demokrasi [New communication technologies and democracy]. Dost.
- Toprak, A., Yıldırım Eroğlu, A., Binark, F., Çomu, T., Senem, B., & Aygül, E. (2009). Toplumsal paylaşım ağı Facebook görülyorum öyleyse varım [Social network Facebook ı am seen so ı exist]. Kalkedon.
- Toraman, S. (2021). Karma yöntemler araştırması: Kısa tarihi, tanımı, bakış açıları ve temel kavramlar [Mixed methods research: A brief history, definitions, perspectives, and key elements]. *Qualitative Social Sciences*, 3(1), 1-29.
- Turhal, E. (2022). Self-regulation behaviors of music education students. *International Journal of Research in Education and Science*, 8(2), 362-377.
- Uygun, G. (2020). YouTube ortamında çalgı eğitimi veren videoların çeşitli değişkenler bakımından incelenmesi [Analysing instrumental education videos on YouTube in terms of various variables]. *Balkan Journal of Music and Art*, 2(2), 13-26.
- Valkenburg, P. M., & Peter, J. (2009). Social consequences of the internet for adolescents: A decade of research. *Current Directions in Psychological Science*, 18(1), 1-5.
- Waldron, J. (2012). Narratives from a virtual place: A cyber ethnographic case study of music learning in one online music 'community of practice'. In S. O'Neill (Ed.), *Personhood and music learning: multidisciplinary perspectives and narrative voices, canadian music educator education association biennial book series: Research to Practice*. University of Toronto.
- Waldron, J. (2013). YouTube, fanvids, forums, vlogs and blogs: Informal music learning in a convergent on and offline music community. *International Journal of Music Education*, 31(1), 91-105.
- Wang, J., Lin, C., Yu, W., & Wu, E. (2013). Meaningful engagement in Facebook learning environments: merging social and academic lives. *Turkish Online Journal of Distance Education*, 14(1), 302-322.
- Weston, C., Gandell, T., Beauchamp, J., McAlpine, L., Wiseman, C., & Beauchamp, C. (2001). Analyzing interview data: The development and evolution of a coding system. *Qualitative Sociology*, 24, 381-400.

- Yıldırım, A., & Şimşek, H. (2011). Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative Research Methods in Social Sciences]. Seçkin .
- Yin, J., Wang, Y., & Hsu, D. (2005). 'Digital violin tutor: An integrated system for beginning violin learners', in *Proceedings of the 13th Annual ACM International Conference on Multimedia (MULTIMEDIA '05)*, ACM, Singapore.
- Yücekaya, M. A., Sağın, A. E., & Uğraş, S. (2021). Physical education and sports lesson in distance education: content analysis of videos on Youtube. *IJERI: International Journal of Educational Research and Innovation*, (15), 533-551. <https://doi.org/10.46661/ijeri.5766>

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 33%

Author 2: 33%

Author 3: 33%

Conflict Statement

There is no conflict of interest in the research



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Mesleki Müzik Eğitimi Alan Lisans Öğrencilerinin Çalgı Çalma Becerilerini Geliştirmeye Yönelik Sosyal Medya Kullanımları

Giriş

Yeryüzündeki insanlar artık, 'küresel ve yerel olarak örülmüş, birbiri ile bağ(ıntı)lı bir ağ toplumunun içinde yaşamaktadır' (Castells' ten akt. Toprak vd., 2009, s. 25). Bu ağ toplumu için internetin bir 'toplumsal mekan' (Kaplan ve Haenlein, 2009, s. 60) olarak kabul edilmeye başlanmıştır. Sosyal medya, 'kullanıcıların ağ teknolojileri kullanarak etkileşimini sağlayan araç, hizmet ve uygulamaların bütününe temsil eden' (Boyd, 2008, s. 92) web tabanlı platformları işaret eden bir kavramdır.

Sosyal medya platformlarından eğitim alanında da istifade edildiğine dönük çok sayıda araştırma bulunmaktadır (Kabilan, Ahmad, & Abidin, 2010; Seaman, & Tinti-Kane, 2013; Wang vd., 2013). Müzik de sosyal medya platformlarının sunduğu avantajlardan istifade edilen bir başka eğitim alanı olarak karşımıza çıkmaktadır. Müzik öğretimi ve öğrenimi açısından, sosyal medyanın rolü, son yıllarda giderek artmıştır (Chan vd., 2015; Salavuo, 2008).

Sosyal medya platformları birçok icracı eğitimci ve akademisyenin müzikal performans, deneyim, öğreti ve bilgilerini paylaştığı bir ortam olarak karşımıza çıkmaya başlamıştır (Cayari, 2018). Öyle ki, Lei et al. nin (2021)' aktarımına göre, video paylaşım platformları ve sosyal ağ sitelerinin müzik öğretiminde en çok kullanılan araçlar olduğu anlaşılmaktadır. Hatta müzik eğitimi öğretimi ve araştırmasında öğretmenlerin derslerinde örnekler sunmak için istifade ettiği önemli bir enstrüman olarak, YouTube uygulamasının oldukça ön plana çıkması dikkati çekmektedir (Cayari, 2018; Dougan, 2014; Waldron, 2013).

Çalgı eğitimi düzleminde, çalgısında öğretici konumuna gelmiş icracı, akademisyen ya da eğitimci de internet tabanlı uygulamaları ve dijital içerikleri kullanarak öğretim süreçlerinde bazı

nitelikleri arttırmaktadır (Löchtfeld vd., 2011; Rogers vd., 2014; Yin vd., 2005). İnternet tabanlı bilgi teknolojilerinin gelişmesiyle bireylerin, kendilerini yönlendiren, paylaşan öğrenenler haline gelmiştir (Goksel vd., 2018). Bu araştırma da öğrencilerin, sosyal medya uygulamalarını çalgı çalma becerilerini geliştirme motivasyonu ile kullandıkları durumlara odaklanır ve kendi informal çalgı öğrenme süreçlerini 'öğrenmeyi öğrenme' ve 'kendi öğrenimini yönetme' stratejileri ile şekillendirdiği varsayımına dayanmaktadır. Bu bağlamda, çalışmanın problemini, 'mesleki müzik eğitimi alan lisans öğrencileri, sosyal medya platformlarından çalgı çalma becerilerini geliştirmeye dönük nasıl istifade etmektedirler?' oluşturmaktadır.

Yöntem

Çalışma, karma yöntem araştırması niteliğindedir. Karma yöntem araştırması 'nitel ve nicel verilerin toplanmasını ve bu iki veri türünün bütünleştirilmesini kapsayan bir araştırma yaklaşımıdır' (Creswell, 2017, s. 4). Karma araştırma yönteminde araştırmacı, araştırma sorularına, cevap ararken nicel ve nitel verileri toplayarak analiz eder (Creswell & Clark, 2018: 26; Tashakkori & Creswell, 2007, s. 4). Karma yöntem araştırmaları, araştırmayı zenginleştirecek geniş bir yöntem çeşitliliği sağlaması (Gorard ve Taylor, 2004, s. 2) nedeniyle tercih edilir. Özellikle internet tabanlı tarama araştırmalarının gereken zaman miktarını azaltması önemli bir diğer avantaj durumudur (Robson, 2017). Bu araştırmada, mesleki müzik eğitimi alan lisans öğrencilerinin çalgı çalma becerilerini sosyal medya aracılığıyla geliştirme motaivasyonlarına ilişkin durumları genel tarama modeli ile ortaya konmak istenmiştir.

Araştırmada nicel veriler, anket tekniği ile toplanmıştır. Anket tekniği, bireylere sözlü veya yazılı olarak uygulanabilen, belirlenen örneklemden kendisi, çevresi veya kurumuyla ilgili, değişik türden nicel ve nitel veriler elde etmeye imkan veren (Arıkan, 2018) bir tekniktir. Geniş bir topluluğun düşünce ve eğilimlerinin ortaya çıkarılmasında sıklıkla başvurulur (Büyüköztürk, 2005). Bu araştırmada, anket çeşitlerinden Websurvey tercih edilmiştir. Araştırmada nitel veriler ise yarı yapılandırılmış soruların yer aldığı görüşme formu aracılığıyla toplanmıştır.

Araştırmaya ilk olarak sosyal medya platformlarının çalgı öğretimi/öğrenimi amaçlı kullanımına ilişkin ilgili literatürün taranmasıyla başlanmıştır. Araştırma deseninin belirlenmesinden sonra veri toplama yöntemi olarak anket ve görüşme teknikleri benimsenmiştir. Anket ve görüşme formunda yer alan literatüre dayalı olarak araştırmacılar tarafından hazırlanan soru havuzları, müzik eğitimi alanında çalışan 3 uzman akademisyenin görüşlerine sunulmuş ve üzerinde gerekli değişiklik ve düzenlemelere gidilmiştir. Pilot uygulama sonrasında son hali verilen formlar, Google Formlar uygulaması aracılığıyla çalışma grubuna eş zamanlı olarak sunulmuştur. Gönüllü olan katılımcılardan bir süre sınırı olmaksızın soruları cevaplamaları istenmiştir. Her bir katılımcı 20 ila 35 dakika arasında formu doldurmuştur.

Araştırmanın çalışma grubunu, Türkiye'nin batı, orta, güney ve doğu bölgelerindeki mesleki müzik eğitimi veren yükseköğretim kurumlarında 2022-2023 eğitim öğretim yılı güz dönemine kayıtlı, 17 yaş ve üzerindeki lisans 1., 2., 3. ve 4. sınıflar düzeyindeki öğrenciler (f: 295) oluşturmaktadır. Çalışmada, veri toplama aracı olarak araştırmacılar tarafından hazırlanan, iki bölümde hazırlanmış açık ve kapalı uçlu sorudan oluşan '*Mesleki Müzik Eğitimi Alan Lisans Öğrencilerinin Çalgı Çalma Becerilerini Geliştirmeye Dönük Sosyal Medya Kullanımı Anketi*' kullanılmıştır. Araştırmada amaçlı örneklem çeşitlerinden ölçüt örneklem kullanılmıştır. Ölçüt örneklem, bazı önem kriterlerini önceden belirleyerek bu kriterleri karşılayan olaylar, durumlar, nesnelere ve kişilerin örnekleme alınmasını içerir (Merriam,

2013; Patton, 2002). Ölçüt örneklem kullanılan çalışmalar, programların izlenmesinde (Coyne, 1997), zengin verilere ulaşabilmede ve inanılırlığın artırılmasında (Flick, 2014) tercih edilir. Türkiye’de müzik ve çalgı öğretimi temelde amatör, genel ve mesleki olarak üç grupta yürütülmektedir. Bu araştırma, mesleki müzik eğitimi alan öğrencilerin meslek çalgıları odağındaki sosyal medya kullanımı potansiyellerini odağına aldığından ölçütler, ‘katılımcıların lisans düzeyinde örgün mesleki müzik eğitimi alıyor olma’ ve ‘sosyal medya platformlarını çalgı çalma becerilerini geliştirme motivasyonu ile kullanma’ olarak belirlenmiştir.

Araştırmada elde edilen veriler, çift yönlü olarak analiz edilmiştir. Nicel veriler SPSS-20.00 paket programıyla değerlendirilmiş, ilgili frekans ve yüzde hesapları ile okuyucuya sunulmuştur. Nitel veriler ise içerik analizi yoluyla çözümlenmiştir. İçerik analizinde öncelikle kodlama işlemi gerçekleştirilir, birbiriyle bağlantılı olan kodlar kategoriler ya da alt kategoriler birleştirilir, sonrasında alt kategorilerden oluşan temalara ulaşılır. Temaların düzenlenmesinin ardından, bulguların yorumlanması gerçekleşir (Eysenbach & Köhler, 2002; Merriam & Grenier, 2019; Patton, 1990). İçerik analizi, veri setinin genel düzeyde açıklanmasındaki ve verilerin sistematik bir yapı içinde çözümlenmesindeki avantajları (Baltacı, 2019) nedeniyle tercih edilmektedir. Elde edilen verilerin yorumlanması aşamasında, bazı katılımcı görüşleri, doğrudan alıntılarla aktarılmıştır. Bu alıntılar yapılırken katılımcıların gizliliği önemsenerak her birine rumuz verilmiştir.

Bulgular

Çalışma grubundaki öğrencilerin bireysel çalgı becerilerini geliştirmeye dönük kullandıkları sosyal medya platformlarının oldukça çeşitlilik göstermektedir. Bu platformların kullanım oranları incelendiğinde en yüksek oranın, %58.3 (f: 172) ile Youtube’a ait olduğu görülmektedir. Youtube’yi %40.7’lik (f: 119) bir oranla Instagram uygulaması takip etmektedir. Diğer kullanılan platformların ise YouTube’a nazaran tercih edilme oranları oldukça düşüktür. Bu platformlar arasında yer alan Facebook %0.3 (f: 1) ve Tiktok %0.7 (f: 2)’lik dilimlere sahiptir.

Katılımcıların, enstrüman becerilerini geliştirmeye yönelik kullandıkları sosyal medya platformunu tercih etme nedenleri incelendiğinde, Youtube platformunu tercih eden öğrencilerin daha çok ‘zengin içerik’ (%57.14) olgusuna odaklanan görüşler sunduğu görülmüştür. ‘Zengin içerik’ alt kategorisini, ‘kullanım pratiği’ (%19.78) ve ‘hızlı etkileşim’ alt kategorileri takip etmektedir. Instagram platformunu tercih eden öğrencilerin ise Youtube kullanıcılarının görüşlerine benzer şekilde ‘zengin içerik’e (%25.58) odaklandıkları belirlenmiştir. Instagram kullanıcıları için ‘zengin içeriği’ takiben ‘kullanım pratiği’ (%18.60) ‘yaygın kullanım’ (%16.27) ve ‘kolay ulaşılabilirlik’ (%16.27) oldukça önemlidir:

Katılımcı görüşlerinin kodlanması sonrasında ‘beğeniler ile ilgili faktörler’ alt kategorisinin ilgili müzik türünü seçmede önemli etkenlerin başında geldiği görülmektedir. Çalışma grubundaki öğrencilerin sosyal medya platformlarından enstrüman çalma becerilerini geliştirmeye dönük istifade ettikleri videolardaki içerik türleri oldukça çeşitlilik göstermektedir. Bu videolarda yer alan içerik türlerinin oranları incelendiğinde en yüksek oranın %62.4 ile (f: 184) ‘eserler’ olduğu görülmektedir. Diğer video içeriklerinin, eserlere oranla tercih edilme oranlarının oldukça düşük olduğu görülmüştür. Bu oranlar %13.9 ile (f: 41) ‘egzersizler’, %13.2 ile (f: 39) ‘etütler’, %8.5 ile (f: 25) ‘çalgısal formlar’dır.

Katılımcılar, sosyal medya platformlarında enstrümanlarını geliştirmeye dönük istifade ettikleri icra teknikleri daha çok ‘pozisyonel teknikler’ %27.1 (f: 80), ‘doğaçlama teknikleri’ %22.4 (f: 66), ‘hızla

ilgili teknikler' %18 (f: 53) ve 'nüans teknikleri' %18 (f: 53) dir. Katılımcıların önemli bir çoğunluğu %32.9 (f: 97), bireysel çalgı çalma becerisini geliştirmek için sosyal medya platformlarında takip ettiği profilleri/kişileri/paylaşım sahiplerini seçerken herhangi bir kriterinin olmadığını belirtmiştir. Diğer kitle ise daha çok %24.7 ile 'öğreticisinin önermesi' (f: 73) ve %15.3 ile 'hesabın paylaşım sıklığına göre' (f: 45) gibi kriterlere göre hareket etmektedirler:

Katılımcıların, önemli bir çoğunluğunun 'icra becerisini geliştirmeye dönük arayışları' %79.3 (f: 234) ile enstrüman çalma becerilerini geliştirmek için sosyal medya platformlarına yöneldikleri görülmüştür. Katılımcılar, 'ödev verildiğinde' %6.1 (f: 18), 'öğreticileri önerdiğinde' %4.1 (f: 12), 'sınav dönemlerinde' %3.1 (f: 9) ve 'arkadaşları önerdiğinde' %1.7 (f: 5) de sosyal medya platformlarından istifade edebilmektedirler. Katılımcılar, sosyal medya platformlarında çalgıları ile ilgili paylaşımlara daha çok 'kendi araştırmaları' %59.7 (f: 176) aracılığıyla yönelmektedirler. Buna ek olarak, 'sosyal ağın yapay zekası' %26.1 (f: 77) ve 'öğretmenin önermesi' %11.2 (f: 33) gibi etkenler de yönelimlerinde etkili olmaktadır.

Tartışma ve Sonuç

Araştırma, mesleki müzik eğitimi alan lisans öğrencilerinin internet tabanlı sosyal medya platformlarını çalgı çalma becerilerini geliştirmeye dönük bir motivasyonla kullanma durumunu çeşitli yönlerden incelemeyi amaçlamıştır. Öğrencilerin sunduğu verilerin, onların çalgı becerilerini geliştirmede sosyal medya platformlarını, çok yönlü ve zengin bir 'sanal-informal öğrenme mekanı' olarak benimsediklerini ve kullandıklarını göstermektedir.

Lei vd. (2021), sosyal medyanın müzik eğitiminde önemli bir yardımcı bir rol alabileceğine değinir. Yine sosyal paylaşım sitelerinin eğitimciler tarafından öğrenciler arasında etkileşime en fazla yarar sağlayacak web 2,0 uygulaması olarak görülmektedir (Ajjan & Harsthone, 2008). Bu paylaşım siteleri arasında Youtube platformu tıptan, spora, matematikten, fene kadar oldukça çeşitli bir eğitim yelpazesinde işe koşulmaktadır (Del Valle-Ramón vd., 2020; Gayef & Çaylan, 2021; Pecay, 2017; Yücekaya vd., 2021). Çalışma grubundaki öğrencilerin de çalgı çalma becerilerini geliştirmeye yönelik daha çok Youtube platformundan istifade ettikleri tespit edilmiştir. Schmidt-Jones, (2022), Youtube'nun bu avantaj durumunu, platformun popüleritesine ve sunduğu eğitim olanaklarının yaygınlaşmasına bağlar. Öyle ki, katılımcı öğrencilerin (n: 295), sunduğu fenomen sayısındaki çeşitliliğin sayıca oldukça yüksek olması, platformun sunduğu zengin çeşitlilik avantajı için önemli bir ipucunu sunmaktadır. Youtube, çalgı öğrenmek söz konusu olduğunda, görsel ve işitsel detayları, zengin arşivi, filtreleme işlevi gibi artıları nedeniyle öğrencilerce diğer platformlara nazaran daha çok tercih edilmektedir. Instagram ise hızlı etkileşim avantajı ile lisans öğrencileri için Youtube'den ayrırmakta, öğrenciler çalgıları ile ilgili bireylerin bu platformu kullanması nedeniyle bile bu platforma yönelebilmektedirler.

YouTube'u özellikle profesyonel müzisyen-öğretmenler tarafından ürettikleri yapılandırılmış ders videoları aracılığıyla öğretim amacıyla kullanılmaktadır (Waldron, 2012). Öğrencilerin sosyal medya platformlarında çalgı çalma becerisini geliştirmeye yönelik yararlanma amaçlı takip ettikleri içerik üreticilerinin arasında azımsanmayacak sayıda eğitimci ve akademisyenin yer aldığı görülmektedir. En çok takip edilen içerik üreticilerinin ortak özellikleri incelendiğinde alanlarında tanınmış olmaları ve icra düzeylerinin yüksek seviyede olmasıdır.

Öğrencilerin, çalgı çalma becerilerini geliştirmede çok sayıda ve farklı müzik türlerine yönelmektedirler. Elde edilen görüşler, bu yönelimi etkileyen faktörlerin içinde ilk olarak 'estetik

beğeniler'i ardından 'kimlik ve benlik algısı' temalarına işaret etmektedir. Aslında, insanların, özellikle kişilik fenomeni üzerinden estetik beğenilerinin şekillendiği ve herhangi bir müzik türüne yönelmeleri bilinen bir durumdur (Payne, 1967). Katılımcıların çalgı çalışma motivasyonları ile yöneldiği sosyal medya platformlarındaki müzik türlerini seçmelerinde de aynı kriterin önemli derecede etkili olduğu anlaşılmaktadır. Estetik açıdan tatmin olmadıkları içerikleri çalgı çalma becerilerinin gelişiminde işe koşmaya istekli olmadıklarını göstermektedir.

Lisans öğrencileri, sosyal medya platformları aracılığıyla çeşitli müzik türlerine ve çeşitli müzisyenlere kolayca erişim sağlayarak onlardan fayda sağlamakta enstrüman çalma becerilerini geliştirmede önemli kazanımlar elde etmektedir. Öğrenciler sosyal medya platformlarını müziği analiz etmeyi öğrenmede kullanmakta ve çalma tekniklerinde daha iyi gelişme eğilimi göstermektedir (Lei vd., 2021). Araştırmanın katılımcı öğrencileri de video paylaşım platformlarından çalgılarına dönük birçok tekniği geliştirmek üzere istifade etmektedirler. Bu teknikler arasında 'pozisyonel teknikler', başı çekmekte bu teknikleri, 'doğaçlama teknikleri', 'hızla ilgili teknikler' ve 'nüans teknikleri' başlıkları izlenmektedir.

Öğrencilerin, sosyal medya platformlarında enstrüman çalma becerilerini geliştirmek için takip ettikleri profilleri/kişileri/paylaşım sahiplerine daha çok öğreticilerinin önermesi ve yönlendirmesi yoluyla ulaşmaları sözkonusudur. Bu durum, öğreticilerin eğitim süreçlerinin niteliğini arttırmada bu platformlara başvurduğunu göstermektedir. Lei vd. (2021) sosyal medya platformlarında enstrüman çalma tekniklerinin geliştirilmesini yardımcı olduğunu belirtir. Bu çalışma ile paralel olarak katılımcı öğrencilerin, sosyal medya platformlarının enstrümanlarıyla ilgili 'icra tekniklerini öğrenme'lerine yaptığı katkıyı platformların kendilerine sunduğu en önemli avantaj durumu olarak betimlemeleri oldukça benzerdir.

Öneriler

Araştırma verileri toplandığı çalışma grubu itibarıyla lisans düzeyinde mesleki müzik eğitimi alan öğrenciler ile sınırlıdır. Diğer örgün eğitim seviyelerindeki öğrenciler ile amatör ve yarı profesyonel öğrenci gruplarının sosyal medya platformlarını çalgı çalma becerilerini geliştirmeye dönük kullanım pratikleri sonraki araştırmalar için önerilebilir. Ayrıca, bu platformlarda paylaşım yapan öğretici, icracı, akademisyen ve öğretmenlerden oluşan çalışma grupları ile de çalışmalar gerçekleştirilerek elde edilen veriler öğrencilerin sundukları ile kıyaslanabilir.


İkinci olarak, katılımcı öğrencilerin, bu platformlardan çalgı çalma becerilerini geliştirmeye dönük bazı beklentilere sahip olduğu anlaşılmaktadır. Fakat araştırmamız sadece paylaşım sahiplerini takip eden öğrencilerin sınırlılığında üretilmiştir. Sosyal medyada öğretim amaçlı paylaşım yapan içerik sahiplerine ilişkin yapılacak çalışmalara ihtiyaç vardır. Bu bağlamda, sosyal medya platformlarında paylaşım yapan kitlenin de sosyal medyaya ve paylaşım yapma motivasyonlarına dönük araştırmalar önerilebilir.




<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Determination of Type I Error and Power Rate in Differential Item Functioning by Several Methods*

 Şeyma Erbay Mermer, Phd.
Bilecik Şeyh Edebali University, Türkiye
sey.erbay@gmail.com
Orcid ID: 0000-0002-7747-9545

 Yasemin Kuzu, Phd., Corresponding Author
Kırşehir Ahi Evran University, Türkiye
yaseminkuzu@ahievran.edu.tr
Orcid ID: 0000-0003-4301-2645

 Hülya Kelecioğlu, Prof. Dr.
Hacettepe University, Türkiye
hulyakelecioğlu@ahievran.edu.tr
Orcid ID: 0000-0002-0741-9934

Article Type: Research Article
Received Date: 09.09.2023
Accepted Date: 23.10.2023
Published Date: 30.10.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software
Doi: 10.29329/tayjournal.2023.610.09

Citation: Erbay-Mermer, Ş., Kuzu, Y., & Kelecioğlu, H. (2023). Determination of type I error and power rate in differential item functioning by several methods. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 902-921.

*The study was presented in 4th International Academic Research Congress 2018 (INES 2018), Antalya, Türkiye, Oct, 30- Nov 3, 2018.

Abstract

In this study, the methods based on Classical Test Theory and Item Response Theory were used comparatively to determine Type I error and power rates in Differential Item Functioning. Logistic regression, Mantel-Haenszel, Lord's χ^2 , Breslow-Day and Raju's area index methods were used for the analyses, which were conducted using the R programming language. Determination of Type I error and power rates of these methods under certain conditions was carried out by simulation study. For data generation, analyzes were made under eight conditions in total by examining different sample sizes and DIF rates created with the WinGen 3 program. The results of the study indicate that, in general when the ratio of items containing DIF increased, Type I error increased and the power ratio decreased. Among the methods based on Item Response Theory, Lord's χ^2 and Raju's area index methods gave better results than other methods with low error and high power.

Keywords: IRT, DIF, Type I error, power.

Introduction

One of the most important issues emphasized by measurement and evaluation in education and psychology is large-scale exams at national (Public Personnel Selection Exam [KPSS], Academic Personnel and Graduate Education Entrance Exam [ALES], etc.) and international (Test of English as a Foreign Language [TOEFL], Programme for International Student Assessment [PISA], Trends in International Mathematics and Science Study [TIMMS], etc.) levels. The evaluation and interpretation of these exams, on the results of which important decisions are made about individuals and countries, are of great importance. Therefore, these exams should enable valid interpretations (Clauser & Mazor, 1998). In other words, in order for the decisions made on the test results to reflect the truth and the scores obtained from the test to reflect the actual performance of individuals, the measurements made need to be valid. Validity, which is a degree of theory and evidence that helps to demonstrate the accuracy of interpretations made on test scores or decisions made as a result of test scores (American Educational Research Association [AERA] et al., 1999), is one of the most important features that tests and other measurement tools should have. Tests should measure the construct with the same accuracy for all individuals without being affected by variables other than the measured trait (Sireci & Rios, 2013). Although validity is affected by many factors, the most important threats to tests are item and test bias (Clauser & Mazor, 1998). Item bias emerged in 1910 when Alfred Binet administered an intelligence test to children from low socioeconomic backgrounds. When Binet analyzed the test items, he found that some of the items measured cultural traits in addition to intelligence and deemed it appropriate to remove them from the test. In 1912, Stern showed in his study that different results emerged in different subgroups. Later on, the idea of preparing tests for a single group developed (Camilli & Shepard, 1994). Cleary introduced the concept of test bias by finding that predicted criterion scores were too high or too low in subgroups (Lee, 2003).

Bias is the interference of other variables (gender, school type, ethnicity, etc.) with the characteristics of individuals that we want to measure and leads to systematic errors that distort the results obtained from the test and the interpretations made based on these results (Gierl et al., 1999). The presence of biased items in a test that favor one group is a significant threat to the validity of the test (Kane, 2006; Messick, 1989). Therefore, it is very important to prepare the test in a way that does not give advantage to any subgroup (Gök et al., 2014). The first step in examining whether the items in a test are biased is to determine whether there is a differential item functioning (DIF) in the relevant

items. DIF is the difference in the probability of answering an item correctly by individuals with the same ability level according to their subgroups (Embretson & Reise, 2000; Hambleton et al., 1991). According to Zumbo (1999), DIF explains the differences in the probability of answering the item correctly for individuals in different groups in a comparison study for the level of ability targeted to be measured by the item. DIF analyses are a prerequisite for identifying biased items in a test, but they are also evidence for the validity of the test (Embretson, 2007). While a biased item can definitely be said to contain DIF, the presence of DIF in an item is not enough to say that the item is biased. For an item that is found to contain DIF, it can only be concluded that it is biased with expert opinion (Zumbo & Gelin, 2005), so it requires a qualitative evaluation based on item bias detection (Ellis & Raju, 2003; Furlow et al., 2009; Sireci & Allalouf, 2003).

DIF is considered in two different ways: uniform and non-uniform DIF. In uniform DIF, for an item containing DIF, the same group performs lower or higher at each ability level. Uniform DIF occurs when there is no interaction between ability level and group membership in terms of individuals' item performance. Therefore, in the presence of uniform DIF, only item difficulty parameters differ between groups. The fact that the differentiation in performance between groups is uniform across the entire ability domain means that the item contains a uniform DIF (Penfield & Lam, 2000).

In non-uniform DIF, for an item showing DIF, one group performs better at some ability levels and the other group performs better at some ability levels. If there is an interaction between ability level and group membership in terms of item performance of individuals, we can talk about non-uniform DIF (Camili & Shephard, 1994). In non-uniform DIF, unlike uniform DIF, item discriminations are different between subgroups. However, this is not true for the item difficulty parameter (Turhan, 2006).

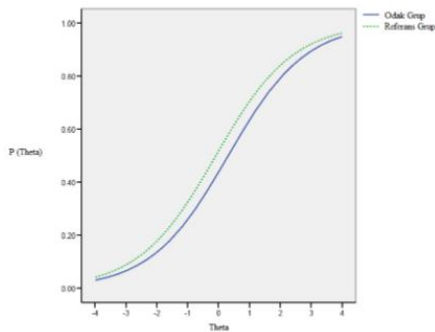


Figure 1. Uniform DIF functioning

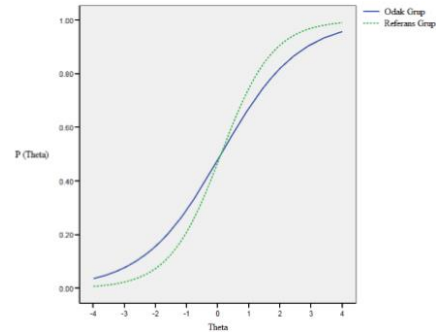


Figure 2. Non-uniform DIF functioning

When Figure 1 and Figure 2 are examined, it is seen that while the substance characteristic curves of the groups do not intersect each other for the uniform DIF, the substance characteristic curves overlap in the non-uniform DIF.

Although the presence of DIF threatens the validity of a test, it is a mistake to exclude an item from the test only because it contains DIF (Zumbo & Gelin, 2005). First, items containing DIF are subjected to statistical analyses, and as a result of the analyses, they are divided into A, B and C categories in terms of DIF level (Zieky, 1993). Here, category A means non-significant DIF, category B means moderate DIF and category C means high level DIF. Items in category A do not need to be removed from the test; items in category B can be used when they are important for the test. However, items in category C should be removed from the test if they are not very important for the trait to be measured (Zwick, 2012). Many DIF determination methods are mentioned in the literature. However, Karami and

Nodoushan (2011) stated that different methods determine DIF in different items for the same test, so it is not correct to analyze according to only one method and interpret the results according to only one method. Accordingly, if an item contains DIF according to more than one method, it is supported by different methods that the item has DIF.

DIF Determination Methods

There are many methods to determine whether items in a test contain DIF or not. Some of these methods, which are classified as based on Classical Test Theory (CTT) and Item Response Theory (IRT), are given below.

Table 1. DIF detection methods based on CTT and IRT

CTT Based Methods	IRT Based Methods
Variance Analysis	SIBTEST
Mantel-Haenszel	Hierarchical Generalized Linear Modeling (HGLM)
Logistic Regression	Item Characteristic Curve
	MIMIC
	Lord's χ^2 Test
	Raju's Area Index
	IRT Likelihood Ratio

While DIF determination is made on the basis of observed scores in CTT-based methods, in IRT-based DIF determination, ability estimation can be made independently of test items.

Mantel-Haenszel (MH) Method

It is a method used to determine uniform or non-uniform DIF and is based on the difference of "odd" values obtained from the scores of two groups at the same ability level (Mertler & Vannatta, 2005). The "odd" value is the ratio between the probability of an event occurring and the probability of it not occurring. $(0, \infty)$ values in the range. Therefore, the results are difficult to interpret. As a solution to this problem, it has been suggested to use the (delta) statistic, which corresponds to -2.35 times the natural logarithm of the MH statistic and is interpreted as the DIF effect size (Camilli & Shepard, 1994). The values to be taken as a criterion for interpreting the effect size (Dorans & Holland, 1993) are given below.

Table 2. DIF levels according to MH method

Level	Value	Amount of DIF
A	$\Delta MH < 1$	None or negligible
B	$1 \leq \Delta MH < 1.5$	Medium level
C	$\Delta MH \geq 1.5$	High level

According to Table 2, if the DIF effect size is 1.5 or above, the item must be removed from the test.

Logistic Regression (LR) Method

It is a parametric method based on the observed score, and in this method, the presence of DIF is examined over the responses of individuals to the item and the total score with the help of the models established. For the interpretation of the degree of DIF, the effect size ΔR^2 statistic is calculated. It is seen that different criteria are used for effect size (Jodoin & Gierl, 2001; Çepni, 2011). However, Zumbo and Thomas (1996) gave the following criteria for interpreting the DIF effect size.

Table 3. DIF levels according to LR method

Level	Value	Amount of DIF
A	$\Delta R^2 < 0.13$	None or negligible
B	$0.13 \leq \Delta R^2 < 0.26$	Medium level
C	$\Delta R^2 \geq 0.26$	High level

Lord's χ^2 Statistics

In this IRT-based method, item parameters and covariances for subgroups are first calculated. Then, these estimated parameters are scaled and Lord's χ^2 statistic is calculated (Camilli & Shepard, 1994). Finally, the presence of DIF is decided by comparing the observed values with the critical value (Osterlind, 1983).

Raju's Area Index

Determination of DIF by this method is based on substance characteristic curves. First, item characteristic curves of subgroups are drawn for an item. If there is a difference between the item characteristic curves, the presence of DIF is mentioned (Camilli & Shepard, 1994).

When DIF studies are analyzed in general, it can be said that domestic and international studies focus on comparing different DIF determination methods, identifying possible sources of bias, and calculating Type I error and power ratio. Li, Qin, and Lei (2017) used the hierarchical DIF approach to examine the effect of teachers' teaching performance at the item level. The items were taken from the TIMSS 2011 4th grade mathematics test in the United States. In the context of teaching responsiveness, individuals were grouped according to whether or not they received instruction on the content tested by a given item. Ultimately, seven of the 34 TIMSS items included in the study showed instructional responsiveness regardless of whether covariates were controlled for. Controlling for the overall scores for these seven items, students who received the relevant instruction were significantly more likely to respond correctly to these items than those who did not. Jeon, Rijmen, and Rabe-Hesketh (2013) provided a general overview of a multigroup bifactor model for assessing DIF in item-set-based tests. The proposed model has four main features. First, it accounts for group differences in the multidimensional latent space. Second, it relaxes the assumption that all dimensions are independent from the assumption that certain dimensions are conditionally independent of the overall dimension. Third, the proposed method is flexible and can be applied to a variety of measurement models, including item-set and quadratic models for dichotomously and multiply scored responses. Fourth, the model can efficiently predict for large problems with many items, item sets, and examinees using the full information ML method. The simulation study shows that ignoring group differences can bias item parameter estimates. In this case, especially DIF estimation can be biased.

Hou, la Torre and Nandakumar (2014) investigated the effectiveness of the Wald test in detecting both uniform and non-uniform DIF in the DINA model through a simulation study. The results of this study show that the Wald test has low Type I error rates. Furthermore, the performance of the Wald test in detecting uniform DIF was compared with the traditional MH and SIBTEST methods. The results of the comparison study show that the Wald test outperforms the MH and SIBTEST methods. Finally, the strengths and limitations of the proposed method are discussed and suggestions for future work are presented. Jodoin and Gierl (2001) discussed effect size measurement and classification for the LR DIF method in their study. A simulation study was conducted to determine whether effect size affects Type I error and power rates for the LR DIF method across sample sizes, ability distributions,

and the percentage of DIF items in a test. The results showed that the inclusion of an effect size measure when using a large sample - can significantly reduce Type I error rates, but there will also be a reduction in power rates. Chen et al. (2014) used hierarchical generalized linear models (HGLM) to assess DIF in their study. They described their new method as follows: identify the item that has almost no DIF in the test, such that the two groups can have different means and the other items can be evaluated for DIF. In this context, Simulation Study 1 compared various methods based on HGLMs for selecting DIF-free items. In Simulation Study 2, items rated as DIF-free were taken as anchors and other items were evaluated for DIF. This new method was compared with the traditional method based on HGLMs, where the two groups are assumed to have equal means in terms of Type I error rate and power ratio. As a result, the new method outperformed the traditional method when the means of the two groups were different.

Walker and Gocer-Sahin (2016) aimed to determine how much the secondary ability distributions should change before DIF is detected. Two-dimensional binary data sets were generated using a compensatory multidimensional IRT model and the correlation between the dimensions was systematically increased, while the mean difference in the second dimension was gradually changed between the reference and focus group. SIBTEST, MH and LR methods were used to test the DIF. The results showed that even with a very small mean difference on the second dimension, smaller DIF would be detected than in previous research. Although the smallest mean difference considered in this study was 0.25, statistically significant differences were found between the reference and focus groups in the subtest scores of the items measuring the secondary dimension. (2017) extend the MIMIC interaction model to detect DIF in the context of multidimensional IRT modeling and examine the performance of the multidimensional MIMIC interaction model with respect to Type I error and power rates under different simulation conditions. Simulation conditions include DIF type and size, test length, correlation between latent traits, sample size, and latent mean differences between focal and reference groups. The results of this study show that the power rates of the multidimensional MIMIC interaction model under uniform DIF conditions are higher than the power rates of non-uniform DIF conditions. As anchor item length and sample size increase, the power to detect DIF increases. Although the multidimensional MIMIC interaction model was found to be a very useful tool for identifying uniform DIF, its performance in detecting non-uniform DIF seems to be questionable.

Kabasakal and Kelecioğlu (2015) examined the effect of DIF items on test equalization in unidimensional and multidimensional IRT. In the study, the performance of three different equalization methods under 24 different simulation conditions were examined. The variables examined are sample size, test length, DIF size and test type. Multidimensional Item Response Models with DIF factors as parameters were compared with Stocking-Lord and simultaneous calibration methods, and differences were found in the performance of the methods in the conditions. Accordingly, multidimensional item response models were able to identify DIF items in a single analysis, apply equating methods and eliminate the bias caused by DIF. In addition, an increase in test length and sample size generally had a positive effect on item response models. When item response model-based methods were considered, it was found that separate calibration methods were more affected by the presence of DIF items than simultaneous calibration. This effect is most significant when DIF items are present in the common test and the DIF size is C.

When the literature is examined, studies comparing DIF determination methods are also found. Erdem-Keklik (2012) compared MH, LR and IRT Likelihood Ratio methods in determining the uniform DIF in a simulation study involving a sample size of ability distribution. The results showed that Item Response Theory Likelihood Ratio is better than other methods in controlling Type I error in different ability distributions. Şahin (2017) compared the objective (MH, LR and SIBTEST) and subjective methods used in DIF detection. The highest agreement regarding the presence of DIF was found between MH and SIBTEST methods (0,90; $\kappa = 0,79$), while the lowest agreement in objective methods was obtained between LR and SIBTEST methods (0,75; $\kappa = 0,50$) was found. The agreement between objective and subjective methods was found to be moderate. Awuor (2008), in his study comparing SIBTEST and MH methods, concluded that MH method is better than SIBTEST method in controlling Type I error at different sample sizes. Zheng et al., (2007) compared MH, LR and SIBTEST methods and concluded that DIF direction and magnitude are consistent in all methods. In their study, Kan, Sünbül, and Ömür (2013) compared the DIF determination methods of Transformed Item Difficulty, MH, LR, Lord's χ^2 and Raju's domain measure methods. As a result, while most of the items in the subtests did not contain DIF in the CTT-based methods, many items contained DIF in the IRT- based methods. The CTT-based methods were similar within themselves and the IRT-based methods were similar within themselves.

In the studies on DIF methods, it is seen that Type I error and power rates are studied under different conditions. However, it is noteworthy that similar methods are used in these studies. In this study, Type I error and power rates of methods based on CTT and IRT were studied. In this context, conditions and levels of conditions were changed in determining DIF. Therefore, the methods used differ from other studies in terms of the conditions and levels of the conditions. The following research problems were sought to be answered in the study.

1. What are the Type I error rates of LR, MH, Lord's χ^2 , Breslow-Day and Raju's area index methods under different conditions?
2. What are the power rates of LR, MH, Lord's χ^2 , Breslow-Day and Raju's area index methods under various conditions

Method

Research Model

In this study, the Type I error and power rates of the CTT and IRT methods used in DIF determination are comparatively analyzed under different conditions. Since it is a research that will contribute to the existing knowledge in the literature by providing information about the performance of the methods, the research model of the study is basic research.

Data Generation

In the present study, simulative data is used to determine the Type I error and power rates of different methods used in DIF detection under certain conditions. The same data set was used to determine the Type I error and power rates. WinGen 3 software was used for data generation. In order to calculate Type I error rates and power obtained under different conditions from DIF determination methods, data showing uniform DIF were generated for the reference and focus groups with sample sizes of 1000 (O=500, R=500), 1500 (O=500, R=1000), 1500 (O=1000, R=500), 2000 (O=1000, R=1000).

The number of items for each analysis was set as 25. A two-parameter logistic model was used in data generation. Item parameter was obtained from a normal distribution with a mean of 0.8 and a standard deviation of 0.02. Parameter b was randomly drawn from a uniform distribution with a minimum value of -3 and a maximum value of +3. The values of the ability distribution of the individuals were obtained from a normal distribution with a mean of 0 and a standard deviation of 1. In this way, the DIF item was obtained by creating a difference in difficulty levels for the reference and focus groups without differentiating the ability distribution of the individuals. Item parameters were common for the reference and focus groups. Data were generated as the proportion of items containing DIF (12%, 20%) and DIF level ($b = 0.75$). The amount of DIF, 0.75, was added to the parameter b as many times as the number of items desired to contain DIF.

A total of eight conditions were analyzed with four samples and two DIF rates generated by the simulation study. In both the Type I error study and the power study, 20 repetitions were performed for each condition, which was formed by crossing the levels of the criteria. In total, 160 replications were performed for all cases. The simulative data used in the study was generated with code written using the R.3.0.1 program.

Data Analysis

For the detection of DIF, a comparative analysis of methods based on CTC and MTC was performed. The "difR" package was used for the analysis. CTT and IRT based LR, Mantel-Haenszel, Lord's χ^2 , Breslow-Day (BD) and Raju's area index methods were used. The R.3.0.1 program and the "difR" package were used for the analysis of DIF detection. "difR" is an R package that contains indices for changing matter function detection methods (Magis et al., 2015).

In Type I error analyses, the proportion of items labeled as DIF when they did not contain DIF was determined after 20 replicates for each condition. In power analyses, the proportion of items labeled as containing DIF when they were not was determined.

Ethical Permits of Research

In this study, all the rules to be followed within the scope of the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "General Actions Contrary to Scientific Research and Publication Ethics", have been carried out.

Ethics Committee Permission Information:

This research does not require ethics committee permission.

Findings

Findings for Type I Error Rates

The results obtained from Type I error rates for all conditions are given in Table 4.

Table 4. Mean Type I error rates according to sample and item rates with DIF

Sample (F-R)	Item Rates with DIF (%)	LR	Lord's χ^2	MH	BD	Raju
500-500	12	0.141	0.072	0.159	0.031	0.041
	20	0.185	0.105	0.140	0.015	0.065
500-1000	12	0.186	0.095	0.177	0.041	0.045
	20	0.220	0.145	0.195	0.020	0.090
1000-500	12	0.177	0.090	0.163	0.040	0.050
	20	0.205	0.110	0.175	0.040	0.055
1000-1000	12	0.218	0.109	0.210	0.050	0.050
	20	0.270	0.150	0.220	0.040	0.075

When Table 4 is examined, the minimum value for LR is 0.141 and the maximum value is 0.27; Lord's χ^2 The minimum value for MH was 0.072 and the maximum value was 0.15; the minimum value for MH was 0.14 and the maximum value was 0.22; the minimum value for BD was 0.015 and the maximum value was 0.05; and the minimum value obtained from Raju's area index methods was 0.041 and the maximum value was 0.09.

The lowest Type I error rate was determined by averaging the repetition rates. When the results are examined, it is seen that in general, the Type I error rate is highest in LR and Lord's χ^2 methods and the least in the BD method. These findings suggest that MH and LR Type I error rates are similar when the ability distributions of the focal and reference groups are the same. LR is Lord's χ^2 and MH methods, Type I error rates fluctuate according to the sample size and increase as the sample size increases; in the BD method, they are highest when the sample size is large and the DIF rate is low (12%), while in Raju's area index method, the reference group is more than the focal group and the DIF rate is high (20%). The change graphs of Type I error rates according to the 12% and 20% DIF containing material conditions are given in Figure 3 and Figure 4.

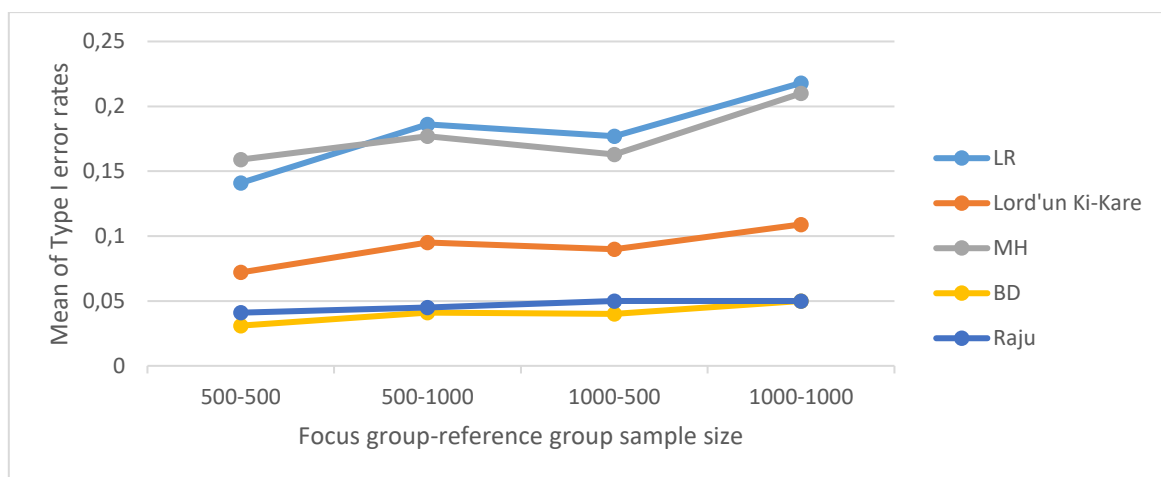


Figure 3. Type I error rates of the methods when the DIF content is 12%.

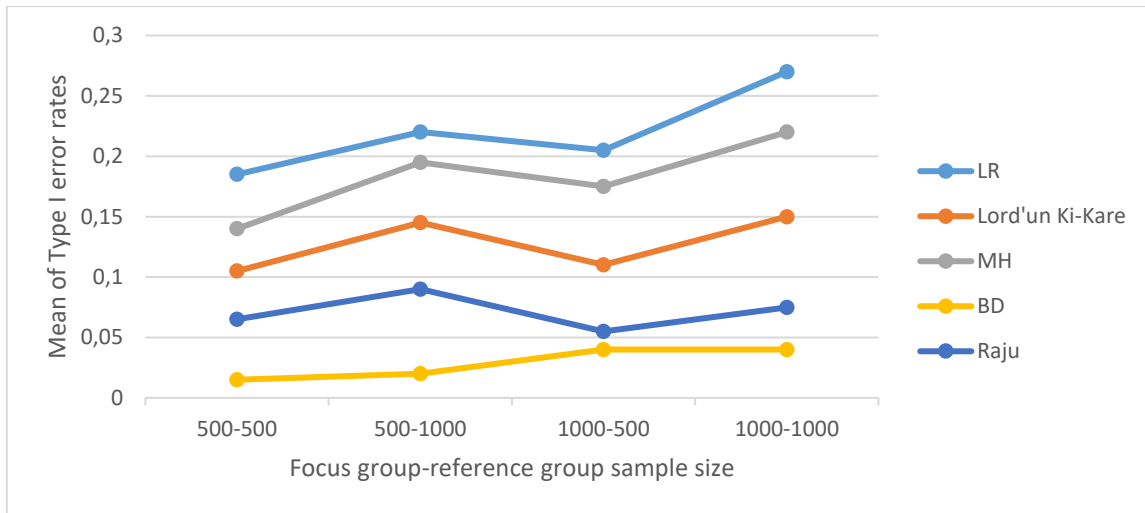


Figure 4. Type I error rates of the methods when the DIF content is 20%.

Findings for Power Rates

The results obtained from the power rates for all conditions are given in Table 5.

Table 5. Mean power rates according to sample and item rates with DIF

Sample (F-R)	Item Rates with DIF (%)	LR	Lord's χ^2	MH	BD	Raju
500-500	12	1.00	1.00	0.90	0.23	1.00
	20	0.90	0.94	0.76	0.52	0.88
500-1000	12	1.00	1.00	1.00	0.36	1.00
	20	0.94	0.98	0.78	0.38	0.98
1000-500	12	1.00	1.00	1.00	0.03	1.00
	20	0.98	0.98	0.74	0.68	0.90
1000-1000	12	1.00	1.00	1.00	0.20	1.00
	20	0.98	0.98	0.80	0.70	0.98

When Table 5 is examined, the minimum value for LR is 0.90 and the maximum value is 1. χ^2 The minimum value for MH was 0.94 with a maximum value of 1, the minimum value for MH was 0.74 with a maximum value of 1, the minimum value for BD was 0.03 with a maximum value of 0.70, and the minimum value obtained from Raju's area index methods was 0.88 with a maximum value of 1. The lowest power ratio was determined by averaging the repetition rates. When the results are examined, it is seen that the power ratio is highest for the 12% DIF material ratios and lowest for the BD method.

Looking at the results from the conditions, it is clear that the power ratio χ^2 method is the highest and the lowest in the BD method. In the 2000 sample of 12% DIF items, the power ratio is generally the highest for all methods and the lowest ratio is 0.2 in the BD method. It was also observed that the power ratio in the BD method was the highest in the case of a large sample and 20% DIF items. The variation graphs of the power ratios according to the 12% and 20% DIF containing material conditions are given in Figure 5 and Figure 6 below.

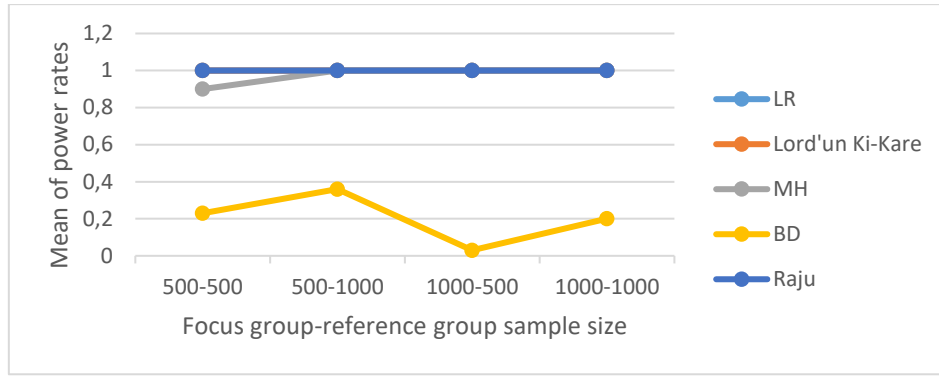


Figure 5. Power rates of the methods when the DIF content is 12%.

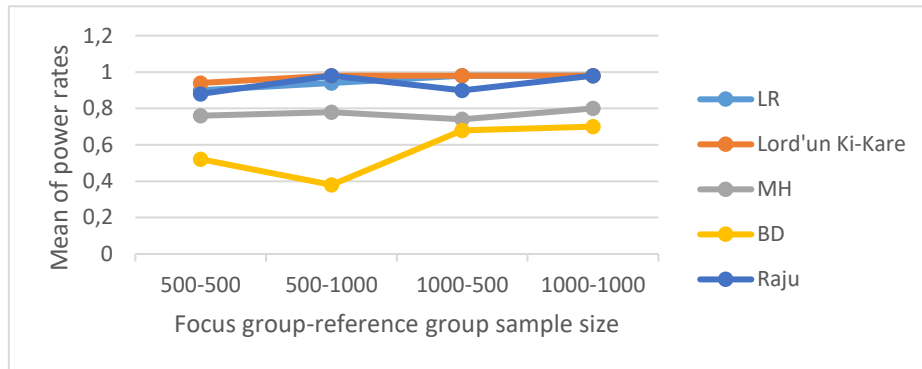


Figure 6. Power rates of the methods when the DIF content is 20%.

Discussion and Conclusion

Within the scope of the present study, the cases where the proportion of DIF-containing items differed and the sample sizes were observed for the changes in the means of Type I error and power ratios. For the observations, the LR and LRT methods were utilized. LR, Lord's χ^2 Type I error rates in BD and MH methods vary according to the sample size and increase as the sample size increases. In the BD method, the highest error rate was observed when the sample was large and the DIF rate was low (12%), while in Raju's area index method, the highest error rate was observed when the reference group sample was larger than the focal group sample and the DIF rate was high (20%). These results are in line with similar studies in the literature (Ankenmann et al., 1996; Atar & Kamata, 2011; Gierl et al., 2000; Rogers & Swaminathan, 1993; Roussos & Stout, 1996; Vaughn & Wang 2010).

In the condition where the sample size is the highest and the proportion of DIF items is the lowest; LR, Lord's χ^2 It is seen that the power ratio is the highest in MH and Raju's area index methods, while the lowest ratio is 0.2 in the BD method. Sünbül and Sünbül (2016), in their study on simulative data, stated that the power ratios of the methods increased with the increase in sample size. At the same time, the decrease in the power ratios of the methods with the increase in the proportion of DIF items supports this study.

In the results, the increase in the proportion of DIF items generally led to an increase in Type I error and a decrease in power. Similarly, Erdem-Keklik (2014) compared the Type I error and power ratios of MH and LR methods and found that Type I error was high in large sample sizes. In the analysis results, Lord's method, which is one of the ICA methods with low error and high power χ^2 and Raju's area index methods were found to give better results than the others.

Recommendations

In this study, the uniform DIF was analyzed. In addition to similar studies, non-uniform DIF can be examined by changing the ability parameters. In the study, the number of items was determined as 25, and the change in error and power ratios can be examined with different DIF determination methods when the number of items is less or more. In addition, the performance of DIF identification methods can be examined by manipulating variables such as sample size, sample size ratio, and item discrimination.

References

- American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME]. (1999). *Standards for Educational and Psychological Testing*. Washington, DC: American Educational Research Association.
- Ankenmann, R. D., Witt, E. A., & Dunbar, S. B. (1999). An investigation of the power of the likelihood ratio goodness-of-fit statistics in detecting differential item functioning. *Journal of Educational Measurement, 36*(4), 277–300.
- Atar, B., & Kamata, A. (2011). Comparison of IRT likelihood ratio test and logistic regression DIF detection procedures. *Hacettepe University Journal of Education, 41*, 36–47.
- Awuor, R. A. (2008). *Effect of unequal sample sizes on the power of DIF detection: An IRT-based monte carlo study with sibttest and Mantel-Haenszel procedures* [Unpublished master thesis]. Virginia Polytechnic Institute and State University.
- Camilli, G., & Shepard, L. A. (1994). *Methods for identifying biased test items*. SAGE.
- Chen, J. H., Chen, C. T., & Shih, C. L. (2014). Improving the control of Type I error rate in assessing differential item functioning for hierarchical generalized linear model when impact is presented. *Applied Psychological Measurement, 38*(1), 18–36.
- Clauser, B. E., & Mazor, K. M. (1998). Using statistical procedures to identify differentially functioning items. *Educational Measurement: Issues and Practice, 17*, 31–44.
- Çepni, Z. (2011). *Değişen madde fonksiyonlarının sibttest, Mantel Haenszel, lojistik regresyon ve madde tepki kuramı yöntemleriyle incelenmesi* [Differential item functioning analysis using sibttest, Mantel Haenszel, logistic regression and item response theory methods]. [Unpublished master thesis], Hacettepe University.
- Ellis, B., & Raju, N. (2003). *Test and item bias: what they are, what they aren't, and how to detect them* (ED480042). ERIC. <https://eric.ed.gov/?id=ED480042>
- Embretson, S. E., & Reise, S. P. (2000). *Item response theory for psychologists*. Psychology Press.
- Embretson, S. E. (2007). Construct validity: A universal validity system or just another test evaluation procedure?. *Educational Researcher, 36*(8), 449-455.
- Erdem-Keklik, D. (2012). *İki kategorili maddelerde tek biçimli değişen madde fonksiyonu belirleme tekniklerinin karşılaştırılması: Bir simülasyon çalışması* [Comparison of techniques in detecting uniform differential item functioning in dichotomous items: A simulation study]. (Tez No.311744). [Doctoral dissertation, Ankara University], National Thesis Center.
- Furlow, C. F., Ross, T. R., & Gagné, P. (2009). The impact of multidimensionality on the detection of differential bundle functioning using simultaneous item bias test. *Applied Psychological Measurement, 33*(6), 441–464.
- Gierl, M. J., Rogers, W. T., & Klinger, D. A. (1999). Using statistical and judgmental reviews to identify and interpret translation differential item functioning. *Alberta Journal of Educational Research, 45*(4), 353–376.
- Gierl, M. J., Jodoin, M. G., & Ackerman, T. A. (2000, April 24–27). Performance of Mantel-Haenszel, simultaneous item bias test, and logistic regression when the proportion of DIF items is large [Paper presentation]. *The Annual Meeting of the American Educational Research Association (AERA)*, New Orleans, Louisiana, USA.
- Gök, B., Kabasakal, K. A., & Kelecioğlu, H. (2014). PISA 2009 öğrenci anketi tutum maddelerinin kültüre göre değişen madde fonksiyonu açısından incelenmesi [Analysis of attitude items in PISA 2009 student questionnaire in terms of differential item functioning based on culture]. *Journal of Measurement and Evaluation in Education and Psychology, 5*(1), 72–87.
- Hambleton, R. K., Swaminathan, H., & Rogers, H. J. (1991). *Fundamentals of item response theory*. SAGE.
- Hou, L., de la Torre, J. D., & Nandakumar, R. (2014). Differential item functioning assessment in cognitive diagnostic modeling: Application of the Wald test to investigate DIF in the DINA model. *Journal of Educational Measurement, 51*(1), 98–125.

- Jeon, M., Rijmen, F., & Rabe-Hesketh, S. (2013). Modeling differential item functioning using a generalization of the multiple-group bifactor model. *Journal of Educational and Behavioral Statistics*, 38(1), 32–60.
- Jodoin, M. G., & Gierl, M. J. (2001). Evaluating type I error and power rates using an effect size measure with the logistic regression procedure for DIF detection. *Applied Measurement in Education*, 14(4), 329–349.
- Kabasakal, K. A., & Kelecioğlu, H. (2015). Effect of differential item functioning on test equating. *Educational Sciences: Theory and Practice*, 15(5), 1229–1246.
- Kan, A., Sünbül, Ö., & Ömür, S. (2013). 6.- 8. Sınıf seviye belirleme sınavları alt testlerinin çeşitli yöntemlere göre değişen madde fonksiyonlarının incelenmesi [Investigating the differential item functions of the 6th-8th grade subtests of the Level Assessment Examination according to various methods]. *Mersin University Journal of the Faculty of Education*, 9(2), 207–222.
- Kane, M. (2006). Content-related validity evidence in test development. In S. M. Downing & T. M. Haladyna (Eds.), *Handbook of test development* (pp. 131–153). Lawrence Erlbaum Associates.
- Karami H., & Nodoushan M. A. S. (2011). Differential item functioning (DIF): Current problems and future directions. *International Journal of Language Studies*, 5(4), 133–142.
- Lee, S., Bulut, O., & Suh, Y. (2017). Multidimensional extension of multiple indicators multiple causes models to detect DIF. *Educational and Psychological Measurement*, 77(4), 545–569.
- Lee, K. (2003). *Parametric and nonparametric IRT models for assessing differential item functioning* [Unpublished doctoral dissertation]. Wayne State University.
- Li, H., Qin, Q., & Lei, PW. (2017). An examination of the instructional sensitivity of the TIMSS math items: a hierarchical differential item functioning approach, *Educational Assessment*, 22(1), 1–17.
- Mertler, C. A., & Vannatta, R. A. (2005). *Advanced and multivariate statistical methods: Practical application and interpretation* (3rd ed.). Pyrczak.
- Messick, S. (1989). Validity. In R. L. Linn (Ed.), *Educational measurement* (3rd ed., pp. 13–103). American Council on Education.
- Penfield, R. D., & Lam, T. (2000). Assessing differential item functioning in performance assessment: Review and recommendations. *Educational Measurement: Issues and Practice*, 19(3), 5–15.
- Rogers, H. J., & Swaminathan, H. (1993). A comparison of logistic regression and Mantel-Haenszel procedures for detecting differential item functioning. *Applied Psychological Measurement*, 17, 105–116.
- Roussos, L. A., & Stout, W. F. (1996). Simulation studies of the effects of small sample size and studied item parameters on SIBTEST and Mantel-Haenszel type I error performance. *Journal of Educational Measurement*, 33, 215–230.
- Sireci, S. G., & Allalouf, A. (2003). Appraising item equivalence across multiple languages and cultures. *Language Testing*, 20(2), 148–166.
- Sireci, S. G., & Rios, J. A. (2013). Decisions that make a difference in detecting differential item functioning. *Educational Research and Evaluation*, 19(2-3), 170–187.
- Sünbül, Ö., & Sünbül, S. Ö. (2016). Type I error rates and power study of several differential item functioning determination methods. *Elementary Education Online*, 15(3), 882–897.
- Şahin, M. G. (2017). Comparison of objective and subjective methods on determination of differential item functioning. *Universal Journal of Educational Research* 5(9), 1435–1446.
- Turhan, A. (2006). *Multilevel 2PL item response model vertical equating with the presence of differential item functioning* [Unpublished doctoral dissertation]. The Florida State University.
- Vaughn, B. K., & Wang, Q. (2010). DIF trees: Using classifications trees to detect differential item functioning. *Educational and Psychological Measurement*, 70(6) 941–952.
- Walker, C. M., & Gocer Sahin, S. (2016). Using a multidimensional IRT framework to better understand differential item functioning (DIF): A tale of three dif detection procedures. *Educational and Psychological Measurement*, 77(6), 945–970.

- Zheng, Y., Gierl, M. J., & Cui, Y. (2007). Using real data to compare DIF detection and effect size measures among Mantel-Haenszel, SIBTEST and logistic regression procedures [Paper presentation]. *NCME*, Chicago.
- Zieky, M. (1993). Practical questions in the use of DIF statistics in test development. In P. W. Holland & H. Wainer (Eds.), *Differential item functioning* (pp. 337–347). Lawrence Erlbaum Associates.
- Zumbo, B. D. (1999). *A Handbook on the theory and methods of differential item functioning (DIF): Logistic regression modeling as a unitary framework for binary and likert-type (ordinal) item scores*. Directorate of Human Resources Research and Evaluation, Department of National Defense.
- Zumbo, B. D., & Gelin, M. N. (2005). A matter of test bias in educational policy research: bringing the context into picture by investigating sociological community moderated (or mediated) test and item bias. *Journal of Educational Research and Policy Studies*, 5(1), 23.
- Zumbo, B. D. A., & Thomas, D. R. (1996). A measure of dif effect size using logistic regression procedures [Paper presentation]. *National Board of Medical Examiners*. US, Philadelphia.
- Zwick, R. (2012). A review of ETS differential item functioning assessment procedures: Flagging rules, minimum sample size requirements, and criterion refinement. *ETS Research Report Series*, 2012(1).

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 33%

Author 2: 33%

Author 3: 33%

The contribution rate of researchers to study is equal.

Conflict Statement

There is no conflict of interest the research.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Değişen Madde Fonksiyonunda Tip I Hata ve Güç Oranının Farklı Yöntemlere Göre Belirlenmesi

Giriş

Eğitimde ve psikolojide ölçme ve değerlendirmenin üzerinde durduğu en önemli konulardan biri ulusal (Kamu Personel Seçme Sınavı [KPSS], Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı [ALES] vb.) ve uluslararası (Test of English as a Foreign Language [TOEFL], Programme for International Student Assessment [PISA], Trends in International Mathematics and Science Study [TIMSS] vb.) düzeyde yapılan geniş ölçekli sınavlardır. Sonuçları üzerinde bireyler ve ülkeler hakkında önemli kararlar alınan bu sınavların değerlendirilmesi ve yorumlanması büyük önem taşımaktadır. Dolayısıyla bu sınavların, geçerli yorumlar yapılmasına olanak sağlaması gerekmektedir (Clauser & Mazor, 1998). Diğer bir ifadeyle test sonuçları üzerine verilen kararların doğruları; testten alınan puanların ise bireylerin gerçek performanslarını yansıtması için, yapılan ölçmelerin geçerli olmasına ihtiyaç duyulmaktadır. Test puanları üzerine yapılan yorumların ya da test puanları sonucu alınan kararların doğruluğunu göstermeye yardımcı olan teori ve kanıtların bir derecesi (American Educational Research Association [AERA] vd., 1999) olan geçerlik, testlerin ve diğer ölçme araçlarının sahip olması gereken en önemli özelliklerdendir. Testler ölçtüğü yapıyı, ölçülen özellik dışındaki değişkenlerden etkilenmeden bütün bireyler için aynı doğrulukta ölçmelidir (Sireci & Rios, 2013). Geçerlik birçok faktörden etkilenmekle birlikte, bunların arasında testler için en önemli tehdit unsurları madde ve test yanlılığıdır (Clauser & Mazor, 1998). Madde yanlılığı, 1910 yılında Alfred Binet'in düşük sosyoekonomik düzeye sahip çocuklara zekâ testi uyguladığı çalışmayla ortaya çıkmıştır. Binet, test maddelerini incelediğinde bazı maddelerin zekâ haricinde kültürel özellikleri de ölçtüğünü ortaya koymuş ve testten çıkarmayı uygun görmüştür. 1912 yılında ise Stern, çalışmasında farklı alt gruplarda farklı sonuçların ortaya çıktığını göstermiştir. Daha sonrasında testlerin tek bir gruba yönelik hazırlanması yönünde düşünceler gelişmiştir (Camilli & Shepard, 1994). Cleary ise çalışmasında yordanan ölçüt puanların alt

gruplarda çok yüksek veya çok düşük olduğunu bularak, test yanlılığı kavramını ortaya atmıştır (Lee, 2003).

Yanlılık, bireylerin ölçmek istediğimiz özelliklerine (cinsiyet, okul türü, etnik köken vb.) başka değişkenlerin karışmasıdır ve testten elde edilen sonuçları ve bu sonuçlara dayalı olarak yapılan yorumları bozan sistematik hatalara yol açmaktadır (Gierl vd., 1999). Bir testte bir gruba avantaj sağlayan yanlı maddelerin bulunması testin geçerliği için önemli bir tehdittir (Kane, 2006; Messick, 1989). Dolayısıyla testin hiçbir alt gruba avantaj sağlamayacak şekilde hazırlanması çok önemlidir (Gök vd., 2014). Bir testteki maddelerin yanlı olup olmadığının incelenmesinde ilk basamak ilgili maddelerde DMF olup olmadığını tespit etmektir. DMF, yetenek düzeyi aynı olan bireylerin bir maddeyi doğru yanıtlama ihtimalinin, buldukları alt gruplara göre farklılaşmasıdır (Embretson & Reise, 2000; Hambleton vd., 1991). Zumbo'a (1999) göre DMF, madde ile ölçülmesi hedeflenen yetenek düzeyi için yapılan bir karşılaştırma çalışmasında farklı gruplarda bulunan bireylerin ilgili maddeyi doğru yanıtlama ihtimallerindeki farklılıkları açıklamaktadır. DMF analizleri bir testin içerdiği yanlı maddelerin tespitinde ön koşul olmakla birlikte aynı zamanda testin geçerliği için bir kanıt konumundadır (Embretson, 2007). Yanlı bir maddenin kesinlikle DMF içerdiği söylenebilirken; bir maddede DMF olması o maddenin yanlı olduğunu söylemekte yeterli değildir. DMF içerdiği tespit edilen bir madde için ancak uzman görüşüyle yanlı olduğu sonucuna ulaşılabilir (Zumbo ve Gelin, 2005), dolayısıyla madde yanlılığı tespiti temelinde nitel bir değerlendirme gerektirir (Ellis & Raju, 2003; Furlow vd., 2009; Sireci & Allalouf, 2003).

Literatürde birçok DMF belirleme yönteminden bahsedilmektedir. Ancak Karami ve Nodoushan (2011) aynı test için farklı yöntemlerin farklı maddelerde DMF belirlediğini, dolayısıyla yalnızca tek yöntemle göre analiz yapılarak sonuçların tek yöntemle göre yorumlanmasının doğru olmadığını belirtmişlerdir. Buna göre eğer bir madde birden çok yöntemle göre DMF içeriyorsa, maddenin DMF'li olduğu farklı yöntemlerle desteklenmiş olur. DMF yöntemleri ile ilgili yapılmış çalışmalarda, farklı koşullar altında Tip I hata ve güç oranlarının değişimi üzerine çalışıldığı görülmüştür. Bununla birlikte çalışmalarda benzer yöntemlerin kullanılması dikkat çekmektedir. Bu çalışmada Klasik Test Kuramı ve Madde Tepki Kuramı temelli yöntemlerin Tip I hata ve güç oranları üzerine çalışılmıştır. Bu bağlamda DMF'nin belirlenmesinde koşullar ve koşulların düzeyleri değiştirilmiştir. Dolayısıyla kullanılan yöntemler, ele alınan koşullar ve koşulların düzeyleri açısından diğer çalışmalardan ayrılmaktadır. Çalışmada aşağıdaki araştırma problemlerine cevap aranmıştır.

1. Farklı koşullar altında LR, MH, Lord'un χ^2 , Breslow-Day ve Raju'nun alan indeks yöntemlerinin Tip I hata oranları nasıldır?
2. Farklı koşullar altında LR, MH, Lord'un χ^2 , Breslow-Day ve Raju'nun alan indeks yöntemlerinin güç oranları nasıldır?

Yöntem

Bu çalışmada DMF belirlenmesinde kullanılan KTK ve MTK yöntemlerinin Tip I hata ve güç oranları farklı koşullar altında karşılaştırmalı olarak incelenmiştir. Yöntemlerin performansları hakkında bilgi vererek, literatürde mevcut bilgilere katkı sağlayacak bir araştırma olması nedeniyle, araştırmanın modeli temel araştırmadır.

Mevcut çalışmada, DMF tespitinde kullanılan farklı yöntemlerin belirli koşullardaki Tip I hata ve güç oranlarının belirlenmesi için simülatif veri kullanılmıştır. Tip I hata ve güç oranların

belirlenmesinde aynı veri seti kullanılmıştır. Veri üretimi için WinGen 3 yazılımından yararlanılmıştır. DMF belirleme yöntemlerinden farklı koşullarda elde edilen Tip I hata oranlarının ve gücün hesaplanması amacıyla, referans ve odak gruplar için örneklem büyüklükleri 1000(O=500, R=500), 1500(O=500,R=1000), 1500(O=1000, R=500), 2000(O=1000, R=1000) şeklinde tek biçimli DMF gösteren veriler oluşturulmuştur. Her analiz için madde sayısı 25 olarak belirlenmiştir. Veri üretiminde iki parametrelili lojistik model kullanılmıştır. Madde parametrelerinden a parametresi, ortalaması 0,8, standart sapması 0,02 olan normal dağılımla elde edilmiştir. b parametresi ise minimum değeri -3, maksimum değeri +3 olan tek biçimli dağılımdan random olarak çekilerek belirlenmiştir. Bireylerin yetenek dağılımına ait değerler de ortalaması 0, standart sapması 1 olan normal dağılımdan elde edilmiştir. Bu şekilde bireylerin yetenek dağılımını farklılaştırılmadan referans ve odak gruplar için güçlük düzeylerinde farklılık oluşturarak DMF'li madde elde edilmiştir. Referans ve odak gruplar için madde parametreleri ortaktır. DMF içeren madde oranı (%12, %20) ve DMF düzeyi (b= 0,75) şeklinde veriler üretilmiştir. DMF içermesi istenen madde sayısı kadar b parametresine DMF miktarı olan 0,75 eklenmiştir.

DMF'nin tespitinde, KTK ve MTK temelli yöntemler karşılaştırmalı olarak kullanılmıştır. Analizler için "difR" paketi kullanılmıştır. KTK ve MTK temelli LR, Mantel-Haenszel, Lord'un χ^2 , Breslow-Day (BD) ve Raju'nun alan indeks yöntemleri kullanılmıştır. DMF tespitine yönelik analizler için R.3.0.1 programı ve "difR" paketi kullanılmıştır. "difR", değişen madde fonksiyonu belirleme yöntemlerine yönelik indeksleri barındıran bir R paketidir (Magis vd, 2015). Tip I hata analizlerinde, her koşul için ayrı ayrı gerçekleştirilen 20 tekrar sonucunda, DMF içermediği halde DMF'li olarak işaretlenen maddelerin oranı belirlenmiştir. Güç analizlerinde ise, DMF içerirken, DMF'li olarak işaretlenen maddelerin oranı belirlenmiştir.

Bulgular

Yöntemlerin örneklem ve DMF'li madde oranlarına göre güç oranları ortalamaları incelendiğinde LR için sonuçlarda minimum değer 0,141 maksimum değer 0,27; Lord'un χ^2 için minimum değer 0,072 maksimum değer 0,15; MH için minimum değer 0,14 maksimum değer 0,22; BD için minimum değer 0,015 maksimum değer 0,05, Raju'nun alan indeksi yöntemlerinden elde edilen minimum değer 0,041 maksimum değer 0,09 olarak hesaplanmıştır.

En düşük Tip I hata oranı tekrar oranlarının ortalaması alınarak belirlenmiştir. Sonuçlara bakıldığında genel olarak Tip I hata oranının en fazla LR ve Lord'un χ^2 yöntemlerinde en az BD yönteminde olduğu görülmektedir. Bu bulgular, odak ve referans grupların yetenek dağılımları aynı olduğunda MH ve LR Tip I hata oranlarının benzer olduğu göstermektedir. LR, Lord'un χ^2 ve MH yöntemlerinde Tip I hata oranlarının örneklem büyüklüğüne göre dalgalanma gösterdiği ve örneklem büyüklüğü arttıkça arttığı, BD yönteminde büyük örneklem ve DMF oranının az olduğu (%12) durumda en yüksek olduğu, Raju'nun alan indeksi yönteminde ise referans grubunun odak grubun sayısından fazla DMF oranının yüksek olduğu (%20) durumda olduğu görülmüştür.

Diğer yandan yöntemlerin örneklem ve DMF'li madde oranlarına göre güç oranları ortalamaları incelendiğinde LR için minimum değer 0,90 maksimum değer 1, Lord'un χ^2 için minimum değer 0,94 maksimum değer 1, MH için minimum değer 0,74 maksimum değer 1, BD için minimum değer 0,03 maksimum değer 0,70, Raju'nun alan indeksi yöntemlerinden elde edilen minimum değer 0,88 maksimum değer 1 olarak hesaplanmıştır. En düşük güç oranı tekrar oranlarının ortalaması alınarak

belirlenmiştir. Sonuçlara bakıldığında genel olarak güç oranının en fazla %12 DMF'li madde oranlarında olduğu durumda en az BD yönteminde olduğu görülmüştür.

Koşullardan elde edilen sonuçlara bakıldığında güç oranının genel olarak Lord'un χ^2 yönteminde en fazla, BD yönteminde ise en az olduğu görülmektedir. 2000 kişilik örnekleme %12 oranında DMF'li madde bulunduğu koşulda güç oranının genel olarak bütün yöntemler için en fazla olduğu durum olduğu ve en düşük oranın BD yönteminde 0,2 olduğu görülmektedir. Ayrıca BD yönteminde güç oranının en fazla büyük örneklem ve DMF'li madde oranının %20 olduğu durumda olduğu görülmüştür.

Tartışma ve Sonuç

Mevcut çalışma kapsamında DMF içeren madde oranlarının farklı olduğu durumlar ve örneklem sayıları, Tip I hata ve güç oranları ortalamalarının değişimleri için gözlenmiştir. Gözlemler için KTK ve MTK yöntemlerinden yararlanılmıştır. LR, Lord'un χ^2 ve MH yöntemlerinde Tip I hata oranlarının örneklem büyüklüğüne göre değiştiği ve örneklem büyüklüğü arttıkça arttığı görülmüştür. BD yönteminde örneklemin büyük ve DMF oranının az olduğu (%12) durumda en yüksek olduğu, Raju'nun alan indeksi yönteminde ise en yüksek hata oranı referans grubun örnekleminin odak grubun örnekleminde büyük, DMF oranının yüksek olduğu (%20) durumda görülmüştür. Bu sonuçlar literatürdeki benzer çalışmalarla da paralellik göstermektedir (Ankenmann vd., 1996; Atar & Kamata, 2011; Gierl vd., 2000; Rogers & Swaminathan, 1993; Roussos & Stout, 1996; Vaughn & Wang 2010).

Örneklem büyüklüğünün en yüksek, DMF'li madde oranının düşük olduğu koşulda; LR, Lord'un χ^2 , MH ve Raju'nun alan indeksi yöntemlerinde güç oranının en fazla olduğu; en düşük oranın ise BD yönteminde 0,2 olduğu görülmektedir. Sünbül ve Sünbül (2016), simülatif veri üzerinden yaptıkları çalışmada örneklem büyüklüğünün artmasıyla yöntemlerin güç oranlarının arttığının belirtmişlerdir. Aynı zamanda DMF'li madde oranının artmasıyla yöntemlerin güç oranlarının azalması bu çalışmayı destekler niteliktedir.

Sonuçlarda genel anlamda DMF'li madde oranının artması, Tip I hatanın artmasına ve gücün azalmasına sebep olmuştur. Benzer şekilde Erdem-Keklik (2014), MH ve LR yöntemlerinin Tip I hata ve güç oranlarını karşılaştırdığı çalışmada geniş örneklem büyüklüklerinde Tip I hatanın yüksek olduğunu belirtmiştir. Analiz sonuçlarında düşük hata ve yüksek güç ile MTK yöntemlerinden olan Lord'un χ^2 ve Raju'nun alan indeksi yöntemlerinin diğerlerine nazaran daha iyi sonuçlar verdiği görülmüştür.

Öneriler


Bu çalışma kapsamında tek biçimli olan DMF incelenmiştir. Benzer çalışmalara ek olarak tek biçimli olmayan DMF, yetenek parametrelerinin değiştirilmesiyle incelenebilir. Çalışmada madde sayısı 25 olarak belirlenmiş madde sayısının daha az veya daha fazla olduğu durumlarda hata ve güç oranlarının değişimi farklı DMF belirleme yöntemleriyle de incelenebilir. Ayrıca örneklem büyüklükleri, örneklem büyüklüğü oranı, madde ayırt ediciliği gibi değişkenler manipüle edilerek DMF belirleme yöntemlerinin performansları incelenebilir.




<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Primary School Teachers' Experiences on The Process of Teaching Mathematics with The Digital Storytelling Method

 Şuheda Ünal, Teacher, Corresponding Author
Ministry of National Education, Türkiye
unallsuhedaa97@gmail.com
Orcid ID: 0000-0003-0481-5760

 Osman Çil, Assoc. Prof. Dr.
Kırşehir Ahi Evran University, Türkiye
ocil@ahievran.edu.tr
Orcid ID: 0000-0001-5903-9864

Article Type: Research Article

Received Date: 29.03.2023

Accepted Date: 10.10.2023

Published Date: 30.11.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: 10.29329/tayjournal.2023.610.10

Citation: Ünal, Ş., & Çil, O. (2023). Primary school teachers' experiences on the process of teaching mathematics with the digital storytelling method. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 922-971.

Abstract

In this study, it was aimed to analyze primary school teachers' experiences on mathematical education prepared with digital storytelling, and in this regard, phenomenological research design was utilized. Using the criterion sampling method among purposive sampling methods, a study group consisting of 25 primary school teacher teachers was chosen. The obtained data was analyzed by means of content analysis method. As a result of the research, it is seen that, according to statement of the primary school teachers, digital stories can be used in the mathematical lessons for being attention-grabbing, at introduction phase for activating prior knowledge, at development phase for allowing students to take active role in the process and at evaluation phase for helping to repeat subjects and identify the learning losses. Additionally, it was indicated by them that digital stories can be used in teaching of numbers and operations as well as geometry and measurement that are parts of mathematics curriculum. It was emphasized by the primary school teachers that the need of technological equipment and materials should be met during teaching process conducted with digital storytelling. Expressing that digital stories should be prepared in a way to allow students' active participation based on their interests, needs and individual differences, it was also highlighted by the primary school teachers that it is important to support the process with concrete materials and increase the number of digital stories for different subjects.

Keywords: Digital story, mathematics teaching, primary school teacher.

Introduction

Science and technology are given more importance in all areas of life as human needs become more different day by day (Dumlu Güler, 2011), and this rapid transformation also effects learning environments. With the integration of technology into educational processes, innovative opportunities emerge as to efficiently teach instructional objectives and learning outcomes (Kurudayıoğlu & Bal, 2014). Nowadays, instead of single-stimulus applications such as course books, teaching materials including multiple stimuli based on learning-by-doing and permanent learning are required (Kuzu Sarar and Durna, 2020). Accordingly, it is believed that enriching the teaching methods in education with digital materials considering the students' requests and needs will allow the students to structure what they learn and pay more attention to the lesson (Göçen, 2014). Utilization of digital materials that are interesting for students will offer an opportunity for a more productive educational process particularly in lessons such as mathematics in which some students display negative attitudes. In this respect, the digital storytelling draws attention as one of the most effective teaching methods since it enables students to structure and transfer what they learn in their mind and access the knowledge through concrete experiences (Yüksel Arslan et al., 2016).

Traditional storytelling has been used as a mean of communication among the people as well as a method to educate the students since the beginning of education (Yoon, 2013). Stories began to be recorded by means of paintings on cave walls since early humans and have become more common with the books printed thanks to invention of printing house (Turgut & Kışla, 2015). Thanks to stories, information based on experiences easily disseminated among the people, new information was obtained, and events were made sense of (Sever, 2014), thus the stories were begun to be frequently used for education purposes. In this context, the stories draw attention as an effective educational tool in educating well-qualified and creative people who can interpret and evaluate events in accordance with needs of the age (Ayvaz Tunç & Karadağ, 2013). The increase in the use of technology in education has provided different opportunities, and traditional stories have started to transform into digital stories by combining with technology (Eroğlu, 2022). Positive effects of stories in memorability have

enabled digital stories to be used as a learning tool in education and increased its importance in time (Ulum & Yalman, 2018).

As the stories have been recorded, kept and transferred to digital media through texts as well as published online using the technology, the concept of digital story has emerged (Gökben & Kışla, 2015). Using the images, voices, music and telling as a base, Rule (2005) describes digital storytelling as a modern portrayal of the stories with various dimensions and colors in interpreting of different characters, events, experiences and meanings. Digital storytelling is a process of presentation of an event that includes voice, image, photograph, music, video, animation effect and text on an interactive online media (Figa, 2004). Demirbaş (2019), on the other hand, describes the digital story as short videos with text, voice, picture and animation elements. Making the stages of writing story texts and transferring the written stories faster thanks to opportunities offered by online and digital media, students' interaction in the process can be increased by preventing them from becoming distracted. In addition, digital stories produced in combination with pictures, images and texts allow students to understand better and faster (Sur, 2022), and it is observed that the students have improved their skills of discovering, accessing and analyzing the knowledge, as well as different ideas and planning development (Ateş, 2023). The use of digital stories in education draws students' attention to the lesson and provides a creative learning environment (Sadik, 2008). In other words, with combination of technology and traditional storytelling, creating digital stories has been noted as one of the effective ways of increasing productivity in education (Kocaman Karoğlu, 2015).

Aside from the fact that access to information and its active use have been made a basic need of the people by developments in information and communication technologies in the current age (Çukurbaşı and İşman, 2014), it has changed various things in several fields of our lives, particularly in education environment (Karakoyun, 2014). Since science and technology is effective today, the idea indicating that an effective teaching activity cannot be provided by transferring knowledge based on direct instruction and rote learning has emerged (Aslan, 2014). With the improvement of technology over the years, ordinary educational materials have been far from being attention-grabbing for students whose expectations then have changed in learning environments. Accordingly, it is quite important to use proper, new and various methods in line with the age's technological improvements in education instead of traditional education methods in order to increase the output of education (Uslupehlivan et al., 2017). As methods of transferring and sharing the information have evolved into tools such as computer, information devices and multimedia technologies with the rapid change of technology, it can be expressed that the society in which we keep living is on the way to becoming an information society (Arslan, 2006). It is believed that technology-assisted learning is effective in development of the knowledge, skill and life-long learning process in order to achieve success in an ever-changing world (Domalewska, 2014). Knowledge, skills and competencies required for education should provide the skill of learning to learn and turning the knowledge content into experiences in addition to learning the knowledge (Gömleksiz & Pullu, 2017).

According to Usluel and Atal (2013), the technological opportunities accessed by students outside the school but not sufficiently offered in schools creates different problems, defined as "digital inconsistency". The students are ensured to be focus on the lessons and meaningful and permanent learning is provided when technology is effectively used in school and the problem of digital inconsistency is solved (Dola & Aydın, 2020). It has been similarly emphasized by Yang and Wu (2012)

that effective and active use of technology in learning environments is quite important in providing meaningful learning and catching the students' attraction. Additionally, it has been confirmed that the students played an active role during the lessons and started to display positive manners to the lesson with the use of digital storytelling (Demir & Kılıçkiran, 2018). Correspondingly, processes based on integration of technology into learning environments are very important in this period of rapid technological development (Çoruk & Seferoğlu, 2020).

Akkoyunlu & Kurbanoglu (2003) mention that teachers should embrace effect of the technology on education and improve themselves in line with the ever-changing technology to be successful in education as the students grow up with the technology. Similarly, it has been stated by Kahraman (2013) that the teachers must improve themselves and keep up with the times in this regard due to continuous change and development in technology. The teachers can benefit from digital stories to define a process, present an opinion and explain educational topics using materials (Wang & Zhan, 2010). Making the teachers both guide and active player in classroom, the digital stories also help the teachers save time and fulfill an effective and permanent learning process (Mangal, 2020).

Being related to everything that exists and present in all branches of science, the mathematics, created by human being, is a tool as well as a branch of science, the importance of which is increasing day by day in our lives as the requests and needs of human beings have increased in almost all fields (Bozkurt, 2008). Since curriculums do not allow students to demonstrate their own skills, restrict their attention and active participations and necessitate the use of methods such as rote learning and direct instruction in mathematics teaching, the students become distracted and get bored (Lesser, 2001). Besides, the students cannot associate abstract mathematical concepts with their daily lives, and thus they begin to be prejudiced against the mathematics. (Küçüköğlü & İncikabı, 2020). Digital stories help students associate academical knowledge with everyday life, address colorful world of the children, make the students active player, present examples from everyday life and provide them with chance to have concrete experiences by activating more than one sense organ. In this way, it is pointed out as one of the alternative student-centered teaching methods in mathematics teaching.

According to Smeda et al. (2010), digital storytelling, as a contemporary approach integrating individuals' unique opinions with technology and centering the students, helps provide rich and cooperative learning and teaching environments. Thanks to integration of digital stories with learning environment, it becomes possible for the students to gain digital skills and understand better the topics described with the story (Behmer et al., 2006). In addition, it is believed that digital storytelling gains the skills of writing, organizing, presentation, communication, problem solving and evaluation (Robin, 2006). Mathematics teaching and learning become meaningful since the digital stories draw students' attention and enable them to transfer theoretical knowledge into everyday life (Schiro, 2004). In order for teachers and teacher candidates to experience digital stories, become familiar with and use it in education process, the concept of digital story firstly must be introduced to them (Kukul & Kara, 2019). For this reason, it is considered that supporting use of the digital stories in the mathematics teaching will help make mathematics lessons more entertaining and understandable. Additionally, it is believed that analyzing the primary school teachers' experiences on using digital stories in mathematics lessons will offer important opportunities for more frequent and effective use of digital stories in mathematics lessons. Taking this perspective into account, it has been aimed to analyze the primary school teachers' views about the mathematics teaching planned and implemented with digital storytelling method.

Method

Research Model

It has been planned to analyze primary school teachers' experiences on the use of digital story method, which is not a common teaching method in our country and is generally not preferred in mathematics lessons. Phenomenological research design uncovers participants' perceptions and experiences on the phenomena as well as meanings attributed to aforementioned factors based on the phenomena on which in-depth information cannot be obtained, which enables an appropriate research environment for studies conduct to analyze what the phenomena mean (Yıldırım & Şimşek, 2018). In this qualitative study, digital stories and lesson plans were prepared and used by teachers in classrooms with regard to specific learning outcomes for all levels of primary school in the mathematics teaching by implementing the phenomenological research design, and the teachers' views on the use of digital storytelling in mathematics teaching were determined.

Population and Sampling of the Research

The 25 primary school teachers, who voluntarily participated in this study, were selected from the 18-65 age group based on criterion sampling method among purposive sampling methods. The participants are selected based on predetermined criteria in line with the purpose of the study in this method (Yıldırım & Şimşek, 2018). While selecting the primary school teachers participating in this study, the criteria of having adequate knowledge on digital story, being able to use digital stories during the lessons and having sufficient skills in the use of media tools were taken into consideration. The interview questions that will be used for data collection were designed in a way that would not have any negative effect on the participants, and pseudonyms created for the participants were used when presenting the data obtained.

Table 1. *Demographic information of primary school teachers who participated in the study*

Participant	Gender	Class Level He/She Teaches	Educational Background	Place of Duty
Alper	Male	1st Grade	Undergraduate degree	City Center
Arda	Male	3rd Grade	Undergraduate degree	Village
Arzu	Female	2nd Grade	Undergraduate degree	Village
Bilge	Female	2nd Grade	Undergraduate degree	Village
Cansu	Female	3rd Grade	Undergraduate degree	Village
Cem	Male	2nd Grade	Undergraduate degree	City Center
Demir	Male	1st Grade	Undergraduate degree	City Center
Didem	Female	2nd Grade	Undergraduate degree	City Center
Efe	Male	2nd Grade	Master's degree	City Center
Elif	Female	1st Grade	Undergraduate degree	City Center
Emin	Male	1st Grade	Undergraduate degree	City Center
Eylül	Female	4th Grade	Undergraduate degree	City Center
Ezgi	Female	2nd Grade	Master's degree	City Center
Figen	Female	1st Grade	Undergraduate degree	City Center
Furkan	Male	3rd Grade	Undergraduate degree	City Center
Gamze	Female	2nd Grade	Undergraduate degree	Village
Hakan	Male	1st Grade	Undergraduate degree	City Center
İlker	Male	2nd Grade	Master's degree	City Center
Kerem	Male	3rd Grade	Undergraduate degree	Village
Koray	Male	1st Grade	Undergraduate degree	City Center
Mete	Male	4th Grade	Undergraduate degree	City Center
Oğuz	Male	4th Grade	Undergraduate degree	City Center
Ozan	Male	2nd Grade	Master's degree	City Center
Sude	Female	3rd Grade	Undergraduate degree	City Center
Zehra	Female	2nd Grade	Undergraduate degree	City Center

Table 1 displays the demographic information of the primary school teachers who participated in the study. When the information given on the table is analyzed, it is seen that 14 of the primary school teachers are male (f=14), 11 of them are female (f=11), 7 teachers teach 1st grade (f=7), 10 teachers teach 2nd grade (f=10), 5 teachers teach 3rd grade (f=5) and 3 teachers teach 4th grade (f=3). Additionally, it is observed that 21 primary school teachers have bachelor's degrees (f=21) whereas 4 primary school teachers have master's degrees (f=4). It is also seen that the number of teachers working in the city center (f=19) is higher than the number of teachers working in the village (f=6).

Educational Implementation Process

Preparation of Digital Stories

Taking factors of digital story presented in studies of Robin (2008), Lambert (2010) and Ohler (2013) into consideration, digital stories were created for 4 different grades of primary school, one for each, using the platform "Powtoon" by the researcher. Based on digital stories, lesson plans were prepared in a way that will cover two lesson hours (40'+40') for the teachers who will conduct the storytelling during the lessons. Issues that might be experienced by the students in everyday life were covered when plot of the digital story was fictionalized. The researcher considered activities in which students could participate during the process of preparation of digital story and lesson plan. In this way, active participation of the students was aimed. Four scientists specialized in mathematics teaching, educational sciences and Turkish language were consulted to get their opinions after both digital stories and lesson plans were prepared. The digital stories and lesson plans were reorganized taking the scientists' opinions into consideration. Digital stories and lesson plans completed afterwards were submitted to 4 primary school teachers and 1 information technologies specialist, and in line with Lawshe (1975) technique, content validity ratio was determined as 1 for all the digital stories and lesson plans.

Content and Practice Process of Digital Stories

Topic scope and content of the digital stories prepared in line with outcomes of the mathematics teaching for each grade level of primary school is specified below.

Within the scope of outcome "M.1.1.2.6. Solves problems that require addition with natural numbers." in the learning area of "Numbers and Operations" for 1st graders, a digital story lasting 02 minutes and 37 seconds, appropriate for students' levels, was prepared. In plot of the digital story prepared for 1st graders, three problems were presented about how many flowers three friends planted in the garden in a flower planting activity. The video was paused before answer of each problem was given, and the same objects presented in the story were distributed in the classroom. Then, the students were asked to find the answer on their own. The digital story was continued afterwards, and they were ensured to check their answers. At the end of the digital story, flowers of different colors and gardening materials were given to the students. Next, they were asked to choose a character from the story as well as flowers as many as they wanted. Then, the students were encouraged to create their own problems and gardens. In this direction, they were ensured to participate in problem-posing activities.



Figure 1. Scenes from the digital story prepared for 1st graders

Within the scope of outcome “M.2.2.3.2. Using the relation in a geometric pattern, creates new patterns of same relationship with different materials.” in the learning area of “Geometric Patterns” for 2nd graders, a digital story lasting 03 minutes, appropriate for students’ levels, was prepared. Plot of the digital story, prepared for 2nd graders, is based on a student's inability to decide on a gift for his/her brother in a classroom setting. In the digital story, the teacher tells the student that they will create a necklace with geometric patterns they will issue that day and mentions that s/he can give a gift like this to his/her brother if s/he wants as such a gift is more meaningful. The digital story contains different pattern rules. In order for them to make their own necklaces with these pattern rules, they were provided with materials for each pattern such as rope, geometric figure cards and glue. When pattern rules were being presented, the digital story was paused, and the students were asked to make their own necklaces. Afterwards, the digital story was continued, and all students were expected to check the patterns of the necklaces made by them.

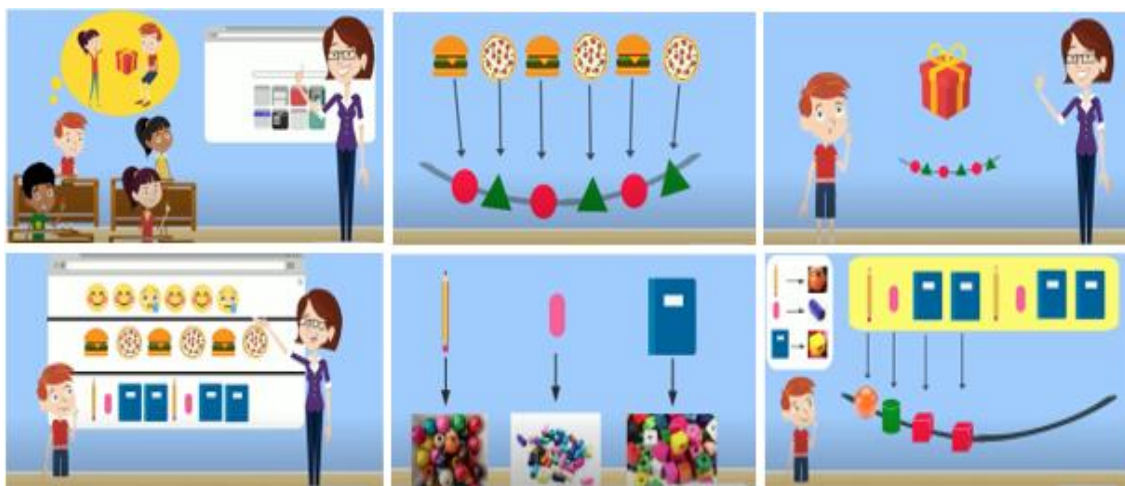


Figure 2. Scenes from the digital story prepared for 2nd graders

Within the scope of outcome “M.3.2.1.2. Explains the similarities and differences between cube, square prism and rectangular prism.” in the learning area of “Geometry” for 3rd graders, a digital story lasting 03 minutes and 03 seconds, appropriate for students’ levels, was prepared. Plot of the digital

story, prepared for 3rd graders, is based on two friends finding three treasure chests on the beach and trying to find the codes to open the chests. The codes consist of names of the geometric figures forming the chests. In the digital story, the chests in the shape of cube, square prism and rectangular prism are examined one by one; however, no specificity is mentioned about the chests. Meanwhile, the geometric figures were reviewed, and the video was paused when specific information was provided for each chest. Next, materials such as cube, square prism and rectangular prism models, colored papers and glue were handed out to the students. Afterwards, thanks to use of colorful papers, the students were ensured to view that the cube has 8 vertices, 6 faces, 12 edges and its all sides have the same length, that the square prism has 8 vertices, 6 faces and 12 edges and consists of 2 square faces and 4 rectangular faces, and lastly, that the rectangular prism has 8 vertices, 6 faces and 12 edges and its all sides consist of rectangles. In the final part, it was allowed that the students compared all the prisms in terms of similarities and differences. For instance, they examined that all prisms were similar in terms of having 8 vertices, 6 faces and 12 edges and all faces of the cube consisted of squares. Additionally, they examined that square prism consisted of 2 square faces and 4 rectangular faces and all faces of rectangular prism consisted of rectangles.

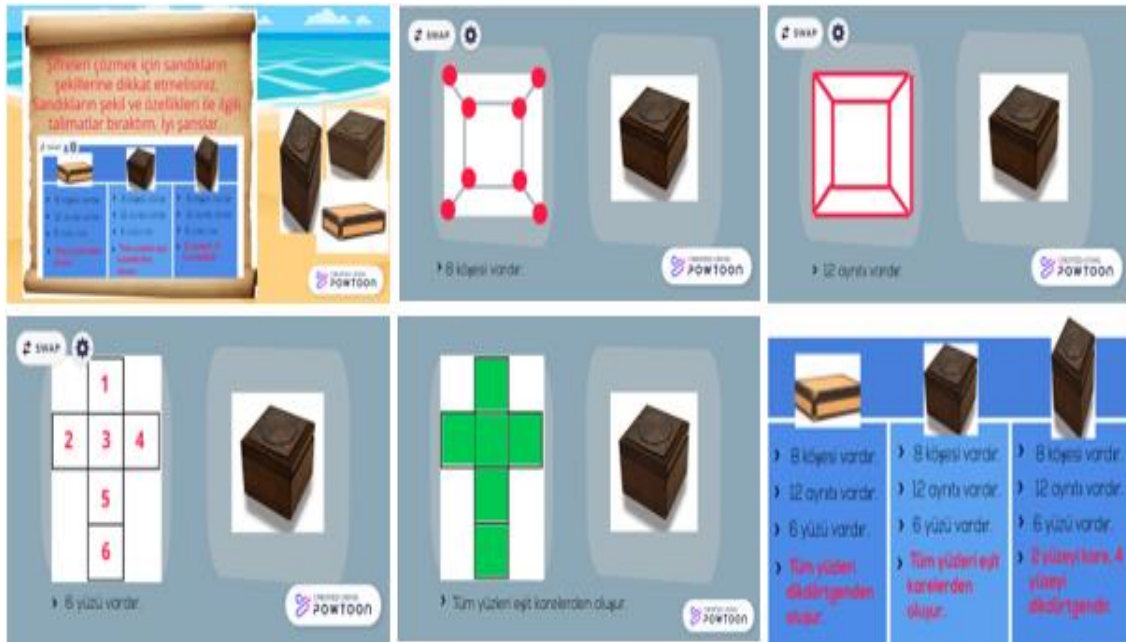


Figure 3. Scenes from the digital story prepared for 3rd graders

Within the scope of outcome “M.4.4.1.2. Creates a column graph.” in the learning area of “Data Processing” for 4th graders, a digital story lasting 02 minutes and 57 seconds, appropriate for students’ levels, was prepared. Plot of the digital story, prepared for 4th graders, is based on a little girl helping her mother prepare a care package for earthquake victims and categorizing the products to be included in the package. The parcels were divided into two categories, food and hygiene. Images of the objects were presented mixedly in order to find out exact number of the objects in the food category. Then, based on the images, the students were asked to create a tally table on the worksheets given by the teacher. Next, they were ensured to create a column graph of the food category. As for hygiene category, they were requested to form a frequency table based on the products specified on the figure chart, then create a column graph based on the frequency table and lastly another column graph based on the figure charts given for all products in all packages of both categories. Pausing the video, the students could

check their work. In this way, it was provided that the data was organized with object or figure chart, tally table and frequency table prior to creating a column graph.

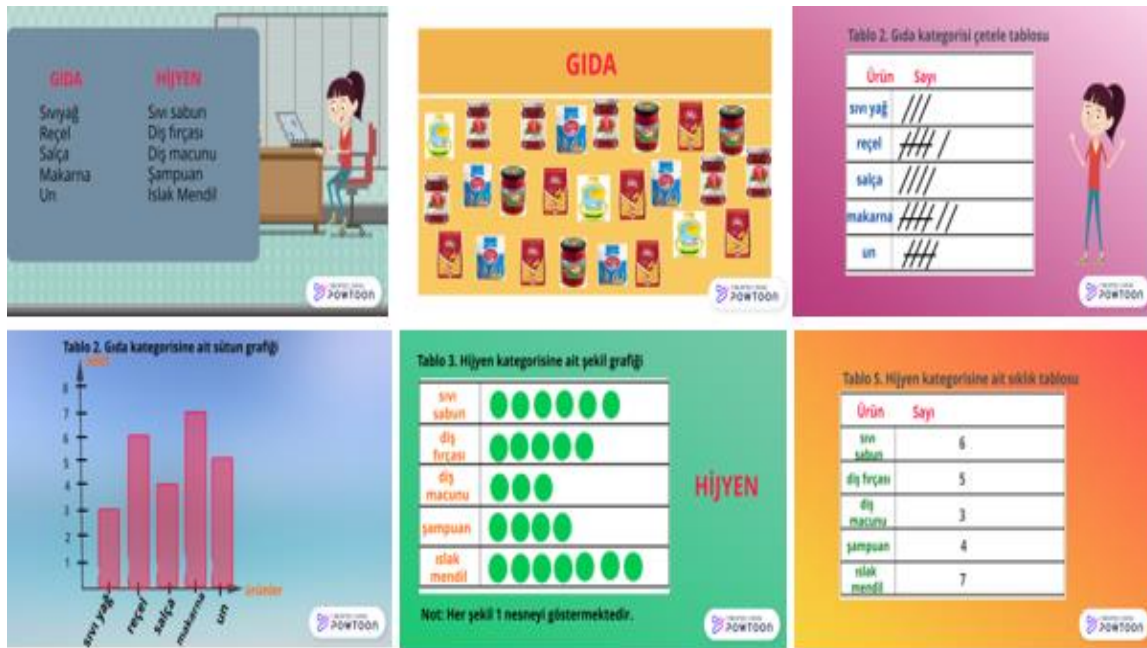


Figure 4. Scenes from the digital story prepared for 4th graders

Flowcharts were prepared for the process in order to understand the actions done in the classroom while using the digital stories for mathematics teaching. In this context, process of practicing the lesson plan of the 1st graders is exemplified by the flowchart below.

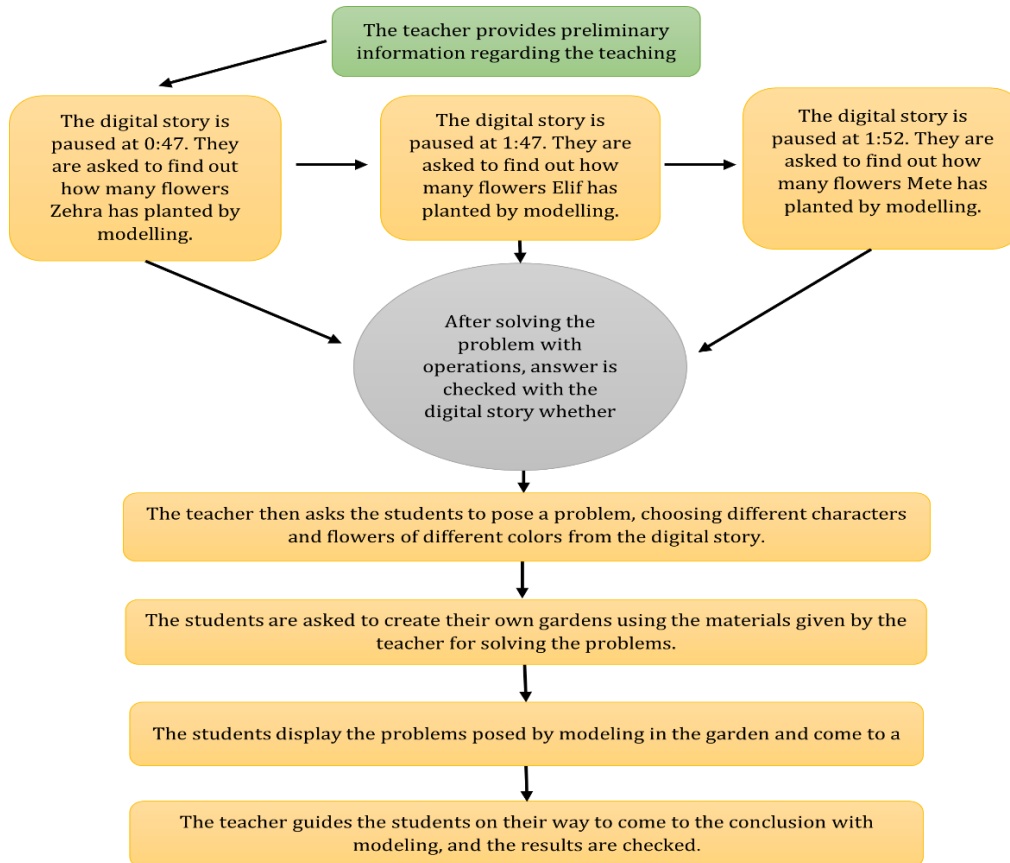


Figure 5. Flowchart of practicing a mathematics lesson with a digital story

Role of the Researcher in the Data Collection Process

By providing preliminary information with participants of the study prior to data collection process, the researcher explained how practice and interview process would be conducted. Digital stories, lesson plans and materials prepared within the scope of the study were submitted to primary school teachers during data collection process. While handing out the materials -planned to be used in activities of digital stories- to the primary school teachers, classroom sizes were considered. Upon receiving approval from the primary school teachers to participate in the classes, the researcher had the opportunity observe the teaching process. With the participation in the process, the researcher helped the primary school teachers hand out the materials, check activity results and fulfill classroom management, particularly for the primary school grades, in the crowded classrooms. Additionally, the researcher guided the students in distribution of tasks for group works, providing the need such as the scissors or glue with the groups and answering questions of the students about the activities.

Data Collection Tools

In the study, it was aimed to analyze the primary school teachers' views on the use of digital stories in mathematics teaching. In accordance with this purpose, interview questions were prepared reviewing the literature under the title of "Use of Digital Stories in Mathematics Teaching". The interview questions were revised twice prior to being sent to the specialists. Before asked to the participants, the interview questions were sent to 4 academicians specialized in the fields of Turkish language teaching, mathematics teaching in basic education, mathematics teaching in primary school and computer and instructional technologies in terms of whether the questions were well-oriented to the study or not. The specialists offered suggestions such as preferring the term "use of digital story" to the one "use of digital storytelling" or using the term "mathematics teaching process instead of "mathematics teaching". Considering the views of the specialists, the interview questions were changed for the third time.

Data Analysis Process

As the data analysis is based on the concepts of diversity, creativity and flexibility in qualitative research, the researcher is expected to develop the data analysis method to be used in the study by examining data analysis methods available and considering features of the research and collected data (Yıldırım & Şimşek, 2018). It is intended in phenomenological research that data is conceptualized and themes that can describe the phenomenon are identified in order to identify data analysis, experiences and meanings attributed to the experiences by conducting a content analysis. The obtained results are described, and findings are explained and interpreted within the identified themes and categories (Yıldırım & Şimşek, 2018).

The data analysis process in qualitative research was examined by Strauss and Corbin (1990) in two sections, "descriptive analysis" and "content analysis". The content analysis -which allows an in-depth analysis and identification of themes and subthemes that previously could not be identified- is more complicated than the descriptive analysis. It was decided to conduct the content analysis in this study as to examination of primary school teachers' views on the use of digital story during mathematics teaching process.

Strauss and Corbin (1990) mentioned about three types of coding, "Coding based on predetermined concepts", "Coding based on the concepts extracted from the data" and "Coding within a

general framework". Within the context of this study, "Coding based on the concepts extracted from the data" was used. As a result of an inductive analysis process, the obtained data was grouped within specific concepts by the researchers, and the codebook was obtained to be used during data analysis.

Ethical Permits of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Kırşehir Ahi Evran University Social Sciences and Humanities Scientific Research and Publication Ethics Committee.

Date of ethical review decision= 14.06.2023

Ethics assessment document issue number= 2023/05/10

Findings

After organizing the findings obtained within the scope of the study, it was explained in which stage or for which subject of mathematics lessons the digital stories can be used by the actively working primary school teachers as well as necessary requirements and recommendations were shared with them for digital storytelling to be used as an effective education method.

Educational Use of Digital Story in Mathematics Teaching

Table 2. *Primary school teachers' views on areas of educational use of digital story in mathematics teaching*

Main Theme	Category	Subcategory	Primary school Teachers
Stages of Lesson	Introduction	Attention Getting	Arda, Figen, Kerem, Alper,
		Activating Prior Knowledge	Didem, Oğuz, Efe, Elif, İlker
	Development Phase	For Activities in The Lesson	Mete, Ezgi, Arzu, Koray, Demir, Zehra
	In General	Can Be Used at Any Stage	Bilge, Emin, Furkan, Sude
Mathematics Subjects	Numbers and Operations	Natural Numbers	Arzu, Ezgi, Gamze, Cem, Cansu,
		Four Operations with Natural Numbers	Elif, Ozan, Oğuz, Alper, Zehra,
		Fractions	Didem
	Geometry	Geometric Figures and Shapes	Kerem, Hakan, Mete
	Measurement	Time Measurement	Bilge, İlker
	In General	Entire Subjects	Arda, Cansu, Figen, Koray, Emin, Eylül, Furkan, Sude

Themes and categories as to primary school teachers' views on the educational use of the digital stories are shown on Table 2. It was stated that the digital story can be used in different parts of the lessons as well as it was mentioned that it can be used in when teaching learning areas of the mathematics curriculum.

Stages of Lesson

Introduction: While preparing a lesson plan in mathematics teaching, it is aimed that the students are motivated, informed about the target and their prior knowledge is activated at the introduction stage. In line with this aim, teaching activities are organized. It was stated by the primary school teachers in the study that the digital stories can be used at the introduction stage in getting attention and activating prior knowledge.

It was emphasized by the primary school teachers that the use of the digital stories in the stage of attention getting will be more advantageous since it is believed by them that the digital stories help students focus on the lesson, ensure permanent learning, and facilitate the learning of abstract concepts. Teacher Arda's views on the use of digital stories in the stage of attention getting in mathematics teaching are as follows:

I think it will be more beneficial to use them at the introduction stage. Because it is very difficult to have the students concentrate at the introduction of a lesson. Following first breaktime, a child already spends the first 4-5 minutes of a 40-minute lesson to focus. So, you have only one chance to get his/her attention. If you get it even with a visual element, the child will focus on the subject a while. That's why I think that using the digital stories at the introduction stage is more advantageous. - Arda

Teacher Figen, on the other hand, highlights that the use of the digital stories at the introduction stage of a lesson will allow permanent learning in mathematics teaching:

I believe that digital stories are important to get the attention of the children. It can be used at the introduction stage to get their attention, which can also allow permanent learning. It really gives permanent effect on the children. They should be used at the introduction stage in my opinion. - Figen

Teacher Kerem notes that the digital stories should be used in the stage of attention getting as the digital stories will attract attention of the students:

When the mathematics is combined with this story and you start the lesson with a story to get students' attention, they will listen to the lesson more carefully. It can particularly be better to use it at the introduction stage to draw their attention. - Kerem

Teacher Alper expresses that it will be very beneficial to use digital stories as a preliminary study in order for students to focus on the lesson in mathematics teaching:

It can be initially used in a more comfortable manner in the stage of oral presentation. Because the use of stories seems to be very useful in providing preunderstanding or prestudy on the subject. We both attract the students' attention effectively and have them focused on the lesson. In addition, the lessons become more entertaining. But it becomes very advantageous only for the introduction stage of the lesson. - Alper

Teacher Didem addresses that digital stories can grab the students' attention to the lesson because the subjects are seen as a whole:

Digital stories can be used at the introduction stage. They help us get the students' attention and have them focused on the lesson. They can also be used for explanations in terms of

presenting the subjects as a whole. I believe that they can be used in this way as a means of expression. - Didem

Teacher Oğuz, on the other hand, points out effects of the use of the digital stories at preparation stage on the students in mathematics teaching:

The digital stories can be more effective at the introduction stage as they can motivate the children. So, preparation stage is better for the stories in my opinion. In this way, the students can be ensured to be more interested in the lesson at the beginning of the class. - Oğuz

Primary school teachers state that digital story activities can be used in mathematics teaching to uncover students' pre-learning. For instance, Teacher Efe mentions that digital stories can be used as a tool to examine the student's prior knowledge by saying that *"The stories can be used at the introduction stage to check the student's prior knowledge."* Teacher Elif, on the other hand, similarly emphasizes that the digital stories can be used to activate prior knowledge by saying that *"I think they are effective for activating prior knowledge. In this way, we can have the students concentrated on the lesson."*

Teacher İlker exemplifies how digital story activities can be used to activate prior knowledge in mathematics teaching as follows:

The stories can be used at the introduction stage to see the students' prior knowledge. Pausing the story at certain times, questions that take place in the digital stories can be asked to them and, in this way, their prior knowledge can be discovered. - İlker

Development: It is required that activities should be prepared with appropriate methods and techniques in line with targets, students, physical conditions of school and classroom for the development stage when planning a lesson plan for teaching process. It was stated by the primary school teachers in the study that, with the digital stories, the students can have a chance to learn by doing and experience the educational activities on their own as well as it was highlighted that the digital stories should be used in the development stage of a lesson during the mathematics teaching.

It was also stated by the primary school teachers that the digital stories should be used in lecturing stage in the mathematics teaching by emphasizing the benefits of the digital stories such as activating of more than one sense organ, motivating the students and concretizing abstract concepts. Teacher Mete points out that the digital stories should be used in the preparation stage of the lesson in mathematics teaching due to opportunity of concretizing abstract concepts:

The stories can be used at the beginning of the subject. And the digital stories can be resorted to at the very beginning of the subject in terms of concretizing abstract concepts and providing preliminary preparation. Afterwards, the teacher can have the students understood by any means in line with his/her own skills. - Mete

Teacher Ezgi states that digital stories should be used when covering a new subject as they facilitate to concretize abstract concepts in mathematics teaching:

I think that if we are just starting the lesson, the digital story should be used so that the students can concretize abstract concepts more easily. It is more of an introductory stage activity. - Ezgi

Teacher Arzu explains that digital stories should be used to make the subject clear for the students because of addressing more than one sensory organ of the students:

In my opinion, it is important to use digital stories at preparation stage. Because the students can see, experience and feel the stories, in this way, they can comprehend the subject both visually and aurally at the preparation stage. - Arzu

The primary school teachers mentioned that the learning environment should be supported with methods and techniques and, in this process, active role taking of the students will have positive impacts on them. Teacher Koray expresses that the digital story should be presented at the preparation stage in comparison to the introduction stage:

At the introduction stage, the students are already provided with sufficient preliminary information. And the students get readiness. As they will learn this information by doing afterwards, the stories can be more useful at the development stage in my opinion. Because the students do not know what and how to learn a subject at the introduction stage. - Koray

Teacher Demir points out that the digital stories should be used as classroom activities:

For example, I lecture on a subject first. And the more materials or learning strategies we use during learning process, the more students we reach. Also, learning level increases more if this process is visually supported. The students should also be included in the learning process. In this regard, a teacher should prepare a plan in his/her mind and lecture on the topic in line with that plan. Then, using the digital materials, the teachers have the students studied individually, solved a problem or answered a question on their own, which also should be followed by the teacher. Thus, it is more advantageous to use the stories at the development stage. - Demir

Teacher Zehra stresses that the use of different methods, techniques and digital stories will be beneficial in mathematics teaching as well as the digital stories can be used at the stage of attention getting:

In mathematics teaching, the students may need a change since some subjects sometimes come one after another very rapidly. But you can have them focused on something different using the digital stories even if you follow the same technique or method. The digital stories can be beneficial for such subjects. - Zehra

In General: Most of the primary school teachers stated that the digital stories can be created to get the students' attention, activate prior knowledge, make the students be active in the process or reinforce what they learn in mathematics teaching process by taking instructional objectives into account, thus the digital stories can be used throughout of a lesson. In this context, Teacher Bilge addresses that the digital stories can be used in every stage of the mathematics teaching process:

The digital stories can be used for students' readiness, and repetition or oral presentation of a subject. At the same time, stories that can be used in every stage of a lesson can be prepared, like the ones you have provided with us. Or stories that will be used only in one stage can be created. As a result, the teachers can use them in every stage. - Bilge

Teacher Emin reports that the digital stories can be used in three stages of a lesson for some specific purposes:

First of all, the stories can be used to get attention at the introduction stage. Using the visual images in the video, the students' attention can be got. They can also be preferred for the introduction stage to motivate the students. Covering a lesson on a different platform with different practice and method, teachers can have the students be well-motivated. The digital stories can also be benefited in making learning targets clear to students and activating prior knowledge. For instance, a video displaying the addition with models will make it clear to the students that the lesson will cover addition. Once again, they can be used as a tool to support the lecturing at the development stage. Teachers can also use them at the end of a lesson as a means of assessment. In other words, the digital stories can be benefited in every three stages of a lesson. - Emin

Teacher Furkan, in a similar way, states that the digital stories can be used in every stage of a lesson in mathematics teaching process:

In fact, the teachers can use the stories in every stage. Sometimes, we can make the students watch a digital story at the beginning of a lesson. In my experience, lecturing on a subject in an interactive manner after having them watched a digital story, they were quite focused and motivated. Thus, they can be used to get the students' attention at the introduction stage. The digital stories can also be preferred to get feedback from the students or make them learn a topic better at the development stage and examine the learning losses at evaluation stage. They can be used in every three stages. I think that the use of the digital stories is beneficial for each one of the stages, introduction, development and evaluation. - Furkan

Teacher Sude, on the other hand, remarks that the digital stories should be used in every stage of a lesson depending on the subject to be lectured on:

Firstly, the stories can be used at the introduction stage. Secondly, they can be used as reinforcers in the end. Some crucial and important points are told in the middle of a lesson, which should be forgotten at no time. For the students to comprehend these points, we can use the methods they like and the digital stories. In fact, they like it very much. Every stage of the teaching process is appropriate for the stories in my opinion. It also depends on the subject to be covered in the lesson. So, the subjects being covered are important in this regard. - Sude

Mathematics Subjects

Numbers and Operations: The primary school teachers mentioned that the use of digital stories can be effective in teaching the learning outcomes within learning area of numbers and operations in mathematics teaching. For example, the primary school teachers discussed that the subject of rhythmic counting is considered as abstract by the students and, therefore, the subject can be concretized with the use of the digital stories in primary school mathematics teaching. Teacher Arzu points out that the use of the digital stories for the subject of rhythmic counting in mathematics teaching can have positive impacts on the students:

Rhythmic Counting. Why rhythmic counting? For instance, when you try to teach how to count objects by 2s, the students do not understand how to do rhythmic counting by 2s. It becomes abstract for them. However, when we tell them this subject using the digital stories,

we can turn these abstract concepts into experiences. Because it is important for students to turn the learning outcomes to experiences. - Arzu

Based on their own experiences, the primary school teachers similarly think that use of the digital stories will be beneficial for subjects such as positional notations and rounding. Teacher Ezgi indicates that the digital stories can be benefited most in the subject of rounding decimals:

Patterns, rounding decimals, place value... We generally cover place value concepts and place values in lessons of 2nd graders. However, I benefited from the digital stories most in rounding decimals. - Ezgi

Teacher Gamze expresses her views on the ways in which the digital stories would affect the developmental level of the students if the subjects of place values and rounding were taught using the digital stories in her classroom:

We cover the subjects of positional notation and rounding, such as decimal place and hundreds place. Such subject can be discussed using a very nice and beneficial digital story. I also think that this 3-5-minute video will be very effective in explanation of the subject. In the lessons, we already try to explain a subject making a story of it with visual materials and pictures. However, digital stories can be more functional in this regard. As games are more appropriate particularly to developmental period of the 1st and 2nd graders and the digital stories gamify the subjects, the students can participate in the lessons more actively in my opinion. Besides, it becomes easier for the students to think from specific to the general since they pay special attention to the lesson. - Gamze

The primary school teachers mentioned that the digital stories should be prepared about the subject of four operations since they thought that it would help students to concretize the operations. Teacher Cem explains that covering the subject of four operations using a digital story will positively effect the students:

Because of being visually more descriptive, they can be preferred for the four operations. Sometimes the students are unable to visualize some concepts in their minds. For example, when they are asked that "What is the sum of 2 apples plus 2 apples?", they may not picture visualized in their minds; however, they can comprehend concrete objects more easily as they see it. - Cem

The primary school teachers stated that the use of digital stories in problem solving in primary school mathematics teaching would ensure students to comprehend better and provide real examples from the daily life. Additionally, they noted that the students may have problems in problem solving because they generally do not like reading, but the digital stories can sort these problems out. Teacher Cansu mentions that the use of digital story in teaching the subject of problem solving will have positive effects on the students and the process:

Problems can be told through digital stories. With problems, we put into sentences the things that have occurred in our lives or have experienced by us. Thus, the problems, parts of our daily lives, can be narrated by being visualized. The digital stories are much more useful in solving these problems. Because problems have many stages. The students can comprehend

these stages better. That is, they can understand and solve problems better because they have experienced some things. In this sense, many processes take place at the same time. - Cansu

Teacher Elif states that explaining the subject of problem solving with the digital stories will have a positive effect on students' reading habits:

You can use the digital stories for the subjects of addition or subtraction. Or four operations as well as division and multiplication. The four operations can be told more easily with the digital stories. You can even use them for the subject of problem solving. Why problem solving? Because not all students can understand what they read. Sometimes they understand what they read but cannot get to the point. Listening may be more effective for them in this regard. Reading and listening at the same time can be more productive, too.

- Elif

Teacher Ozan makes a similar explanation and emphasizes the effect of the student's attitude towards reading on problem solving and mentions that digital stories will offer benefits in this regard:

Which subjects? The digital stories definitely need to be used for problems. Since a student does not like to read and has difficulty in understanding what s/he reads, problems can be narrated and explained more easily. Sometimes a student tries to do operations with the given numbers but does not understand the question. The child adds, subtracts, multiplies with the given numbers. But s/he does not understand what the problem is asking of him/her. In this case, the student does the operations directly by rote. For example, they can understand the problem more easily by animating or storytelling the problem with the help of the digital stories. - Ozan

Teacher Oğuz emphasizes that explaining the subject of problem solving in mathematics teaching with the digital stories leave a mark on students' lives:

For example, in mathematics, narrative problems about calculations and four operations provide examples from the students' daily lives and can help children to better understand the subject. I think that they will understand better if the problems are given from the students' own lives and experiences. - Oğuz

Teacher Alper points out that the use of digital stories in problem solving has an undeniable impact on the students' learning processes:

For instance, there is a digital story that I used before, and it was very effective for the subject of addition. At the same time, the digital stories can be very useful for primary school children's perception of problems. Because the digital story is a cutting-edge method in turning abstract concepts into concrete ones. It is very productive. Thus, it seems to be useful for the subject of problems. And I think it will. - Alper

Primary school teachers stated that fractions can be taught using digital stories because they are considered as abstract by the students. Teacher Zehra notes that when the subject of fractions is taught using a digital story, it has an impact on students:

The digital stories with more visuals that help support abstract concepts can be more useful. For example, when fractions are taught using the digital stories, the students can be more

comfortable understanding the subjects related to fractions. In other words, I think that these stories would be more effective in subjects that mainly involve abstract concepts. - Zehra

Teacher Didem explains that the use of digital stories for the subject of fractions is effective for both the teachers and the students.

The digital stories can make teaching the subject of fractions very easy. Because this is an abstract subject for students and the digital stories can easily concretize them. From the teachers' point of view, there will be no difficulty in producing content when preparing a digital story. For example, the following plot can be easily used in a digital story about the subject of fractions. There is a cake that will be divided equally between four people. Similar stories from the students' daily lives can be used to explain division in an easy way. - Didem

Geometry: The primary school teachers reported that the subjects within the sub-learning area of geometric figures and shapes can be effectively taught by using the digital stories. It was also stated by the primary school teachers that the digital stories can be effective for geometric figures and shapes in mathematics teaching since the stories can facilitate permanent learning, visualization of figures and shapes and make the figure features easier to learn. Teacher Kerem mentions that when the subject of geometric figures and shapes is taught using the digital stories, it has significant effects on the students:

Geometric subjects, triangles, squares and rectangles are more abstract shapes for students. Therefore, it can be more useful to explain these shapes with meaningful animations and narrations. This makes it more memorable. It also attracts the attention of children. - Kerem

Teacher Hakan highlights that explaining figures and shapes with narrations through stories provides permanent learning:

Very good digital stories can be prepared for geometric figures. It might make sense to animate and characterize geometric shapes in the digital stories. I think that it will also be very effective for the verbal parts of the mathematics told through storytelling. That story will be more permanent in the students' minds. Learning process will also be easier. - Hakan

Teacher Mete asserts that the use of digital stories in mathematics subjects is important in terms of geometrical figure and object features:

They can be used to describe geometric figures. Since geometric figures may be diagonal and the students have to add the lengths of the vertices of geometric figures, it is a little more difficult for the students to comprehend this subject. Thus, we can use digital stories for that. - Mete

Measurement: It was stated by the primary school teachers that the digital stories can be used for the sub-learning area of time measurement in the mathematics teaching. The primary school teachers emphasize that it is important to benefit from the digital stories for the sub-learning area of time measurement in mathematics teaching, especially for calendars and times. Teacher Bilge reports that the students have difficulty in learning calendars within the sub-learning area of time measurement and the digital stories can be effective in this regard:

The calendar is the most confusing subject for the students. As teachers, we have a lot of difficulty with the concepts of year, month, week, day and the problems in which these concepts are used, especially in the lessons of 1st and 2nd grade students. Concepts such as

yesterday, tomorrow, days, weeks, months, seasons and years are very difficult for the students to learn. The digital stories can easily be used in this sense. It can also be more advantageous for the students. - Bilge

Teacher İlker points out that the subjects of measurement, weighing and patterns in the mathematics can be taught using the digital stories, and these digital stories should be used particularly for the subject of times:

I think that the digital stories are appropriate for teaching the time. Likewise, the story you prepared about patterns was very useful. It may not be used to teach the four operations, however; I believe that the stories can be used to exemplify or repeat such subjects. But I think it can be directly used in teaching of patterns, times, measurement and weighing. - İlker

Entire Subjects: The primary school teachers were responded to the question "Which mathematics subjects can be taught more easily using the digital stories? Please explain with the reasons." and they mostly responded by highlighting that all subjects in primary school mathematics teaching can be taught more easily with the digital stories. Teacher Arda states that all subjects can be taught in mathematics teaching using the digital stories:

The stories can be used for the subjects of fractions, possibly times and geometric figures. All in all, these are the tools that can be used as materials. They can be preferred for these subjects to make them more memorable. Again, it can be used for the four operations. Actually, when we think about it, we can support these stories with visuals. Obviously, the digital stories can be used for many things. Every subject can be covered with them. We can even make problems more understandable for the students using the digital stories. - Arda

Teacher Cansu mentions that the mathematics is intertwined with life, thus the digital stories can be used in all subjects:

Since we use four operations in the problems, it can be effective in four operations. It can also be used for the subjects of fractions and times. In fact, it can give good results in almost all subjects. The mathematics is about our lives. Therefore, the digital stories can be used in all subjects and every student can benefit from them. - Cansu

Teacher Figen points out that all subjects in mathematics teaching can be taught with the digital stories and it is important to include drama method in the process:

In fact, I think that all primary school mathematics subjects can be turned into stories. We also practice various projects. In one of them, for example, we convert fractions or length measurements into digital texts and then use them with drama method. This really provides permanent learning for students. Thus, I think that visual and digital texts can be used in all subjects of mathematics. - Figen

Teacher Koray explains that all subjects that can be converted from abstract to concrete can be taught using the digital stories:

I think that it is appropriate to explain every subject that can be concretized with a digital story. I can't think of a mathematics subject for which we can't use these stories. All subjects in primary school can already be concretized for the students. Whether it is geometry,

arithmetic, tables & graphs or problem solving, all of these are subjects that you should support the students with visual materials. Thus, these stories can be used for anything.

- Koray

Teacher Emin notes that the digital stories concretize the subjects and ensure permanent learning, so they can be used in all subjects:

The digital stories can be used particularly to concretize abstract subjects and help students understand better. Thus, they can be used as a supportive tool for such subjects, definitely increasing permanent learning. Similarly, the subjects of multiplication and division become possible to explain with simpler models, making it easier for the students to understand. We can also explain geometric figures and patterns with these stories. I think they can be used in every subject of the mathematics. Because it already concretizes the subjects and provides permanent learning. Therefore, it is possible to use them in every subject of the lesson. - **Emin**

Teacher Eylül states that the digital stories can be used in all subjects in mathematics teaching, and it is important to prepare digital stories by gamifying them:

I think that the digital stories can be very resultful in the subjects of symmetry and patterns. The digital stories prepared particularly for the subject of patterns in a gamified way attract a lot of attention. It can be very productive in the lower age groups. The students can be very interested in the patterns presented in a colorful way. But in general, the stories can be used in all areas of mathematics. They can also be used by teachers for geometric figures, length measurements, and perhaps problems. I think that they can be used for every subject. - **Eylül**

Teacher Furkan explains that the more the mathematics is integrated with stories from everyday life, the better it is understood by the students, and emphasizes that all subjects can be taught with the digital stories:

Almost any subject can be explained through the digital stories. The digital stories can be prepared particularly in line with the subjects of geometric figures or fractions. Because it is really a subject that students have a lot of difficulty with due to being abstract. For example, explaining what prism, edge, fractions, whole, half and quarter are by showing and concretizing them will provide the students with more permanent learning. Obviously, the more the mathematics is narrated, the better it is understood by the students. When we express the subjects in a way that is related to their daily lives, the students can understand better and more. - **Furkan**

Teacher Sude remarks that all mathematics-related subjects can be taught using the digital stories:

All subjects of the mathematics can be explained with these stories. I mean that these stories can color the monotonous narration. Any subject can be taught with the stories, such as natural numbers, rhythmic counting, multiplication, addition, tables. When you use the digital stories, you have the students participated more in the lesson. All subjects can be covered much better if the digital stories are supported by interactions with the students. I think there is no subject that cannot be taught with these stories. - **Sude**

Primary School Teachers' Needs for the Use of Digital Stories in Mathematics Teaching

Table 3. Primary school teachers' needs for the use of digital stories in mathematics teaching

Theme	Category	Primary School Teachers
Student-Based Needs	Readiness and Student Interaction	Bilge, Hakan, Efe
	Consideration of Individual Differences	Elif, Oğuz, Alper, Demir
Digital Story-Based Needs	Technological Equipment	Arzu, Ezgi, Figen, Ozan, Koray, İlker, Oğuz
	Material Support	Zehra, Efe, Mete, Didem
	Teachers' Readiness	Sude, İlker, Eylül, Emin, Mete

It is seen in the Table 3 that the primary school teachers' needs for the use of digital stories in the mathematics teaching process are grouped under the titles of student-based needs and digital story-based needs.

Student-Based Needs

The needs of students for the use of digital stories in the mathematics teaching process were listed by the primary school teachers, which are readiness, student interaction and consideration of individual differences. The primary school teachers emphasized that the students' family life and prior knowledge are of great importance for the situations that may be needed when using the digital stories in the mathematics teaching. Teacher Bilge notes that the needs for the use of digital stories in mathematics teaching should be addressed from the perspective of both the students and the learning environment:

First, the students' readiness is more important than the materials. The difference between a student's behavior at home and at school is very important, as well. For example, although there are smart boards at our school, the students' family profile is very low in general. Other than that, smart boards are not available in each classroom. Readiness is more important than materials and equipment in my opinion. This is what we need the most. - Bilge

Teacher Hakan believes that the needs for the use of digital stories in mathematics teaching should be considered from both teachers and students' perspectives:

Prior knowledge and readiness of both teachers and students need to be suitable, so that the stories can be more useful. The students found it difficult at first when I used the stories, and I also had difficulty when I was lecturing on a subject with the stories. For this reason, I believe that the readiness is important. - Hakan

The primary school teachers emphasized that, the students should be involved in the process one-on-one and student interaction can be ensured by having the infrastructure level that the students themselves can use regarding the needs for the use of digital stories in the mathematics teaching. Teacher Efe states that the students should have access to the required equipment for them to use the digital stories themselves in mathematics teaching:

The students need to have an infrastructure, which can be educational tools and a skill. It is better if they can use these stories themselves. We show them on the smart board in the classroom. However, it would be better if the students could, for example, turn on the computer and fulfill these things themselves. - Efe

The primary school teachers highlighted that individual differences of students should be considered in order to carry out the mathematics teaching process more effectively with the digital stories: Teacher Elif states that individual differences of the students should be minimized in order to use the digital stories more effectively:

For more effective use, the environment must be suitable firstly. The classroom also needs to be appropriate. The difference between the students' individual differences should also not be too obvious, as well. I mean there are some students, it is really a problem to make them sit for 2-3 minutes. But there are also other students who can sit and listen to a story for 15 minutes. - Elif

Teacher Oğuz explains that the digital stories should be prepared in accordance with the students' learning level in the mathematics teaching:

Even in a digital environment, mathematical stories should be problem-oriented and aim at the students' perception level. The stories should be better comprehended by the students. - Oğuz

Teacher Alper mentions that, by looking at his school, the digital stories should be created based on individual differences of the students:

The stories should definitely be appropriate to the students' level. The students in our primary school are very different from other students in terms of understanding. They perceive things much differently. Thus, we will have to come down to their level. - Alper

Correspondently, Teacher Demir states that personal digital stories should be prepared:

I believe that it would be more logical and efficient to create stories by considering the students' environment and being inspired by their environment in the mathematics teaching. The name of their neighborhood, their school or their friends should be included in the stories, and the students should be involved in the process one-on-one. - Demir

Digital Story-Based Needs

It is stated by the primary school teachers that the three main factors required for the mathematics teaching process to be carried out more effectively using the digital stories are the necessary technological equipment, material support and teachers' readiness. For instance, it is pointed out by the primary school teachers that a better technological infrastructure may be needed for the mathematics teaching process to be carried out more effectively using the digital stories. Teacher Arzu states that technological equipment is needed for teaching mathematics and using digital stories effectively:

Readiness of the necessary material is a must such as smart board, computer and audio system. The students' access to a digital story is also important. Is it presented in an understandable way? Have adjustments been made where necessary, where it should be paused? It should be open to the effective use of the students and teachers. - Arzu

Teacher Ezgi asserts that, in addition to the providing digital equipment, technical preparations should be made according to the technical infrastructure of the school where the implementation will take place:

First of all, there must be electronic equipment such as internet infrastructure, projectors and computers. But if there is no internet access available at the school, you probably need to prepare at home. You need to download and transfer the video to your computer and prepare in advance. - Ezgi

Teacher Figen states that, in addition to providing technological infrastructure, providing tablets with the students can ensure effective learning in the use of digital stories in mathematics teaching:

Smart board is a must for sure. There must be a projector and computer if there is no smart board available. Also, when using the digital story, if the students had a tablet, it would make it easier to learn such things. - Figen

Teacher Ozan emphasizes that the technological infrastructure should be of quite good quality for more effective mathematics teaching:

Certainly, the infrastructure at the school needs to be of good quality. There needs to be an environment with internet, projector or computer. Technological means should be foolproof, which our school already has. We will not have problems in this aspect, but if there is no such infrastructure at other schools, it will be a big problem. If we want to use a digital story, there should definitely be a smart board or a projector. - Ozan

Teacher Koray indicates that the audio system and digital infrastructure should be prepared prior to the lesson in order to use the digital stories more effectively in mathematics teaching:

Students' attention, sufficient materials and time are needed. Apart from these, of course, technical infrastructure is important. Projectors and computers are a must as well as an audio system. First, the necessary materials must be available. After adequate preparation, all that remains is to use the stories for the students. Thus, I do not think that we need too much. - Koray

Teacher İlker remarks that, in addition to technological infrastructure, measures should be taken to prevent problems that may arise during the teaching process in order to use digital stories more effectively in mathematics teaching:

Technological infrastructure is important. Besides, even if there is a technological infrastructure, smart board, or internet, the situations such as outage of internet or electricity, or the voice not being as loud as it should be can make this process difficult. The technological infrastructure particularly needs to be runproof. - İlker

Teacher Oğuz similarly states that the technological infrastructure should be of good quality in order to use the digital stories more effectively in the mathematics teaching:

First of all, the technological infrastructure must be very good. Once the technological infrastructure is ensured to be good, the students should have technological devices such as tablets. - Oğuz

The primary school teachers stated that material support should be provided along with activities that will increase in-class interaction in order to use the digital story more effectively in the mathematics teaching process. Teacher Zehra explained the positive aspects of providing materials that students can touch and feel together with the digital stories by stating, "It is more effective for students

when they use cardboards and scissors in mathematics lessons and when these materials are included in the lesson." Teacher Efe indicated mentioned that the digital stories should be supported with materials in the teaching process and that the materials should be prepared in accordance with the level of the students by stating, "There should be plenty of materials. The works need to be prepared in advance in a way that is suitable for the level of the children." Teacher Mete mentions that supporting digital stories with materials will have an impact on the teaching process:

Together with the digital story, we can bring materials appropriate to the content of the digital story and reinforce the subject. In this way, we can also make them touch the materials directly. This allows the information to be permanent and makes it easier for the students to learn. - Mete

Teacher Didem states that it is important to increase the number of activities in supporting the digital stories with materials in the teaching process:

Activities are required to be done again and again in the lesson. When planning the digital story and the lesson process, it would be better if the number of activities that the student will interact with is increased. Also, if it is supported with different methods and techniques in addition to the digital story, it will be better in terms of teaching the subject. - Didem

It was stated by the primary school teachers that the teacher who will carry out this practice should have a good command of the content and activities of the digital story, technological field knowledge and digital equipment in order to use the digital story more effectively in the mathematics teaching process. Teacher Sude emphasized the importance of teachers' readiness for digital stories to be more effective in teaching by stating, "The classrooms need to be very well-equipped as well as the teachers." Similarly, Teacher İlker indicates that teachers' readiness is important in the use of the digital stories in the mathematics teaching:

I think that it will be useful for the teacher to make a regular plan and preparation for both the content of the digital story and the activities to be done afterwards in order to make it more effective and efficient. - İlker

Teacher Eylül notes that the teacher's technological field competence is important in using the digital stories more effectively in the mathematics teaching:

Teachers really need to have a good command of web 2.0 tools. Teachers can prepare an animation suitable for the class level. Now there are many online opportunities with web 2.0 and web 1.0 tools. I think the students will be very happy and pay attention to the lesson if the teachers make such a lesson plan. - Eylül

Teacher Emin stresses that the teachers need to know the purposes and benefits of the digital story as well as where it is used before the lesson:

First of all, the teacher should definitely be prepared for the lesson and have a good command of the subject. The teachers should know what the digital story is, for what purpose it is used, in which part of the lesson it is used, what kind of benefit it provides, and whether the story is related to the subject or not. In addition, the stories should be designed in accordance with the purpose. - Emin

Teacher Mete implies that the teachers need to have a good command of the digital story process as well as the subject before starting to teach mathematics with the digital stories:

Firstly, the teachers should already have a great command of the subject as well as the digital story. The instructions that the digital story offers to teachers should be appropriately used by carefully following high control skills. This needs to be balanced so well so that efficiency and time savings become very good. Besides, the teacher should already be prepared before the lesson. - Mete

Recommendations for the Use of Digital Stories in Mathematics Teaching Process

Table 4. Primary school teachers' recommendations for the use of digital stories in mathematics teaching process

Theme	Category	Primary School Teachers
Recommendations For Preparation Process of Digital Stories	Catchy Content	Elif, Cansu, Cem,
	Consideration of Needs and Requests	Oğuz, Alper, Demir
	Reproduction of Digital Stories	Bilge, Ozan, Furkan
Recommendations for Implementation of Digital Stories	Concretization with Materials	Arda, Kerem, Hakan, Demir, Furkan
	In-Class Active Participation	İlker, Sude, Didem, Efe, Sude

The recommendations given by the primary school teachers for the preparation and use of digital stories in the mathematics teaching process were presented on Table 4.

Recommendations for Preparation Process of Digital Stories

The primary school teachers' recommendations for the preparation process of digital stories during the mathematics teaching were grouped under the categories of catchy content, consideration of needs and requests and reproduction of digital stories. It was recommended by the primary school teachers that content of the digital stories to be used in the mathematics teaching process should be appropriate to the level of the students and consist of factors that will attract their interest. Teacher Elif noted based on her class that she has some recommendation on content of digital stories to be used in the mathematics teaching:

The content of digital stories can be more attention getting if they consist of plots that attract children's attention more. What I mean is more dynamic stories. Since I teach 1st graders, motional stories that can energize the students may be interesting for them. - Elif

Teacher Cansu states that the digital stories to be used during the teaching process should consist of cartoon characters to attract students' attention:

Everything can be taught much better in line with the needs and requests of the students if the stories can be reproduced for each subject. We can attract their attention more if we are able to use more characters from current cartoons that children watch. - Cansu

It was recommended by the primary school teachers that the digital stories to be used in mathematics teaching should include characters of real people. Teacher Cem recommends that real videos and characters should be shown in the digital stories prepared for the mathematics teaching:

In one of the digital stories, there were mostly pictures. I think videos can also be added. Not in the form of simulations, but real videos. I think the digital stories would be better if real videos displaying children are added to the plot. - Cem

Teacher Oğuz states that the digital stories used in the mathematics teaching process should be prepared by taking into account the needs and requests of the students' developmental periods:

The materials, stories and tools presented in the form of digital story should be increased and addressed to the students in a concretized way. In this way, the students can understand the subjects better. In addition, the content needs to be enriched and designed in accordance with the students' level. Thus, the storytelling method can be more effective in the mathematics.

- Oğuz

It was suggested by the primary school teachers that individual differences of the students should be taken into account when organizing the content of digital stories prepared for the mathematics teaching. Teacher Alper expresses that individual differences should be considered when preparing the digital stories:

The digital story can also be translated into other languages for other children. Or it can be narrated in a way that children using different languages can understand for us to be able to explain and convey the digital story better. For instance, a digital story can be prepared in a simple level so that a child with autism can understand it better. When we act in accordance with their level, we can involve the students in the lesson. This will make the stories much more useful. In fact, one of our biggest problems is individual differences. While fifteen students in the class understand the lesson, other fifteen others do not. Therefore, not all students get the maximum out of the lesson. Only when the individual differences are taken into consideration, these digital stories will become more useful. - Alper

Teacher Demir asserts that it is necessary to be careful when preparing digital stories since the place where students live, -city center or village- and the situations they encounter in their surroundings differ:

The digital stories should be prepared by taking into account the socioeconomic and cultural background of the student. For example, interest in the mathematics of a student living in the city center of Ankara differs from another student living in a more rural area. The students live together with animals in the rural area. S/he sends the sheep out to grass and takes care of the cows. Thus, examples in the digital stories should be built on these experiences. Also, it is illogical to ask time of school bus service to a student studying at a rural school. Because the students in a rural area do not take the school bus, rather s/he goes to school by walking. The life of a student in the rural area is different from the daily events experienced by a student in the city center. In this context, the digital stories will be more productive if these differences are taken into account. - Demir

After the implementation within the scope of research, it was recommended by most of the primary school teachers that digital stories should also be prepared for other grade levels and other subjects in the mathematics teaching and that the digital story method should become more common. Teacher Bilge suggests that examples of digital stories should be increased for the use in the mathematics teaching:

We request more digital stories to be used in the mathematics as well as examples. We find it difficult to prepare activities in the digital media. That's why we want these digital stories to increase and more of these. In other words, we want these stories to be provided with us

as a resource. Honestly, it would make us very happy. We will be very happy if the stories become more common. - Bilge

Teacher Furkan mentions in a similar way that it is important to increase the number of digital stories for use in the mathematics teaching:

I think that the more we make digital stories more common and the more we incorporate them into education, the more we will benefit from them. Such methods really need to be applied particularly for primary school students to understand abstract subjects more easily. That's why we need to increase the number of stories. Sometimes we see a lot of innovation in education, but it needs to be more widespread. - Furkan

Teacher Ozan states that digital stories should be prepared for each subject in order to teach the mathematics in an entertaining way:

The use of digital stories is a very good method. I am in favor of using it at every school. But first, the infrastructure of each school must be made proper for the use of the digital stories. This is the first thing I want to point out from the beginning. Secondly, I am in favor of applying these digital stories for every subject of the mathematics as much as possible. This is a must. Because most students do not like or understand the mathematics. However, the mathematics can be more entertaining with the help of these stories. I think that we need to let go of the rote learning a little bit. - Ozan

Recommendations For Implementation of Digital Stories

The primary school teachers' recommendations for the use of digital storytelling method in the mathematics teaching process were grouped under the titles of concretization with materials and active participation. It was stated by the primary school teachers that the subject to be explained in the mathematics teaching process should be concretized with materials in the implementation process of the digital stories. Teacher Arda notes that presence of materials in the process of using digital stories in the mathematics teaching has effects on the learning process:

Video and materials should be in harmony with each other. It should be presented as a whole. So that the lesson continues as a whole. After a certain point, we see that the digital story does not make much sense if the lesson consists of just images. But I think that it will be more useful if we support the digital story with some kind of materials. It is necessary to support the digital story with some materials instead of just using it. For example, the students see a cube in a video, it is nice. But in order for them to understand what this cube is like, they need to touch and feel it. - Arda

Teacher Kerem mentions by referring to a mathematics subject that it is important to use materials during the mathematics teaching with digital stories:

We can bring other materials to the classroom along with the digital stories. For instance, we can explain geometric figures with stories and make models of them before the lesson and bring them to the classroom. In this way, 3D shapes become more memorable for the students. - Kerem

Teacher Hakan emphasizes that using concrete materials in the mathematics teaching process carried out with digital stories has positive effects on the students:

*It is of great important to concretize the subjects in the mathematics. When the students concretize the subjects in their minds or are provided with concrete, we ensure a very effective learning. In other words, I think that the students need to see abstract concepts clearly with their eyes and touch them with their hands. Maybe this can be possible for grades 1, 2, 3; however, in grades 4 and, there is not much need for it anymore. Because they can perceive abstract subjects. They should be involved in the process for sure. I think that concrete examples should absolutely be provided with the students. - **Hakan***

Teacher Demir recommends that the students can be ensured to be active participants in the process thanks to materials appropriate for the content of digital stories in the mathematics teaching:

*Thanks to the digital stories, we can have the students involved in the process by providing opportunities of one-to-one learning and learning by doing. Thus, we can make the learning process more efficient. We can support the digital stories with activities that students can be involved in following the use of these stories. For example, activities that are in harmony with the digital stories can be prepared. Activities that present concrete examples can be created. Such as drawing a shape in a notebook using a pencil. Or a textbook or activity book suitable for these stories can be used. Any concrete material can be prepared as well in a way that would be in parallel with the stories. - **Demir***

Teacher Furkan states that the students can be provided with permanent learning by supporting the digital stories with materials in the mathematics teaching:

*When the students learn by seeing, touching, watching and doing, the subjects become more permanent for them. Thus, I think that it will be more effective for the students to make this widespread. If these stories are also supported with materials and we bring materials to the classroom related to the subject we are teaching, the students can touch and experience these materials. This eventually makes their learning more permanent by involving them in the teaching process. Therefore, these digital stories need to be more common. - **Furkan***

It was recommended by the primary school teachers that number of the classroom activities in which the students can actively participate should be increased during the implementation process of digital stories in the mathematics teaching. Teacher İlker points out that increasing the number of the activities during the implementation of digital stories in the mathematics teaching will have positive effects on learning process:

*I saw the activity right after your digital story. The activity was prepared in a way that would support this digital story and make the teaching process very easy and effective. I think that it can be possible for the students to learn more effectively and efficiently, particularly if number of the activities is increased in line with the digital stories. - **İlker***

It was recommended by the primary school teachers that the digital stories in the mathematics teaching should be prepared in such a way that the students can participate interactively. Teacher Sude describes that the digital stories can be organized interactively in the mathematics teaching:

We already carry out regular lessons together with the students. Our current education system is quite different from the past understanding of "the teacher tells and the student listens". We can make the learning process valuable, make it a little bit more enjoyable and

remarkable. We can show the story to the students and ask them questions about the story. Or we can ask the students to prepare questions about the story. They can prepare cards or questions in written form about the digital story. - Sude

Teacher Didem recommends that the digital stories can be turned into interactive stories in the mathematics teaching:

I think that more additional materials can be used. Also, an environment where the students would interact more can be created. In other words, the story can be turned into an interactive one, through which the students can make a choice. In this way, the stories can be more effective. - Didem

Teacher Efe states that the digital stories should be prepared in such a way that the students can be participate in the process in order for the digital stories to be more useful in the teaching process:

The students need a lot of practice. Besides, there should be a lot of material available to be used by the students and the students have to be involved in the process. Thus, the stories should be prepared in an interactive way. - Efe

Discussion and Conclusions

In the light of data obtained within the scope of the story, it is observed that the teachers expressed their opinions about for which stage or subject of the mathematics lesson they should use the digital stories. Moreover, they described what the student-based and story-based needs arise during the implementation of digital stories in the mathematics teaching process as well as they presented their recommendations for preparation and implementation of the digital stories to be used in the mathematics lesson.

It was emphasized by the primary school teachers that the use of digital stories would provide students with the opportunity of concretization of the subjects when starting to cover a new subject and would help the students focus on the lesson and gain permanent learning and have preliminary information about the subject. The obtained findings correspond to research conducted by Göçen Kabaran et al. (2019) in which the primary school teachers and primary school teacher candidates had stated that the digital stories can be used to have students pay attention to the lesson providing the opportunity to concretize the subjects in the teaching process. It was also indicated by the primary school teachers that the digital stories need to be used at the development stage of the lesson in the mathematics teaching by involving the students learning by doing, experiencing the studies on their own, being allowed to do individual works. It was also highlighted by the primary school teachers that the digital stories can be used at any stage of the lesson in the mathematics teaching. Correlatively, it was pointed out by Sadik (2008) as a result of his research that the digital stories can be used for any lesson in the curriculum. The primary school teachers remarked that, depending on the activities and content, the digital stories can be used at the introduction stage for stimulation, attention getting, discovery of prior knowledge and motivation; at the development stage for reinforcing what the students would learn and having the students participated in the process; lastly, at the evaluation stage for repeating the subject and identify the students' learning loss.

It was stated by the primary school teachers that the subjects of rhythmic counting, problems, concept of place value, four operations and fractions within the learning area of numbers and operations

can be effectively taught with the use of digital stories. They specified that the subjects of rhythmic counting, concept of places, four operations and fractions are found abstract by primary school students, therefore, it would be better to teach these subjects using the digital stories. Moreover, the primary school teachers stated that, due to having limited reading habit and difficulty in understanding what is read, the students have difficulty in learning the subject of problems and the teaching process with digital storytelling can offer positive effects on the students regarding problem solving skills. Correlatively, it was determined as a result of the research conducted by Dinçer and Yılmaz (2019) that the digital stories improve the students' problem-solving skill. The primary school teachers laid emphasis on the importance of the use of digital stories for the subject of problems since the subject is ensured to be supported with visuals, narrated, concretized, and contains examples from the student's daily lives. In addition, it was put forward by the primary school teachers that using the digital stories for teaching the subjects of the sub-learning area of "geometric figures and shapes" within the learning area of "geometry" would provide permanent and memorable learning since, according to the teachers, features of geometric figures and shapes are considered abstract by the students and the digital stories would provide the opportunity of turning abstract shapes into concrete ones. It was noted in the research of Göçen Kabaran et al. (2019) that the digital stories achieved the purpose of the outcomes by providing concrete learning opportunities based on the teachers and teacher candidates' statements. On the whole, the fact that the digital stories are supported with audio and visuals and address to more than one sensory organ, as underlined by the teachers participating in the study, offers concrete learning opportunities making it easy for the students to visualize the abstract subjects in their minds as well as enables the effective use of digital stories in teaching of entire subjects within the curriculum.

The primary school teachers highlighted that technological equipment such as internet, projector, computer, smart board should be ready during the mathematics teaching process implemented with digital stories, and the digital infrastructure needs to be checked prior the lesson. Similarly, it was stated by Kutlucan et al. (2019) in their research that the technological infrastructure of schools should be improved for digital stories to be more effective in teaching lessons and values. It was stated by the primary school teachers who participated in the study that the teachers should have a good command of technology and have a good grasp of the content and activities of the prepared digital story. Demirer (2013) put forward that the teachers should be provided with adequate field knowledge and skills for the digital stories to give better results in the learning process, and this view appears to correspond to the findings of this study. In the research conducted by Heo (2009), it was laid emphasis on the importance of faculties of education in respect of providing experiences on the methods to be used during teaching process with teacher candidates in teacher training programmes. Correlatively, it was stated in the research carried out by Daniels (2013) that teacher candidates can improve their qualities in their branches thanks to the digital stories in an educational aspect while Kim et al. (2021) described digital stories as motivating educational tool for the teachers' vocational development. In this context, it can be advised that teaching with digital stories should be integrated into the teaching courses in teacher programs for teacher candidates to improve their branch competence with digital story as well as in-service training opportunities should be offered to ensure teachers' branch competence in teaching with digital stories. Additionally, digital stories prepared for different lessons and subjects can be presented to teachers via the Education Information Network [EIN] preparing lesson plans and materials in line with these stories.

The primary school teachers stated that students' readiness should be taken into consideration to increase efficiency of digital stories in the mathematics teaching process, and it is important to make the students active participants in the mathematics teaching process implemented with digital stories. Similarly, it was emphasized that more productive and useful teaching process can occur when the students' individual differences are considered in the mathematics teaching process carried out with digital stories, and digital stories are prepared in accordance with the students' levels. The primary school teachers mentioned that customized digital stories can be prepared in the mathematics teaching by considering the students' surroundings, their living conditions, structure of their school and classroom, and their social circles. In the research regarding the transfer of digital materials prepared from examples of daily life into educational environment, it was underlined by Bhatt (2012) that digital stories enable to correlate daily life and the lessons. In the research conducted by Karakoyun (2014), it was determined that teacher candidates made recommendations for preparation of customized stories for digital stories to be used in teaching process. It was inferred from the research carried out by Yürük (2015) that involving the students in the digital story scripts prepared by the teachers enables the students to motivate. In line with the findings of the research and researchers' views in the literature, it is believed that content of the digital stories should be prepared in a way to consider cultural and linguistic characteristics of the environment where the students live as well as structures and current events around them.

The primary school teachers advised in the research that the characters in the story should be portrayed by real people, the content should consist of cartoon characters that will draw the students' attention, and the digital stories should be prepared based on the student's requests and needs in the preparation process of digital story. As a result of his research, Yürük (2015) pointed out that the students at 5th grade exhibited positive attitudes towards the digital stories since the content of the digital stories prepared for them had resemblance to cartoons. When considered from this point of view, it is of great importance to create digital stories considering the students' needs, requests and areas of interest required by their developmental characteristics.

It was highlighted by Yılmaz et al. (2017) that multiple disciplines are utilized together during implementation of digital stories that are important for the students with individual differences. Moreover, it was emphasized in the Mathematics Curriculum that the students' individual and cultural differences should not be ignored, and necessary attention should be paid to the use of appropriate models and approaches that reveal the students' learning differences (Ministry of National Education [MoNE], 2018). The primary school teachers recommended that, when preparing a digital story for the mathematics teaching, the content should be organized based on the stage of the lesson in which it will be used, and materials should be carefully chosen. In this regard, the digital stories should be prepared by considering the students' individual differences such as linguistic characteristics, learning levels and special cases.

When data obtained as a result of the research was analyzed, the primary school teachers stated that the process needs to be supported with materials in order for the students to comprehend abstract concepts in a concretized way during implementation of the digital stories in the mathematics teaching. In addition, it was believed by the teachers that increasing number of the in-class activities prepared in parallel with the content of the story will contribute to effective and permanent learning during implementation of the digital stories in the mathematics teaching. In the research conducted by Wang

and Zhan (2010) with university students, digital stories were used for four different courses and, as a result, it was emphasized that the students understood the course subject better as well as their interest, desire and motivation for the course increased. It was underlined that watching digital stories alone will not be sufficient for effective teaching. Moreover, it was stated that the teacher should prepare the classroom environment, support the digital story process with activities and materials and aforesaid activities should have examples from daily life. (Yürük, 2015). In accordance with these recommendations and views, in-service training can be provided with the teachers in respect of preparation and effective use of digital stories and preparation of lesson plan, in-class activity and materials.

The primary school teachers also recommended in the research that the students similarly need to experience the preparation process of digital story to make mathematics teaching with digital story more permanent. It was inferred by Kutlucan et al. (2019) that permanent learning is ensured since the students directly participate in the process. Kotluk and Kocakaya (2015) stated that preparing digital stories for high school students in physics teaching is effective in the development of students' 21st century skills. In the study carried out by Küçükokka et al. (2022), it was correlatively emphasized that the importance of technology has increased due to the current pandemic and digital skills need to be improved. When the Mathematics Curriculum is examined, it was observed that digital competence covers the students' safe and questioning use of technological tools, access to information, and contribution to the development of communication skills by participating in the internet and virtual environment. In accordance with this information, making the students participate in the preparation process of digital stories will be beneficial with regards to ensuring permanent learning, developing basic skills, preparing, presenting and sharing information on digital media.

Recommendations

Considering the findings and results obtained in regard to the use of digital story in the mathematics teaching process, recommendations were examined in two sections: recommendations for implementation process of the digital story and recommendations for future research.

Recommendations for Implementation Process of Digital Stories

- It is observed in the research that, based on the teachers' statements, the students could not turn their learning into experience since content of the digital stories lacked examples from the students' daily lives in the mathematics teaching process. Therefore, it is advised that the digital stories should include examples from the students' lives.
- It is demonstrated in the research that, as recommended by the teachers, the digital stories should be prepared for each subject, the stories can be integrated into other lessons and they should be provided with teachers as a resource. In this respect, it can be recommended to share and make it widespread the digital stories, lesson plans and materials prepared in conformity with most of the lessons, subjects and student levels on an online platform such as Education Information Network (EIN).

Recommendations for Future Research

- It can be advised to examine the skills and views of 1st, 2nd, 3rd and 4th grade primary school students and teachers regarding the preparation process of digital story in mathematics teaching for future research.

- In future research, it can be recommended to analyze the effects of the mathematics lessons planned and implemented based on digital stories on 1st, 2nd, 3rd and 4th grade primary school students' academic success, particularly on the subjects of problems, concept of place value, geometric figures and fractions.

References

- Akkoyunlu, B., & Kurbanoglu, S. (2003). Öğretmen adaylarının bilgi okuryazarlığı ve bilgisayar öz-yeterlik algıları üzerine bir çalışma [A study on teacher candidates' perceived information literacy self-efficacy and perceived computer self-efficacy]. *Hacettepe University Journal of Education*, 24, 1-10.
- Arslan, A. (2006). Bilgisayar destekli eğitim yapmaya ilişkin tutum ölçeği [The attitude scale toward making computer supported education]. *Yüzüncü Yıl University Journal of Education*, 3(2), 24-33.
- Aslan, S. (2014). *Bilgisayar destekli öğretimin fen bilgisi öğretmen adaylarının tutum ve akademik başarılarına etkisi* [The effect of computer assisted teaching on academic success and attitudes to the science teachers' candidates]. (Tez No. 363089). [Master Thesis, Fırat University]. National Thesis Center.
- Ateş, M. (2023). Dil eğitiminde dijital öyküleme yönteminin kullanılması: Sistemik derleme çalışması [Using digital storytelling in language education: A systematic review study]. *Pamukkale University Journal of Education*, 59, 340-364.
- Ayvaz Tunç, Ö., & Karadağ, E. (2013). Postmodernden oluşturmacılaşma dijital öyküleme [Digital narrating to the postmodern constructivism]. *Journal of Research in Education and Teaching*, 2(4), 310-315.
- Behmer, S., Schmidt, D., & Schmidt, J. (2006). Everyone has a story to tell: Examining digital storytelling in the classroom. In *Society for Information Technology & Teacher Education International Conference*, (pp. 655-662). AACE.
- Bhatt, I. (2012). Digital literacy practices and their layered multiplicity. *Educational Media International*, 49(4), 289-301.
- Bozkurt, E. (2008). *Fizik eğitiminde hazırlanan bir sanal laboratuvar uygulamasının öğrenci başarısına etkisi* [The effect on students success of a virtual laboratory application prepared in the physics education]. (Tez No. 178541). [Doctoral dissertation, Selçuk University]. National Thesis Center.
- Çoruk, H., & Seferoğlu, S. S. (2020). Dijital öykü oluşturma sürecinin öğrenenlerin yansıtıcı düşünme becerilerinin gelişimine etkisi [The effect of digital storytelling process on the development of reflective thinking skills of learners]. *Instructional Technology and Lifelong Learning*, 1(1), 1-23.
- Çukurbaşı, B., & İşman, A. (2014). Examination of teacher candidates' digital natives features (Example of Bartın University). *Bartın University Journal of Faculty of Education*, 3(1), 28-54.
- Daniels, K. (2013). Exploring the impact of critical reflection through the use of service-learning and digital storytelling. *Journal on School Educational Technology*, 9(1), 1-9.
- Demirbaş, İ. (2019). *Dijital öykülerin ilkökul öğrencilerinin dinlediğini anlama ve yaratıcı yazma becerilerine etkisi* [The effect of digital stories on the primary school students' listening comprehension and creative writing skills]. (Tez No. 607578). [Master Thesis, Kırşehir Ahi Evran University]. National Thesis Center.
- Demirer, V. (2013). *İlköğretimde e-öyküleme kullanımı ve etkileri* [Use of e-storytelling in primary education and its effects]. (Dissertation Number. 328704). [Doctoral dissertation, Necmettin Erbakan University]. National Thesis Center.
- Demir, S., & Kılıçkırın, H. (2018). Dijital öyküleme uygulamasının özel yetenekli öğrencilerin yazma becerilerine etkisi [The effect of digital story telling application on the gifted students' writing skills]. *Journal of Interdisciplinary Educational Research*, 2(4), 12-18.
- Dinçer, B., & Yılmaz, S. (2019). Matematik dersinde dijital hikaye anlatımının açıklık kavramı öğretimine etkisinin incelenmesine yönelik deneysel bir çalışma [An experimental study on the investigation of the effect of the digital storytelling on teaching of the concept of range]. *International Journal of New Trends in Arts, Sports & Science Education (IJTASE)*, 8(2), 49-57.
- Dola, N., & Aydın, İ. S. (2020). Dijital öykü yazarlığının çeşitli değişkenlere göre incelenmesi dijital öykü yazarlığının çeşitli değişkenlere göre incelenmesi [Investigation of digital story authorship according to various variables]. *Journal of Language Education and Research*, 6(1), 17-34.
- Domalewska, D. (2014). Technology-supported classroom for collaborative learning: Blogging in the foreign language classroom. *International Journal of Education and Development using ICT*, 10(4), 21-30.
- Dumlu Güler, T. (2011). *6. sınıf fen ve teknoloji dersindeki hücre ve organelleri konusunun eğitsel oyun yöntemiyle öğretilmesinin öğrencilerin akademik başarısına etkisi* [The effect of teaching through educational game of "cell and organelles" topic in 6th grade science education course on academic achievement of students]. (Tez No. 299762). [Master Thesis, Atatürk University]. National Thesis Center.

- Eroğlu, E. N. (2022). Türkçenin yabancı dil olarak öğretiminde dijital öykülerin yazma becerisinde kullanılabilirliği üzerine: Kuramsal bir çalışma [On the usability of digital stories in writing skills in teaching Turkish as a foreign language: A theoretical study]. *International Journal of Teaching Turkish as a Foreign Language*, 5(2), 108-123.
- Figa, E. (2004). The virtualization of stories and storytelling. *Storytelling Magazine*, 16(2), 34-36.
- Göçen, G. (2014). *Dijital öyküleme yönteminin öğrencilerin akademik başarı ile öğrenme ve ders çalışma stratejilerine etkisi* [The effect of digital storytelling method on students' academic achievement and learning and study strategies]. (Tez No. 387198). [Master Thesis, Muğla Sıtkı Koçman University]. National Thesis Center.
- Göçen Kabaran, G., Karalar, H., Aslan Altan, B., & Altıntaş, S. (2019). Sınıf öğretmeni ve sınıf öğretmeni adayları dijital öykü atölyesinde [In-service and preservice classroom teachers in digital story workshop]. *Cumhuriyet International Journal of Education*, 8(1), 235-257.
- Gökben, T., & Kışla, T. (2015). Bilgisayar destekli hikaye anlatımı yöntemi: Alanyazın araştırması [The use of computer-aided story in education: Literature review]. *Turkish Online Journal of Qualitative Inquiry*, 6(2), 97-122.
- Gömlüksiz, M. N., & Pullu, E. K. (2017). Toondoo ile dijital hikâyeler oluşturma öğrenci başarısına ve tutumlarına etkisi [The effect of digital stories developed by using toondoo on students' academic achievement and attitudes]. *Electronic Turkish Studies*, 12(32), 95-110.
- Heo, M. (2009). Digital storytelling: An empirical study of the impact of digital storytelling on pre-service teachers' self-efficacy and dispositions towards educational technology. *Journal of Educational Multimedia and Hypermedia*, 18(4), 405-428.
- Kahraman, Ö. (2013). *Dijital hikâyecilik metoduyla hazırlanan öğretim materyallerinin öğrenme döngüsü giriş aşamasında kullanılmasının fizik dersi başarısı ve motivasyonu düzeyine etkisi* [The effect of using teaching materials prepared by digital storytelling method at the engagement phase of learning cycle on physics course achievement and motivation level]. (Tez No. 352043). [Doctoral dissertation, Balıkesir University]. National Thesis Center.
- Karakoyun, F. (2014). *Çevrimiçi ortamda oluşturulan dijital öyküleme etkinliklerine ilişkin öğretmen adayları ve ilköğretim öğrencilerinin görüşlerinin incelenmesi* [Examining the views of elementary school students and preservice teachers about digital storytelling activities in online environment]. (Tez No. 361705). [Doctoral dissertation, Anadolu University]. National Thesis Center.
- Kim, D., Long, Y., Zhao, Y., Zhou, S., & Alexander, J. (2021). Teacher professional identity development through digital stories. *Computers & Education*, 162.
- Kocaman-Karoğlu, A. (2015). Öğretim sürecinde hikâye anlatmanın teknolojiyle değişen doğası: Dijital hikâye anlatımı [The changing nature of storytelling by means of technology in the instructional process: Digital storytelling]. *Educational Technology Theory and Practice*, 5(2), 89-106.
- Kotluk, N., & Kocakaya, S. (2015). 21. yüzyıl becerilerinin gelişiminde dijital öykülemeler: ortaöğretim öğrencilerinin görüşlerinin incelenmesi [Digital storytelling for developing 21st century skills: From high school students' point of view]. *Journal of Research in Education and Teaching*, 2(36), 354-363.
- Kukul, V., & Kara, M. (2019). Dijital hikaye anlatımının öğretmen adaylarının gözünden incelenmesi [Investigating digital storytelling through the eyes of pre-service teachers]. *Journal of Kırşehir Education Faculty*, 20(3), 1417-1446.
- Kurudayıoğlu, M., & Bal, M. (2014). Ana dil eğitiminde dijital hikâye anlatımlarının kullanımı [The usage of digital storytelling in mother language education]. *Sakarya University Journal of Education*, (28), 74-95.
- Kutlucan, E., Çakır, R., & Ünal, Y. (2019). Dijital öykü anlatımı ile verilen değerler eğitimine yönelik bir eylem araştırması [An action research for the value education provided with digital storytelling]. *Kastamonu Education Journal*, 27(5), 2187-2202.
- Kuzu Sarar, T., & Durna, C. (2020). The effect of intelligence and mind games on secondary school students' writing success. *TOJET: The Turkish Online Journal of Educational Technology*, 19(3), 70-79.
- Küçüköğlü, U., & İncikabı, L. (2020). Ortaokul öğrencilerinin matematik tarihi hakkında dijital öykü tasarım süreçleri ve bu deneyimlerine yönelik görüşlerinin incelenmesi [Examining middle school students' digital story design processes and their views on these experiences]. *TAY Journal*, 4(2), 179-198.
- Küçükokka, M., Özdemir, B. G., Açar, M. E., Yılmaz, İ., & Yılmaz, K. (2022). Öğretmen adaylarının matematik tarihçilerine yönelik tasarladıkları dijital öykülerin değerlendirilmesi. *Eurasian Conference on Language & Social Sciences, (Oral presentation with full text printed)*.

- Lambert, J. (2010). *Cookbook for digital storytelling*. Digital Diner.
- Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology*, 28(4), 563-575.
- Lesser, L. M. (2001). Surn of songs: Making mathematics less nonotone. *Mathematics Teacher*, 93, 372-378.
- Mangal, K. (2020). *İnsan hakları, yurttaşlık ve demokrasi dersinde dijital öyküleme etkinliklerinin öğrencilerin girişimcilik becerilerine ve derse yönelik tutumlarına etkisi* [The effect of digital narration activities on students' entrepreneurship skills and attitudes towards the course in human rights, citizenship and democracy]. (Tez No. 634203). [Master Thesis, Afyon Kocatepe University], National Thesis Center.
- Ministry of National Education [MoNE]. (2018). *Matematik dersi öğretim programı* [Mathematics course curriculum]. Milli Eğitim Bakanlığı Talim ve Terbiye Kurulu Başkanlığı.
- Ohler, J. (2013). *Digital storytelling in the classroom: New media pathways to literacy, learning, and creativity*. Corwin.
- Robin, B. (2006). The educational uses of digital storytelling. In *Society for Information Technology & Teacher Education International Conference* (pp. 709-716).
- Robin, B. (2008). Digital storytelling: A powerful technology tool for the 21st century classroom. *Theory Into Practice*, 47(3), 220-228.
- Rule, L. (2005). *Digital storytelling workshop agenda*. Access to date 20.02.2023 <http://homepage.mac.com/eportfolios/workshop/AgendaDigitalStory.html>
- Sadik, A. (2008). Digital storytelling: A meaningful technology-integrated approach for engaged student learning. *Educational Technology Research and Development*, 56(4), 487-506.
- Sever, T. (2014). *An investigation into the impact of digital storytelling on the motivation level of students*. (Dissertation Number. 375589). [Master Thesis, Çanakkale On Sekiz Mart University]. National Thesis Center.
- Schiro, M. (2004). *Oral storytelling and teaching mathematics*. Sage.
- Smeda, N., Dakich, E., & Sharda, N. (2010). Developing a framework for advancing e-learning through digital storytelling. In *IADIS International Conference E-Learning* (pp. 169-176).
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research*. Sage.
- Sur, E. (2022). Dijital emülasyon. In T. Talan & V. Batdı (Eds.), *Education and current approaches in the age of technology* (pp. 89-108). Efe Akademi.
- Turgut, F., & Kışla, T. (2015). Bilgisayar destekli hikâye anlatımı yöntemi: Alanyazın araştırması [The use of computer-aided story in education: Literature review]. *Turkish Online Journal of Qualitative Inquiry*, 6(2), 97-121.
- Ulum, E., & Yalman, E. F. (2018). Fen bilimleri dersinde dijital hikaye hazırlamanın ders başarısı düşük ve bilgisayarla fazla vakit geçiren öğrenciler üzerindeki etkisinin incelenmesi [Examining the effects of preparing digital storytelling in science and technology course on the academically inadequate students spending much time on computers]. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education*, 12(2), 306-335.
- Usluel, Y. K., & Atal, D. (2013). Students' approach to social network in educational context. *International Journal of Web Based Communities*, 9(2), 188-198.
- Uslupehlivan, E., Kurtoğlu Erden, M., & Cebesoy, Ü. B. (2017). Öğretmen adaylarının dijital öykü oluşturma deneyimleri [Digital story creation experiences of pre-service teachers]. *Uşak University Journal of Social Sciences*, 10(Special Issue), 1-22.
- Wang, S., & Zhan, H. (2010). Enhancing teaching and learning with digital storytelling. *International Journal of Information and Communication Technology Education (IJICTE)*, 6(2), 76-87.
- Yang, Y. T. C., & Wu, W. C. I. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. *Computers & Education*, 59(2), 339-352.
- Yıldırım, A., & Şimşek, H. (2018). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in social sciences]. (11th ed.). Seçkin.
- Yılmaz, Y., Üstündağ, M. T., & Güneş, E. (2017). Öğretim materyali olarak dijital hikâye geliştirme aşamalarının ve araçlarının incelenmesi [Investigation of digital story development stages and tools as teaching materials]. *Abant İzzet Baysal University Journal of Faculty of Education*, 17(3), 1621-1640.

- Yoon, T. (2013). Are you digitized? Ways to provide motivation for ELLs using digital storytelling. *International Journal of Research Studies in Educational Technology*, 2(1), 1-10.
- Yüksel Arslan, P., Yıldırım, S., & Robin, B. R. (2016). A phenomenological study: teachers' experiences of using digital storytelling in early childhood education. *Educational Studies*, 42(5), 427-445.
- Yürük, S. E. (2015). *Dijital öykülemeye dayalı değerler eğitiminin öğrencilerin değer kazanımı ve tutumlarına etkisi* [The effect of digital story based values education on students' attitudes and value acquisition]. (Tez No. 423425). [Master Thesis, Fırat University]. National Thesis Center.

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 50%

Author 2: 50%

This study was produced from the master's thesis of the first author. A part of this study was presented as an oral presentation at the 2nd International Educational Sciences Congress.

Conflict Statement

There is no conflict of interest with the people participating in the research.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Dijital Öyküleme Yöntemiyle Matematik Öğretimi Sürecine Yönelik Sınıf Öğretmenlerinin Deneyimleri

Giriş

İnsan ihtiyaçlarının gün geçtikçe farklılaşması sebebi ile bilim ve teknolojiye hayatın her alanında daha çok önem verilmekte (Dumlu Güler, 2011) ve bu hızlı dönüşüm eğitim öğretim ortamlarını da etkilemektedir. Eğitsel süreçlere teknolojinin entegrasyonu ile beraber öğretim hedeflerinin ve kazanımlarının etkin bir şekilde öğretilebilmesi için yenilikçi fırsatlar ortaya çıkmaktadır (Kurudayıoğlu & Bal, 2014). Günümüzde ders kitapları gibi tek uyaranlı uygulamalar yerine yaparak yaşayarak öğrenme ve kalıcı öğrenme esaslı birden fazla uyaranı içerisinde barındıran öğretim materyallerine ihtiyaç duyulmaktadır (Kuzu Sarar & Durna, 2020). Buna bağlı olarak eğitim öğretimde kullanılan öğretim yöntemlerinin öğrencinin istek ve ihtiyaçları göz önünde bulundurularak dijital materyallerle zenginleştirilmesinin öğrencinin öğrendiklerini yapılandırmasını ve derse olan ilgilerinin artırılmasını sağlayacağı düşünülmektedir (Göçen, 2014). Özellikle bazı öğrencilerin matematik gibi olumsuz tutum sergilediği derslerde öğrencilerin ilgisini çeken dijital materyallerin kullanılması eğitsel sürecin daha verimli yürütülmesi için fırsat sunacaktır. Bu doğrultuda öğrencinin öğrendiklerini aktarabilmesi için zihninde yapılandırabilmesine ve bilgiye somut yaşantılar aracılığıyla ulaşabilmesine fırsat sunduğundan dolayı dijital öyküleme (Yüksel Arslan vd., 2016) en etkili öğretim yöntemlerinden biri olarak dikkat çekmektedir.

Teknolojinin kullanılarak öykülerin metinler aracılığı ile dijital ortama aktarılabilmesi, kaydedilip saklanabilmesi, çevrimiçi ortamlarda yayınlanabilmesi ile birlikte dijital öykü kavramı ortaya çıkmıştır (Gökben & Kışla, 2015). Rule (2005) dijital öyküyü düzenlenen görseller, ses, müzik ve anlatımını temel alarak farklı karakteri, olayı, tecrübeyi ve anlamlandırmayı çeşitli boyutlar ve renklerle öykülerin modern tanımlaması olarak açıklamaktadır. Dijital öykü etkileşimli bir çevrim içi ortamda ses, görsel, fotoğraf, müzik, video, hareket efekti ve metnin yer aldığı bir durumun sunulması sürecidir (Figa,

2004). Demirbaş (2019) ise dijital öykünün metin, ses, resim, hareket elemanlarının birlikte bulunduğu kısa videolar olarak tanımlamaktadır. Çevrim içi ve dijital ortamların sunduğu imkanlar ile öykü metni yazma ve yazılan öyküleri transfer etme aşamalarının daha hızlı yapılmasıyla öğrencilerin dikkatlerinin dağılması engellenerek öğrencinin süreçteki etkileşimi artırılabilir. Bunun yanında resimlerin, görüntülerin ve metinlerin biraraya gelmesi ile oluşan dijital öyküler öğrencilerin daha iyi ve hızlı kavramasını sağlamakta (Sur, 2022) ve dijital öykü yöntemi ile öğrencilerin bilgiyi keşfetme, bilgiye erişme, bilgiyi inceleme, farklı fikir ve planlama becerilerini geliştirdiği görülmektedir (Ateş, 2023). Öğretimde dijital öykülerin kullanılması öğrencinin ilgisini derse çekmekte ve yaratıcı öğrenme ortamı oluşturmaktadır (Sadık, 2008). Bir başka deyişle teknolojik gelişmeler ile geleneksel öykü anlatımının bir araya getirilmesiyle dijital öyküler oluşturmak eğitimde verimliliği artırmanın etkinli yollarından biri olarak dikkat çekmektedir (Kocaman Karoğlu, 2015).

İçinde bulunduğumuz yüzyılda bilgi iletişim ve teknolojilerinde yaşanan gelişmeler bilgiye ulaşmayı, bilgiyi aktif kullanmayı insanların yaşamının temel ihtiyacı haline getirilmesini sağlamanın yanında (Çukurbaşı ve İşman, 2014) başta eğitim ve öğretim ortamı olmak üzere hayatımızın birçok alanında değişim gerçekleştirmiştir (Karakoyun, 2014). Günümüzde bilim ve teknolojinin etkin olmasından dolayı bilginin anlatım ve ezber temelli aktarılması ile etkili bir öğretim etkinliği sağlanamayacağı düşüncesini ortaya çıkarmaktadır (Aslan, 2014). Yıllar içinde teknolojinin gelişmesi ile birlikte öğrenciler için alışılmış öğretim materyalleri dikkat çekici olmaktan uzaklaşmış ve öğrencilerin öğretim ortamlarından beklentileri farklılaşmıştır. Buna bağlı olarak eğitim alanında dönemin teknolojik gelişmelerine uygun, yeni ve çeşitli yöntemlerin geleneksel öğretim yöntemleri yerine kullanılması eğitim ve öğretimin veriminin artırılmasında oldukça önemlidir (Uslupehlivan vd., 2017). Teknolojinin hızla değişmesiyle beraber bilgiyi aktarma ve paylaşma yöntemlerinin bilgisayar, haberleşme araçları ve çoklu ortam teknolojileri gibi araçlara evrilmesinden dolayı yaşamımızı devam ettirdiğimiz toplumun bilgi toplumu olma yolunda ilerlediği söylenebilir (Arslan, 2006). Her gün değişen dünyada başarı elde edilebilmesi için teknoloji destekli öğrenmenin bilgi, beceri ve hayat boyu öğrenme sürecinin gelişiminde etkili olduğu düşünülmektedir (Domalewska, 2014). Eğitim öğretim için gerekli bilgi, beceri ve yeterliklerin bilgiyi öğrenmenin yanında öğrenmeyi öğrenme yeterliğini, bilginin içeriğini yaşama aktarma becerisi kazandırılmalıdır (Gömleksiz & Pullu, 2017).

Usluel ve Atal'a (2013) göre öğrencinin teknolojinin sağladığı olanaklara okul dışında kolayca ulaşabilmesi ancak okullarda bu olanakların yeterli olmaması "dijital uyumsuzluk" olarak tanımlanan farklı sorunların ortaya çıkmasına sebep olmaktadır. Teknolojinin okulda zengin bir şekilde kullanılmasıyla ve dijital uyumsuzluk sorununun çözülmesiyle öğrencilerin ilgisinin konu üzerinde tutulması, anlamlı ve kalıcı öğrenmenin gerçekleşmesi sağlanır (Dola & Aydın, 2020). Benzer olarak Yang ve Wu (2012) öğrenme ortamlarında teknolojinin zengin ve etkin bir şekilde kullanılmasının anlamlı öğrenmenin sağlanmasında ve öğrencilerin dikkatinin çekilmesinde oldukça önemli olduğunun vurgusunu yapmaktadırlar. Bunun yanında dijital öykünün kullanımı ile birlikte öğrencilerin ders sürecinde aktif rol oynadıkları ve derse olumlu görüş geliştirmelerine yardımcı olduğu tespit edilmiştir (Demir & Kılıçkiran, 2018). Buna bağlı olarak teknolojinin hızla geliştiği bu dönemde teknolojinin öğrenme ortamlarına entegre edilmesine dayalı süreçler oldukça önemlidir (Çoruk & Seferoğlu, 2020).

Akkoyunlu ve Kurbanoglu (2003) öğrencilerin teknoloji ile büyümesinden dolayı öğretmenlerin öğretimde başarılı olabilmesi için teknolojinin eğitimdeki etkisini benimsemeleri, kendilerini değişen teknolojiler ile birlikte geliştirmeleri gerektiğinden bahsetmektedir. Benzer şekilde Kahraman (2013)

teknolojinin sürekli değişmesi ve gelişmesi ile öğretmenlerin kendilerini bu yönde geliştirmeleri ve çağa uyum sağlamaları gerektiğini belirttiği görülmektedir. Öğretmenler bir süreci tanımlamak, bir düşünceyi sunmak, materyallerin kullanarak eğitsel konularla ilgili açıklama yapmak için dijital öykülerden yararlanabilirler (Wang & Zhan, 2010). Bunun yanında dijital öykü öğretmeni sınıf içinde hem rehber hem de etkin kılarak öğretmene zaman açısından tasarruf imkanı vermekte, etkili ve kalıcı öğrenme gerçekleştirmesini sağlamaktadır (Mangal, 2020).

Matematik var olan her şey arasındaki ilişkiyle alakadar olan, bütün bilim dallarında var olan ve yaratıcısı insan olan bir araç olmakla birlikte insanoğlunun istek ve ihtiyaçlarının neredeyse bütün alanlarda artması ile yaşamımızdaki önemi gün geçtikçe fazlalaşan bir bilim dalıdır (Bozkurt, 2008). Matematik öğretiminde ders programlarının öğrencilerin kendi yeteneklerini göstermelerine imkan vermemesi, derse olan ilgilerini ve etkin katılımlarını sınırlandırması ve bunun yanında ezber temelli, düz anlatım gibi yöntemlerin kullanılması öğrencilerin dikkatlerini yitirmelerine ve sıkılmalarına sebep olmaktadır (Lesser, 2001). Bunun yanında öğrenciler matematikte yer alan soyut kavramları günlük hayatları ile ilişkilendirememekte bu nedenle matematik dersine karşı ön yargıları oluşmaktadır. (Küçüköğlü & İncikabı, 2020). Dijital öyküler, öğrencilerin akademik bilgiyi içinde bulunduğu yaşam ile ilişkilendirmesi, çocuğun renkli dünyasına hitap etmesi, süreçte öğrenciyi aktif kılması, yaşamından örnekler taşıması ve birden fazla duyu organına hitap ederek somut yaşantılar edinmesine imkan sunmasıyla matematik öğretiminde kullanılabilir alternatif öğrenci merkezli öğretim yöntemlerinden biri olarak dikkat çekmektedir.

Smeda ve diğerlerine (2010) göre dijital öyküleme bireyin özgün düşünceleri ile teknolojiyi bütünleştiren, öğrenciyi merkeze alan çağdaş bir yaklaşım ve teknolojik olarak zengin, işbirlikli öğrenme ve öğretme ortamlarının sağlanmasına yardımcı olmaktadır. Öğrenme ortamına dijital öykülerin entegre edilmesi ile öğrencilerin dijital beceri kazanmaları ve öykü kapsamında temel alınan konuyu daha iyi kavramaları açısından imkan sağlanmaktadır (Behmer vd., 2006). Bunun yanında dijital öyküleme yönteminin yazma, organize etme, sunum, iletişim, problem çözme ve değerlendirme becerilerini de kazandırdığı düşünülmektedir (Robin, 2006). Dijital öykü, öğrencilerin ilgisini çekmesi ve teorik bilgilerin günlük yaşam transfer edilmesine yardımcı olmasıyla matematik öğretimini ve öğrenmeyi anlamlı hale getirmektedir (Schiro, 2004). Öğretmen ve öğretmen adaylarının öğretimde dijital öykü kullanımını deneyimleyebilmesi, bilmesi ve süreçte kullanabilmesi için öncelikle dijital öykü kavramı ile tanışmasını sağlamak gerekir (Kukul & Kara, 2019). Bu sebeple dijital öykülerin matematik öğretimi sırasında kullanılmasının desteklenmesi, matematik derslerinin daha eğlenceli ve anlaşılır hale gelmesinde yardımcı olacağı düşünülmekte ve sınıf öğretmenlerinin dijital öyküleri matematik dersinde kullanmalarına yönelik tecrübelerinin incelenmesinin dijital öykülerin matematik derslerine daha sık ve etkin şekilde kullanılması için önemli fırsat sunacağına inanılmaktadır. Bu bakış açısı göz önünde bulundurularak sınıf öğretmenlerinin dijital öyküleme yöntemli ile planlanan ve uygulanan matematik öğretimi dersine yönelik görüşlerinin incelenmesi amaçlanmıştır.

Yöntem

Araştırmanın Modeli

Ülkemizde yaygın bir öğretim yöntemi olmayan ve genellikle matematik dersinde tercih edilmeyen dijital öykü yöntemine dair sınıf öğretmenlerinin dijital öykünün matematik öğretimi sürecinde kullanılmasına yönelik deneyimlerinin araştırılması planlanmıştır. Buna bağlı olarak bu nitel

çalışmada olgubilim araştırma deseni uygulanarak matematik öğretiminde ilkokulun her sınıf düzeyi için belirli kazanımlara ilişkin dijital öyküler ve ders planları hazırlanmış, öğretmenlerle beraber sınıflarında uygulanmış ve öğretmenlerin dijital öykülemenin matematik öğretiminde kullanıma yönelik görüşleri belirlenmiştir.

Araştırmanın Evren ve Örneklemi

Bu çalışmaya gönüllü olarak katılan 25 sınıf öğretmeni 18-65 yaş grubu bireylerden amaçsal örnekleme yöntemlerinden ölçüt örnekleme metodu ile seçilmiştir. Bu çalışmaya katılan sınıf öğretmenleri seçilirken dijital öykü kapsamında bilgi yeterliğine sahip olması, dijital öyküyü derste kullanabilmesi ve medya araçlarının kullanımında yeterli beceriye sahip olması ölçütleri göz önünde bulundurulmuştur.

Eğitsel Uygulama Süreci

Dijital Öykülerin Hazırlanması

Araştırmacı tarafından "Powtoon" platformu kullanılarak Robin (2008), Lambert (2010) ve Ohler'in (2013) çalışmalarında yer alan dijital öykünün öğeleri dikkate alınarak ilkokulun 4 ayrı sınıf düzeyi için birer dijital öykü oluşturulmuştur. Uygulama yapacak öğretmenlerin derste kullanması için dijital öyküler temel alınarak iki ders saatini (40'+40') kapsayacak şekilde ders planları hazırlanmıştır. Dijital öyküde olay örgüsü kurgulanırken öğrencilerin günlük hayatta karşılaşılabilecekleri durumlar dikkate alınmıştır. Araştırmacı dijital öykü ve ders planı hazırlama sürecinde öğrencinin derse katılabileceği etkinlikler göz önünde bulundurmuş, bu sayede öğrencinin sürece etkin katılımını sağlanmayı amaçlamıştır. Hem dijital öyküler hem de ders planları oluşturulduktan sonra matematik öğretimi, eğitim bilimleri ve Türkçe üzerine uzmanlaşmış 4 bilim insanından görüş alınmış, dijital öyküler ve ders planları uzman görüşleri dikkate alınarak tekrar düzenlenmiştir. Sonrasında hazırlanan dijital öyküler ve ders planları 4 adet sınıf öğretmenine ve bir adet bilişim teknolojileri uzmanına yollanmış ve Lawshe (1975) tekniği doğrultusunda dijital öykü ve ders planlarının hepsinin kapsam geçerlilik oranları 1 olarak belirlenmiştir.

Dijital Öykülerin İçeriği ve Uygulama Süreci

İlkokulun her sınıf düzeyi için matematik öğretimi kazanımları doğrultusunda hazırlanan dijital öykülerin konu kapsamına ve içeriklerine yönelik bilgiler aşağıda yer almaktadır.

İlkokul 1. sınıf matematik öğretimi için "Sayılar ve İşlemler" öğrenme alanında "M.1.1.2.6. Doğal sayılarla toplama işlemini gerektiren problemleri çözer." kazanım kapsamında öğrenci seviyesine uygun, 02 dakika 37 saniye süreli dijital öykü hazırlanmıştır. 1. sınıf için hazırlanan dijital öykünün olay örgüsünde üç arkadaşın bir çiçek dikme etkinliğinde bahçeye kaç çiçek diktikleri ile ilgili üç adet problem verilmiştir. Her problemin cevabı verilmeden önce video durdurulmuş ve öyküdeki nesnelere aynısı öğrencilere dağıtılarak problemin cevabını kendilerinin bulması istenmiştir. Sonrasında ise dijital öykü devam ettirilmiş ve buldukları cevabı kontrol etmeleri sağlanmıştır. Dijital öykünün sonunda verilen karakterler, farklı renkteki çiçekler ve bahçe görseline yönelik materyaller öğrencilere dağıtılmıştır. Öğrencilerden karakter belirlemeleri ve istedikleri renkte ve sayıda çiçek seçerek kendi problemlerini ve kendi bahçelerini oluşturmaları istenmiştir. Bu doğrultuda problem kurmaya yönelik çalışmalara katılmaları sağlanmıştır.

İlkokul 2. sınıf matematik öğretimi için “Geometrik Örüntüler” öğrenme alanında “M.2.2.3.2. Bir geometrik örüntüdeki ilişkiyi kullanarak farklı malzemelerle aynı ilişkiye sahip yeni örüntüler oluşturur.” kazanımı kapsamında, öğrenci seviyesine uygun, 3 dakikalık dijital öykü oluşturulmuştur. 2. sınıf için hazırlanan dijital öykünün olay örgüsü bir sınıf ortamında bir öğrencinin kardeşine hediye almaya karar verememesi üzerine kurgulanmıştır. Dijital öyküde öğretmen öğrencisine o gün işleyecekleri geometrik örüntüler konusu ile kolye oluşturacaklarını söyler, dilerse kardeşine böyle bir hediye verebileceğini ve böyle bir hediyein daha anlamlı olduğundan bahseder. Dijital öyküde farklı örüntü kuralları bulunmaktadır. Bu örüntü kuralları ile kendi kolyelerini oluşturmaları için her örüntü için ip, örüntüde yer alan geometrik şekil kartları ve yapıştırıcı gibi materyaller öğrencilere dağıtılmıştır. Dijital öykü örüntü kuralında durdurulmuş ve öğrencilerin kendi kolyelerini oluşturmaları istenmiştir. Sonrasında dijital öykü devam ettirilmiş ve bütün öğrencilerden oluşturdukları kolyelerdeki örüntüleri kontrol etmesi beklenmiştir.

İlkokul 3. sınıf matematik öğretimi için “Geometri” öğrenme alanında “M.3.2.1.2. Küp, kare prizma ve dikdörtgen prizmanın birbirleriyle benzer ve farklı yönlerini açıklar.” kazanımı kapsamında öğrenci seviyesine uygun, 03 dakika 03 saniye süreli dijital öykü hazırlanmıştır. 3. sınıf için hazırlanan dijital öykünün olay örgüsü sahilde iki arkadaşın üç adet hazine sandığı bulması ve sandıkları açmak için şifreleri çözmeye çalışması üzerine kurgulanmıştır. Şifreler sandıkları oluşturan geometrik cisimlerin isimlerinden oluşmaktadır. Dijital öyküde küp, kare prizma ve dikdörtgen prizma şeklindeki sandıklar tek tek incelenir ancak özel bir durumu olması özelliğine değinilmez. Bu sırada geometrik cisim incelenirken her özellikte video durdurulmuş ve sınıfa getirilen küp, kare prizma ve dikdörtgen prizma modelleri, renkli kâğıtlar ve yapıştırıcı gibi materyaller öğrencilere dağıtılmıştır. Öğrencilerin küpün 8 köşesi, 6 yüzü, 12 ayrıtı olduğu ve tüm yüzlerinin eşit karelerden oluştuğu, kare prizmanın 8 köşesi, 6 yüzü, 12 ayrıtı olduğu ve 2 yüzünün kare, 4 yüzünün dikdörtgenlerden oluştuğu ve son olarak dikdörtgen prizmanın 8 köşesi, 6 yüzü, 12 ayrıtı olduğu ve tüm yüzlerinin dikdörtgenlerden oluştuğu renkli kâğıtlar yardımı ile modeller üzerinde incelemeleri sağlanmıştır. Son bölümde ise kazanımında yer alan tüm prizmalarda 8 köşesinin, 6 yüzünün ve 12 ayrıtının bulunması yönünden benzer oldukları ve küpün bütün yüzlerinin karelerden oluşması, kare prizmanın 2 yüzünün kare ve yüzünün dikdörtgenlerden oluşması, dikdörtgen prizmanın ise tüm yüzlerinin dikdörtgenlerden oluşması yönünden farklı oldukları incelenerek öğrencilerin karşılaştırma yapmaları sağlanmıştır.

İlkokul 4. sınıf matematik öğretimi için “Veri İşleme” öğrenme alanında “M.4.4.1.2. Sütun grafiğini oluşturur.” kazanım kapsamında öğrenci seviyesine uygun, 02 dakika 57 saniye süreli dijital öykü hazırlanmıştır. 4. sınıf için hazırlanan dijital öykünün olay örgüsü, küçük bir kızın annesine depremzedelere yardım kolisi hazırlamasına ve kolide yer alacak ürünlerin kategorize edilmesine yardımcı olması üzerine kurgulanmıştır. Koliler gıda ve hijyen olmak üzere iki kategoride toplanmıştır. Gıda kategorisindeki ürünlerin sayısını belirlemek için nesnelere görselleri karışık olarak verilerek, öğrencinin öğretmenin verdiği çalışma kâğıtlarına görsellerden hareketle çetele tablosu oluşturması istenmiştir. Çetele tablosundan yola çıkarak ise gıda kategorisine ait sütun grafiği oluşturmaları sağlanmıştır. Hijyen kategorisinde ise şekil grafiğinde verilen ürünlerden yola çıkarak sıklık tablosu, sıklık tablosundan yola çıkarak da sütun grafiği oluşturmaları ve son olarak her iki kategori için de bütün kolilerde yer alan ürünler yönelik verilen şekil grafiklerinden yola çıkarak sütun grafiği oluşturmaları istenmiştir. Öğrencilerin ortaya çıkardığı çalışmaların kontrolleri video durdurularak yapılmıştır. Böylelikle sütun grafiği oluşturulmadan önce verilerin, nesne veya şekil grafiği, çetele ve sıklık tablosu ile düzenlenmesi sağlanmıştır.

Araştırmacının Veri Toplama Sürecindeki Rolü

Araştırmacı çalışmanın katılımcılarına veri toplama süreci öncesinde ön bilgilendirme yaparak uygulamanın ve görüşme sürecinin nasıl yürütüleceğine dair açıklamalar yapmıştır. Çalışması kapsamında oluşturulan dijital öyküleri, ders planları ve materyalleri veri toplama sürecinde sınıf öğretmenlerine ulaştırmıştır. Dijital öykü sürecinde uygulanacak etkinlikler kapsamında materyaller sınıf öğretmenlerine ulaştırılırken her sınıfın mevcudu dikkate alınmıştır. Sınıf öğretmenlerinin derse katılabileceğini belirtmesi üzerine araştırmacı öğretim sürecine katılma ve gözlem yapma fırsatı bulmuştur. Araştırmacının uygulama sürecine katılması ile birlikte sınıf mevcudu kalabalık olan sınıflarda araştırmacı materyallerin dağıtılmasında, etkinlik sonuçlarının kontrollerinin sağlanmasında ve özellikle ilkokulun ilk basamağındaki sınıf seviyelerinde sınıf yönetimi konusunda sınıf öğretmenine yardımcı olmuştur. Araştırmacı grup etkinliklerinde grup içindeki görev dağılımlarında, grupların makas, yapıştırıcı gibi ihtiyaçlarının karşılanmasında ve öğrencilerin etkinlikler konusunda sorularını cevaplamada öğrencilere rehberlik etmiştir.

Veri Toplama Araçları

Araştırmada sınıf öğretmenlerinin matematik öğretiminde dijital öykü yönteminin kullanılmasına yönelik görüşlerinin incelenmesi amaçlanmıştır. Bu amaç doğrultusunda “Matematik Öğretiminde Dijital Öykü Kullanımı” başlığı altında alanyazın incelenerek görüşme soruları hazırlanmıştır. Görüşme soruları uzmanlara gönderilmeden 2 defa revize edilmiştir. Hazırlanan görüşme soruları katılımcılara uygulanmadan önce çalışmanın amacına yönelik olup olmadığının incelenmesi açısından Türkçe öğretimi, temel eğitimde matematik öğretimi, ilköğretimde matematik öğretimi ve bilgisayar ve öğretim teknolojileri eğitimi alanlarında uzman olan 4 akademisyene gönderilmiştir. Uzmanlar “dijital öyküleme kullanımı” terimi yerine “dijital öykü kullanımı” teriminin veya “matematik öğretimi” yerine “matematik öğretim süreci” ifadelerinin kullanılması gibi öneriler sunmuştur. Uzman görüşleri dikkate alınarak görüşme sorularında 3. kez değişiklikler yapılmıştır.

Veri Analizi Süreci

Nitel araştırmalarda veri analizi çeşitlilik, yaratıcılık ve esneklik kavramlarını temele aldığından dolayı araştırmacının, hali hazırda bulunan veri analiz yöntemlerini inceleyerek araştırma ve toplanan verilerin özelliklerini göz önüne alarak, araştırmasında kullanacağı veri analiz yöntemini geliştirmesi beklenir (Yıldırım & Şimşek, 2018). Olgubilim araştırmalarında veri analizi, tecrübeleri ve tecrübelere yüklenen anlamları tespit etmek amacıyla içerik analizi yapılarak verilerin kavramsallaştırılması ve olguyu açıklayabilecek temaların belirlenmesi gayreti vardır. Elde edilen sonuçlar betimlenerek bulgular belirlenen temalar ve kategoriler dahilinde açıklanarak yorumlanmaktadır (Yıldırım & Şimşek, 2018).

Strauss ve Corbin (1990) nitel araştırmalarda veri analiz sürecini “betimsel analiz” ve “içerik analizi” olmak üzere iki bölümde incelemiştir. İçerik analizi, betimsel analize göre daha karmaşıktır, derinlemesine analiz yapılmasına olanak sağlar ve öncesinde belirlenemeyen temaların ve alt temaların belirlenmesini sağlar. Bu çalışmada sınıf öğretmenlerinin matematik öğretim sürecinde dijital öykü kullanılmasına yönelik görüşlerinin incelenmesi için içerik analizi yapılmasına karar verilmiştir.

Strauss ve Corbin (1990) “Daha önceden belirlenmiş kavramlara göre yapılan kodlama”, “Verilerden çıkarılan kavramlara göre yapılan kodlama” ve “Genel bir çerçeve içinde yapılan kodlama” olmak üzere üç tür kodlama biçiminden söz etmektedir. Bu çalışma kapsamında ise “Verilerden çıkarılan

kavramlara göre yapılan kodlama” türü kullanılmıştır. Elde edilen veriler tümevarımcı bir analiz süreci sonucunda araştırmacılar tarafından belirli kavramlar çerçevesinde gruplanmış ve veri analizi sırasına kullanılacak kod kitapçığı elde edilmiştir.

Bulgular

Matematik Öğretiminde Dijital Öykünün Eğitsel Kullanımına Yönelik Bulgular

Dijital öykünün dersin farklı kısımlarında kullanılabileceğini belirtilmiş, yine matematik programında yer alan öğrenme alanlarına ait konuların öğretiminde kullanılabileceğinden bahsedilmiştir.

Dersin Aşamaları

Sınıf öğretmenlerinden bazıları matematik öğretiminde dijital öykülerin öğrencinin dikkatini derse toplamasını, kalıcı öğrenmeler gerçekleştirmesini ve soyut kavramların öğrenmeyi kolaylaştırmasını sağladığını düşündükleri için dersin dikkat çekme aşamasında kullanılmasının daha iyi olacağını vurgulamıştır.

Öğretim sürecine yönelik ders planlanırken gelişme bölümünde dersin amaçlarına, öğrenciye, okul ve sınıfın fiziki koşullarına uygun yöntem ve tekniklerle etkinlikler düzenlemek gerekir. Araştırmada sınıf öğretmenleri öğrencinin dijital öykü ile yaparak yaşayarak öğrenme fırsatı yakalayabileceğini ve eğitsel etkinlikleri kendisinin deneyimleyeceğini belirtmiş ve matematik öğretimi sürecinde dijital öykülerin gelişme bölümünde kullanılmasının gerekliliğini vurgulamışlardır. Sınıf öğretmenleri matematik öğretiminde dijital öykülerin öğrencinin birden fazla duyu organını işe koşması, motive olması, kavramları somutlaştırması gibi faydalarını vurgulayarak dijital öykünün konu anlatımı aşamasında kullanılması gerektiğini belirtmişlerdir.

Sınıf öğretmenlerinin birçoğu matematik öğretim süreci için dijital öykülerin öğretim hedeflerini dikkate alarak hazırlanması ile dikkati çekmek, ön bilgilerini harekete geçirmek, öğrencinin süreçte aktif olmasını sağlamak veya öğrenmelerini pekiştirmek amacıyla oluşturulabileceğini ifade etmiş ve dersin genelinde kullanılabileceğini vurgulamışlardır.

Matematik Konuları

Sayılar ve İşlemler: Sınıf öğretmenleri dijital öykülerin matematik öğretiminde sayılar ve işlemler öğrenme alanında yer alan kazanımların öğretilmesinin etkili olabileceğinden bahsetmiştir. Örneğin, sınıf öğretmenleri ilkökul matematik öğretiminde ritmik saymalar konusunun öğrenciler için soyut kaldığından ve bu nedenle dijital öyküler ile konunun somutlaştırılabileceğinden söz etmiştir.

Geometri: Sınıf öğretmenleri geometrik cisimler ve şekiller alt öğrenme alanında yer alan konuların dijital öyküler ile öğretilebileceği konusunda görüş bildirmiştir. Sınıf öğretmenleri öğrencilerin kalıcı öğrenme gerçekleştirebilmeyi, cisimleri ve şekilleri zihinlerinde canlandırmayı kolaylaştıracağı ve şekil özelliklerinin daha kolay öğretilabileceği için matematik öğretiminde geometrik cisimler ve şekiller konusunda dijital öykülerin kullanılabileceğini belirtmiştir.

Ölçme: Sınıf öğretmenleri ise matematik öğretiminde zaman ölçme alt öğrenme alanında dijital öykü kullanılabileceğini belirtmişlerdir. Sınıf öğretmenleri matematik öğretiminde zaman ölçme alt öğrenme alanında özellikle takvim ve saatler konusunda dijital öykü kullanılmasının önemini vurgulamıştır.

Bütün Konular: Sınıf öğretmenleri kendilerine yöneltilen ‘Size göre hangi matematik konuları dijital öyküler ile daha kolay öğretilir? Nedenleri ile açıklayınız.’ sorusuna çoğunlukla ilköğretim matematik öğretiminde yer alan tüm konuların dijital öyküler ile daha kolay öğretileceğini vurgulayarak yanıt vermiştir.

Sınıf Öğretmenlerinin Matematik Öğretiminde Dijital Öykü Kullanımına Yönelik İhtiyaçlarına İlişkin Bulgular

Sınıf öğretmenlerinin matematik öğretim sürecinde dijital öykü kullanımının yönelik ihtiyaçlarının öğrenci temelli ihtiyaçlar ve dijital öykü süreç temelli ihtiyaçlar başlıkları altında toplandığı görülmektedir.

Öğrenci Temelli İhtiyaçlar

Sınıf öğretmenlerinin matematik sürecinde dijital öykü kullanımında öğrencilere yönelik sıraladıkları ihtiyaçlar hazırbulunuşluk ve öğrenci etkileşimi ve bireysel farklılıkların dikkate alınması olarak ortaya çıkmaktadır. Sınıf öğretmenleri matematik öğretiminde dijital öykü kullanılırken ihtiyaç duyulacak durumlar için öğrencinin aile yaşantısının ve ön bilgilerinin önemini vurgulamışlardır.

Dijital Öykü Temelli İhtiyaçlar

Sınıf öğretmenleri matematik öğretim sürecinin dijital öyküler ile daha etkin bir şekilde yürütülebilmesi için, gerekli üç temel faktörün dijital öykülerin uygulanması için gerekli teknolojik donanım, materyal desteği ve öğretmen hazırbulunuşluğu olduğu görülmektedir. Örneğin, sınıf öğretmenleri matematik öğretim sürecinin dijital öyküler ile daha etkin bir şekilde yürütülebilmesi için teknolojik alt yapının iyi olmasına ihtiyaç duyulabileceğini belirtmişlerdir.

Matematik Öğretim Sürecinde Dijital Öykü Kullanımına Yönelik Önerilere İlişkin Bulgular

Sınıf öğretmenlerinin matematik öğretim sürecinde dijital öykünün hazırlanmasına ve kullanımına yönelik verdikleri öneriler sunduğu gözlenmiştir.

Dijital Öykü Hazırlama Sürecine Yönelik Öneriler

Sınıf öğretmenlerinin matematik öğretimi sırasında dijital öykülerin hazırlık sürecine yönelik önerileri ilgi çekici içerik, ihtiyaç ve isteklerin dikkate alınması ve dijital öykülerin çoğaltılması kategorileri altında gruplanmıştır. Sınıf öğretmenleri matematik öğretim sürecinde kullanılacak olan dijital öykülerin içeriğinin öğrencilerin seviyesine uygun, ilgilerini çekecek öğelerden oluşması gerektiği önerilerinde bulunmuştur.

Dijital Öykünün Uygulanmasına Yönelik Öneriler

Sınıf öğretmenlerinin matematik öğretim sürecinde dijital öyküleme yönteminin kullanılmasına yönelik önerileri materyallerle somutlaştırma ve aktif katılım başlıkları altında toplanmıştır. Sınıf öğretmenleri matematik öğretim sürecinde dijital öykülerin uygulamasına yönelik süreçte anlatılacak konunun materyallerle somutlaştırılması gerektiğini belirtmiştir.

Tartışma ve Sonuç

Çalışma kapsamında elde edilen veriler incelendiğinde öğretmenlerin dijital öyküleri matematik dersinin hangi aşamalarında ve konularında kullanabileceklerine yönelik görüş belirttikleri, matematik dersi sırasında dijital öyküleri uygularken öğrenci ve öykü temelli ihtiyaçlarının neler olduklarını

açıkladıkları ve matematik dersine yönelik dijital öykülerin hazırlanması ve ders içinde uygulanmasına yönelik önerilerini sundukları görülmektedir.

Sınıf öğretmenleri yeni konuya başladığında dijital öykülerin kullanılmasının öğrencilere konuyu somutlaştırma fırsatı sunacağını, öğrencinin dikkatini derse toplayarak öğrenmenin kalıcı olmasına ve konu ile ilgili bir ön fikir edinmesine yardım sağlayacağını vurgulamıştır. Elde edilen bulgular Göçen Kabaran ve diğerlerinin (2019) sınıf öğretmeni ve sınıf öğretmeni adaylarının dijital öykülerin öğretim sürecinde konuları somutlaştırma imkanı vererek derse dikkat çekmek amacı ile kullanılabileceğini belirttikleri araştırması ile örtüşmektedir. Sınıf öğretmenleri matematik öğretiminde dijital öykülerin öğrencinin yaparak yaşayarak sürece dahil edilmesini, yapılan çalışmalarını kendisinin deneyimlemesini ve bireysel çalışmalar yapmasını sağlayarak dersin gelişme bölümünde kullanılması gerektiğini de ifade etmektedir. Yine sınıf öğretmenleri matematik öğretiminde dijital öykülerin dersin bütün aşamalarında kullanılabileceğini vurgulamaktadır. Benzer bir şekilde Sadık (2008) araştırmasının sonucunda dijital öykünün öğretimde müfredattaki dersler için kullanılabileceğini belirtmektedir. Sınıf öğretmenlerinin hazırlanan dijital öyküdeki etkinliklerin ve olayların içeriğine göre güdüleme, dikkat çekme, ön bilgileri keşfetme ve derse motive etmek için giriş aşamasında; öğrencilerin öğrenmelerini pekiştirmek ve öğrencinin sürece dahil olması için gelişme aşamasında; konunun tekrar edilmesi ve öğrencilerin öğrenme eksikliklerini belirlemek için değerlendirme aşamasında kullanılabileceğini açıkladıkları görülmektedir.

Sınıf öğretmenleri sayılar ve işlemler öğrenme alanında yer alan ritmik sayılar, problemler, basamak kavramı, dört işlem ve kesirler konularının dijital öyküler ile etkin bir şekilde öğretilebileceğini ifade etmiştir. Ritmik sayılar, basamak kavramı, dört işlem ve kesirler konularının ilkökul seviyesindeki öğrenciler için soyut kaldığını, bu yüzden de dijital öyküler ile öğretilmesinin daha iyi olacağını belirtmişlerdir. Buna ek olarak sınıf öğretmenleri öğrencilerin okuma alışkanlıkları sınırlı olduğu ve okuduğunu anlamada zorlandıkları için problemler konusunu öğrenmede güçlük çektiklerini ve dijital öyküleme ile öğretimin öğrencilerin problem çözme becerilerine olumlu etkide bulunabileceğini belirttikleri görülmektedir. Benzer şekilde Dinçer ve Yılmaz' ın (2019) araştırmaları sonucunda dijital öykülerin öğrencilerin problem çözme becerisini geliştirdiği tespit edilmiştir. Sınıf öğretmenlerin konuyu görseller ile desteklemesi, öyküleştirilmesi, somutlaştırması ve öğrencinin günlük yaşamından örnekler sunmasından dolayı problemler konusunda dijital öykülerin kullanılmasının önemini vurgulamıştır. Ayrıca sınıf öğretmenlerinin matematik öğretiminde geometrik cisimler ve şekil özelliklerinin öğrenciler için soyut kaldığını, dijital öykülerin ise soyut kalan cisimleri somutlaştırma imkanı sağlayacağını düşündükleri için geometri öğrenme alanında yer alan geometrik cisimler ve şekiller alt öğrenme alanında bulunan konuların dijital öyküler ile öğretilmesinin kalıcı öğrenme sağlayacağını belirtmektedir. Göçen Kabaran ve diğerleri (2019) araştırmalarında öğretmen ve öğretmen adaylarının dijital öykülerin somut öğrenme imkanı vererek kazanımların amacına ulaştığını belirttikleri görülmektedir. Genel olarak dijital öykülerin ses ve görseller ile desteklenerek birden fazla duyu organına hitap etmesi, çalışmaya katılan öğretmenlerin de vurguladığı gibi soyut konuların öğrencinin zihninde canlandırmasını kolaylaştırarak somut öğrenme fırsatları sunmakta ve programda yer alan tüm konuların öğretiminde etkin olarak kullanılabilmesine imkan sağlamaktadır.

Sınıf öğretmenleri dijital öykü ile yürütülen matematik öğretimi esnasında internet, projeksiyon, bilgisayar, akıllı tahta gibi teknolojik araç-gereçlerin hazır olması ve ders öncesinde kullanılacak dijital alt yapının kontrol edilmesinin gerekliliğini vurgulamaktadır. Benzer şekilde Kutlucan ve diğerleri

(2019) arařtırmalarında ders ve deęerler öğretiminde dijital öykülerin daha etkili olabilmesi için okulların teknolojik alt yapısının iyileştirilmesi gerektiğini ifade etmektedir. Çalışmaya katılan sınıf öğretmenleri matematik öğretimi sırasında öğretmenlerin teknolojik alan yetkinliğine sahip olması, hazırlanan dijital öykünün içeriğine ve etkinliklere hakim olması gerektiğini belirtmektedir. Demirer (2013) dijital öykülerin öğrenme sürecinde olumlu sonuçlar verebilmesi için öğretmenlere yeterli alan bilgi ve becerilerinin kazandırılması gerektiğinden bahsetmekte ve bu görüşün araştırmanın bulguları ile örtüştüğü görülmektedir. Heo (2009) araştırmasında öğretmen yetiştirme programlarında öğretmen adaylarına öğretim esnasında kullanacakları yöntemlere ilişkin tecrübe edinmelerini sağlamak konusunda eğitim fakültelerinin önemini vurgulamaktadır. Benzer şekilde Daniels (2013) çalışmasında öğretmen adaylarının eğitimsel açıdan kendi alanlarında öğretmen özelliklerinin dijital öyküler ile geliştirilebileceğini belirtmiş ve Kim ve diğerleri (2021) ise dijital öykülerin öğretmenlerin mesleki gelişimleri için motive edici bir eğitsel araç olarak tanımlamıştır. Bu bağlamda öğretmen adaylarının dijital öykü alan yeterliğinin geliştirilmesi için dijital öyküler ile öğretimin, öğretmen programlarında yer alan öğretim derslerine entegre edilmesi ve öğretmenlerin dijital öyküler ile öğretim konusunda alan yeterliğinin sağlanması için hizmet içi eğitim fırsatları sunulması önerilebilir. Bunun yanında farklı ders ve konular için oluşturulmuş dijital öyküler, bu öykülerle ilişkili ders planları ve materyaller hazırlanarak Eğitim Bilişim Ağı [EBA] üzerinden öğretmenlere sunulabilir.

Sınıf öğretmenleri matematik öğretim sürecinde dijital öykülerin etkililiğinin artırılması için öğrencinin hazırbulunuşluğunun dikkate alınması gerektiğinden ve öğrencilerin dijital öykü ile yürütülen matematik öğretim sürecinde aktif kılınmasının öneminden söz etmektedir. Benzer şekilde öyküler ile yürütülen matematik öğretim sürecinde öğrencilerin bireysel farklılıklarının dikkate alındığında ve dijital öyküler öğrencinin seviyesine uygun şekilde düzenlendiğinde daha etkili bir öğretimin gerçekleştirilebileceğini vurgulamaktadır. Yine sınıf öğretmenlerinin matematik öğretimi için dijital öykülerin öğrencilerin yaşadığı çevre, yaşam koşulları, okul ve sınıfının yapısı ve arkadaş çevresi dikkate alınarak kişisel dijital öykülerin hazırlanabileceğinden söz ettikleri görülmektedir. Bhatt (2012) günlük yaşamda yer alan dijital materyallerin öğretim ortamına transfer edilmesini incelediği araştırmasında yaşam ve dersin birbiri ile ilişkilendirilmesine olanak sağladığını vurgulamıştır. Karakoyun (2014) araştırmasında öğretmen adaylarının dijital öykülerin öğretimde kullanılabilmesi için kişisel öyküler oluşturulabileceğine dair öneride bulduklarını tespit etmiştir. Yürük' ün (2015) araştırmasında öğretmenlerin oluşturdukları dijital öykü senaryolarında öğrencilerinin içinde yer almasının öğrencinin güdülenmesini sağladığı sonucuna ulaşılmıştır. Araştırmanın bulguları ve alanyazındaki arařtırmacıların görüşleri doğrultusunda öğretimde kullanılmak üzere oluşturulacak dijital öykülerin içeriğinin öğrencilerin yaşadığı çevrenin kültürel ve dil özelliklerinin, çevresinde bulunan yapıların ve güncel olayların dikkate alınarak hazırlanması gerektiği düşünülmektedir.

Arařtırmada sınıf öğretmenleri matematik öğretiminde dijital öykü hazırlama sürecine yönelik öyküde kullanılan karakterlerin gerçek kişilerden oluşmasını, öykünün içeriğinin öğrencilerin dikkatlerini çekecek çizgi film karakterlerinden oluşmasını, dijital öykülerin öğrencinin istek ve ihtiyaçları göz önünde bulundurularak hazırlanmasını önermektedir. Yürük (2015) araştırmasının sonucunda ilköğretim 5. sınıf öğrencileri için hazırlanan dijital öykülerin içeriğinin çizgi filme benzemesinden dolayı öğrencilerin dijital öykülere karşı olumlu görüş geliştirdiklerini belirtmiştir. Buradan yola çıkarak öğrencilerin gelişimsel özelliklerinin getirdiği ihtiyaçların, isteklerin ve ilgi alanlarının dikkate alınarak dijital öykülerin oluşturulması oldukça önemlidir.

Yılmaz ve diğerleri (2017) dijital öykü uygulamalarında birden fazla disiplinin bir arada kullanıldığını ve dijital öykülerin bireysel farklılıklara sahip öğrenciler için önemli olduğunu vurgulamıştır. Bunun yanında Matematik Dersi Öğretim Program'ında öğrencilerin bireysel ve kültürel farklılıklarının göz ardı edilmemesi ve öğrencilerin öğrenme farklılıklarını ortaya çıkaran uygun model ve yaklaşımların kullanılmasına dikkat edilmesi gerektiği vurgulanmaktadır (MEB, 2018). Sınıf öğretmenleri matematik öğretimine yönelik dijital öykü oluştururken dersin hangi aşamasında kullanılacak ise içeriğin ona göre düzenlenerek araç-gereç seçimine dikkat edilmesi gerektiğini ve öğrencilerin dil özellikleri, öğrenme düzeyleri, özel durumları gibi bireysel farklılıklarının dikkate alınarak dijital öykülerin oluşturulması gerektiğini önermektedir.

Araştırma sonucunda elde edilen veriler incelendiğinde sınıf öğretmenlerinin matematik öğretiminde dijital öykülerin uygulanması sırasında, öğrencinin soyut kavramları somut olarak algılayabilmesi için sürecin materyallerle desteklenmesi gerektiğini ifade etmektedir. Bunun yanında öğretmenler matematik öğretiminde dijital öykülerin uygulanması sürecinde öykünün içeriğine paralel olarak hazırlanan sınıf etkinliklerinin çoğaltılmasının etkili ve kalıcı öğrenmeye katkı sağlayacağını düşündükleri görülmektedir. Wang ve Zhan (2010) üniversite öğrencileri ile yaptıkları araştırmada dört farklı dersi dijital öykü ile işlemiş ve bunun sonucunda öğrencilerin konuyu daha iyi kavradıklarını, derse olan ilgi, istek ve güdülerinin arttığını vurgulamıştır. Dijital öykülerin izlenmesinin tek başına etkili öğretim için yeterli olmayacağı vurgulanmakta ve öğretmenin sınıf ortamını hazırlaması, dijital öykü sürecini etkinlikler ve materyaller ile desteklemesi ve söz konusu etkinliklerin günlük hayattan örnekler taşıması gerektiğini belirtilmektedir. (Yürük, 2015). Bu öneriler ve görüşler doğrultusunda öğretmenlerin dijital öykü oluşturmaya ve etkin kullanmasına, ders planı, etkinlik ve materyaller hazırlamasına yönelik hizmet içi eğitim sunulabilir.

Araştırmada sınıf öğretmenleri dijital öykü ile matematik öğretiminin daha kalıcı olabilmesi için öğrencinin de dijital öykü hazırlama sürecini deneyimlemesi önerisinde bulunmaktadır. Kutlucan ve diğerleri (2019) öğrencilerin sürece bire bir katıldıkları için öğrenmenin daha kalıcı olduğu sonucuna ulaşmıştır. Kotluk ve Kocakaya (2015) lise öğrencilerinin fizik öğretimine yönelik dijital öyküler hazırlamasının 21. yüzyıl becerilerinin gelişmesinde etkili olduğunu belirtmiştir. Benzer şekilde Küçükokka ve diğerlerinin (2022) çalışmalarında içinde bulunulan salgın hastalık sebebiyle teknolojinin öneminin arttığını vurgulayarak dijital becerilerin geliştirilmesi gerektiği hakkında öneride buldukları görülmektedir. Matematik Dersi Öğretim Programı incelendiğinde dijital yetkinliğin öğrencilerin teknolojik araç gereçlerin güvenli ve sorgulayarak kullanılmasını, bilgiye ulaşmayı sağlamasını ve internet ile sanal ortama katılarak iletişim becerilerinin gelişmesine katkı sağlamasını kapsadığı görülmektedir (MEB, 2018). Bu bilgiler doğrultusunda, öğrencilerin dijital öykü oluşturma sürecine dahil edilmesi, kalıcı öğrenme sağlanması, temel becerilerin geliştirilmesi, dijital ortamlarda bilginin hazırlanması, sunulması ve paylaşılması açısından fayda sağlayacaktır.

Öneriler

Matematik öğretim sürecinde dijital öykünün kullanılmasına ilişkin ortaya çıkan bulgular ve sonuçlar dikkate alınarak dijital öykünün uygulama sürecine ve gelecek çalışmalar için araştırmacılara yönelik öneriler olmak üzere iki bölümde incelenmiştir.

Dijital Öykünün Uygulama Sürecine Yönelik Öneriler

- Araştırmada öğretmenler matematik öğretim sürecinde dijital öykülerin içeriğinde öğrencilerin günlük yaşantısından örnekler olmamasından dolayı öğrencilerin öğrenmelerini yaşamlarına aktaramadıklarını belirttikleri görülmektedir. Bu nedenle dijital öyküler oluşturulurken öğrencinin yaşamından kesitler içermesi önerilmektedir.
- Araştırmada öğretmenlerin dijital öykülerin her konu için hazırlanması gerektiğini, diğer derslere de entegre edilebileceğini ve öğretmenlere kaynak olması adına yaygınlaştırılması gerektiğini önerdikleri görülmektedir. Bu doğrultuda çoğu ders, konu ve öğrenci seviyesi için hazırlanmış dijital öykülerin, ders planlarının ve materyallerin Eğitim Bilişim Ağı [EBA] gibi çevrim içi bir platformda paylaşılması ve yaygınlaştırılması önerilebilir.

Gelecek Çalışmalar İçin Araştırmacılara Yönelik Öneriler

- Gelecek çalışmalar için ilkokul 1, 2, 3 ve 4. sınıf öğrencileri ile öğretmenlerin matematik öğretiminde dijital öykü oluşturma sürecine yönelik beceri ve görüşlerinin incelenmesi önerilebilir.
- Gelecek çalışmalarda dijital öykü temel alınarak planlanan ve uygulanan matematik derslerinin ilkokul 1, 2, 3 ve 4. sınıf öğrencilerinin özellikle problemler, basamak kavramı, geometrik cisimler ve kesirler konularına ilişkin akademik başarıları üzerindeki etkisinin incelenmesi önerilebilir.



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Team Innovativeness, Teachers' Professional Practices, and Teachers' Instructional Practices: Testing a Mediation Model

ib Ramazan Atasoy, Assoc. Prof Dr., Corresponding Author
Harran University, Türkiye
atasoyramazan@harran.edu.tr
Orcid ID: 0000-0002-9198-074X

ib Mehmet Tufan Yalçın, Dr.
Çankırı Karatekin University, Türkiye
mehmettufany@karatekin.edu.tr
Orcid ID:0000-0001-8386-2308

Article Type: Research Article

Received Date: 27.03.2023

Accepted Date: 20.11.2023

Published Date: 30.11.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: 10.29329/tayjournal.2023.610.11

Citation: Atasoy, R., & Yalçın, M. T. (2023). Team innovativeness, teachers' professional practices, and teachers' instructional practices: testing a mediation model. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 972-997.

Abstract

Teachers' teaching behaviors are often at the center of reflections on how educational reforms and school improvement efforts affect school outcomes. For this reason, studies by educational scholars need to determine that the variables affecting teachers' classroom instructional practices remain up to date. In this study, we aimed to scrutinize team innovativeness's effect on teachers' instructional practices through the mediating power of the teachers' professional practices (exchange and coordination among teachers-professional collaboration in lessons among teachers). In this study, data collected from 3083 teachers working in secondary schools participating in the International Teaching and Learning Survey (TALIS), conducted by in 2018, were used. Confirmatory factor analysis and structural equation modeling were used to examine the relationship between teachers' team innovativeness, professional practices, and instructional practice scores obtained from the data. The results revealed that team innovativeness supports teachers' professional practices, and such professional practices have a small impact on teachers' instructional practices. Another result showed that teachers' professional practices mediated the relationship between team innovativeness and teachers' instructional practices. This study establishes a link between teachers' instructional practices and team innovativeness, which has not been extensively researched in countries with a centralized and rigidly bureaucratic educational system. In this context, it is recommended that policymakers and school principals develop practices to support teachers' team innovativeness.

Keywords: Team innovativeness, teachers' professional practices, teachers' instructional practices, professional collaboration, exchange and coordination.

Introduction

Many contemporary education systems have encouraged their faculty and staff to focus on innovativeness and creativity, prioritizing team-based work systems to increase their schools' effectiveness and their quality of education, create the synergy for integrating their teachers' knowledge, perfect the students' critical, reflexive thinking and problem-solving skills, and improve their teachers' instructional practices, as well as the schools' capacity and intellectual capital (Doronin et al., 2020; Mohrman et al., 1995; Santos et al., 2019; Van Dijk et al., 2016). Innovativeness, which is on the educational reforms agenda and at the center of all educational policies, is intertwined with their teachers' professional and instructional practices (Vieluf et al., 2012). Including knowledge sharing, flexibility, openness to change, and willingness to accept new ideas and different ways of solutions, team innovativeness is becoming a steadily more indispensable qualification and capacity for learning organizations and innovative schools to cope with the complexity of today's knowledge society and global competitive environments (Liu & Phillips, 2011). Thus, innovative approaches towards today's teaching professional practices, including changes in educators' traditional methods, have become central tenets in understanding the management of instructional process and meeting diverse educational and instructional challenges in 21st-century skills contexts (Nguyen et al., 2021). Therefore, supporting innovative mindsets in school settings and collaborative learning culture could positively trigger teachers' instructional practices and could drive more effective instructional environments with the appropriate changes in school practices. However, the question of whether or to what extent team innovativeness has an impact on teachers' instructional practices and teachers' professional practices has not previously been modeled. In this sense, this study highlights that highly innovative team performance is crucial in school improvement to get a deeper understanding, foster team learning, and create a team mental model in school settings (Widmann & Mulder, 2020).

Even though educational administrations, scholars, and practitioners have acknowledged the critical role in the formation of effective teaching that team innovativeness plays, namely, creating an effective teaching environment and maintaining school effectiveness, has remained less clear (Buske, 2018; Huber & Skedsmo, 2016; Nguyen et al., 2021). Surprisingly few empirical studies have concomitantly scrutinized both the antecedents of teachers' instructional practices as well as the mediating role of teachers' professional practices within this broader context (Bellibaş, 2023; Loogma et al., 2012). Evidence shows that although some teachers share the same school environment and a common vision, they tend to interact relatively less often with each other to improve their skills and encourage socialization processes. The way to reverse this situation is to enhance innovative teaching practices by strengthening team innovativeness (Anderson & West, 1998). Blömeke and friends (2021) have reported that innovative school habitats are associated with more collaboration, more frequency in innovative teaching practices among teachers, and activation of higher cognitive capacity in students. This finding might demonstrate that team innovativeness has become a key criterion for quality teaching in the long-term and sustainable school systems regarding their adaptability to educational, techno-pedagogical, and societal changes.

All school systems demand that their schools meet their expectations, improve school performance and effectiveness, and boost the quality of education, promoting positive changes for improvement and sustainable development (Nguyen et al., 2021; Serdyukov, 2017). In any teaching process in a school setting, it is challenging for a single teacher to develop a new idea, carry out an innovative task, or improve new teaching techniques and materials. Only by creating an innovative team whose members have a collaborative vision and have a sharing culture are those objectives achievable (Doronin et al., 2020; Pearce & Ensley, 2004; Swan et al., 1999).

Türkiye, which operates on a central educational system affiliated with the Ministry of National Education, is a country that maintains a strict bureaucratic management structure. Although many reforms and policy initiatives have been made in the Turkish education system in the last 20 years in the context of quality in education, there is evidence that it is difficult to implement innovative practices in such management structures (Bellibaş, 2023; Çoban et al., 2023; Özdemir, 2020). When they do, their impact is limited. For this reason, it is crucial to reveal the effects of team innovativeness on teachers' professional development and instructional practices in countries like Türkiye to understand its role in bettering their schools' performance.

This research is based on the hypotheses that a work environment dominated by team innovativeness and that the power of a collaborative culture can trigger more willingness in the teachers to improve their instructional practices (Bellibaş, 2023; Buyukoze et al., 2022; Özdemir, 2020; Özdemir et al., 2023). We investigated the relationship among team innovativeness and to what extent an innovative climate impacts teachers' instructional and professional practices, the key outcomes, including sub-contextual effects, such as exchange, coordination, and professional practices, basing our research on the teachers' perceptions. This study is essential because educational technology applications, such as adopting innovation in the instructional process, require a theoretical and empirical foundation and evidence based on purposeful, instructional, pedagogical, and systemic research.

It is also one of the most critical areas to understand, with contextual relationships among the cost-and-time efficiency of implementing such programs, the benefits of the teachers' learning team

innovativeness, and improved instructional and professional practices. Assuming that teachers open to an innovative mindset would respond positively to new ideas, this study can reveal how team innovativeness could support teachers' instructional practices through the mediating effect of the teachers' professional practices and how innovative teachers and schools could contribute to desirable outcomes.

Conceptual Framework

This study, based on the theoretical models of teacher change and motivational contexts, proposes that team innovativeness might trigger the process of teachers' professional learning and instructional practices (Clarke & Hollingsworth, 2002; Guskey, 1985, 1986; Timperley et al., 2007). This study aims to evidence and conceptualize two mediating impacts of teachers' professional practices (exchange-co-ordination among teachers and professional collaborating in lesson among teachers) on the teachers' instructional practices. Thus, the study focuses on the direct and indirect relationships among the variables employed in the following model (see Figure 1).

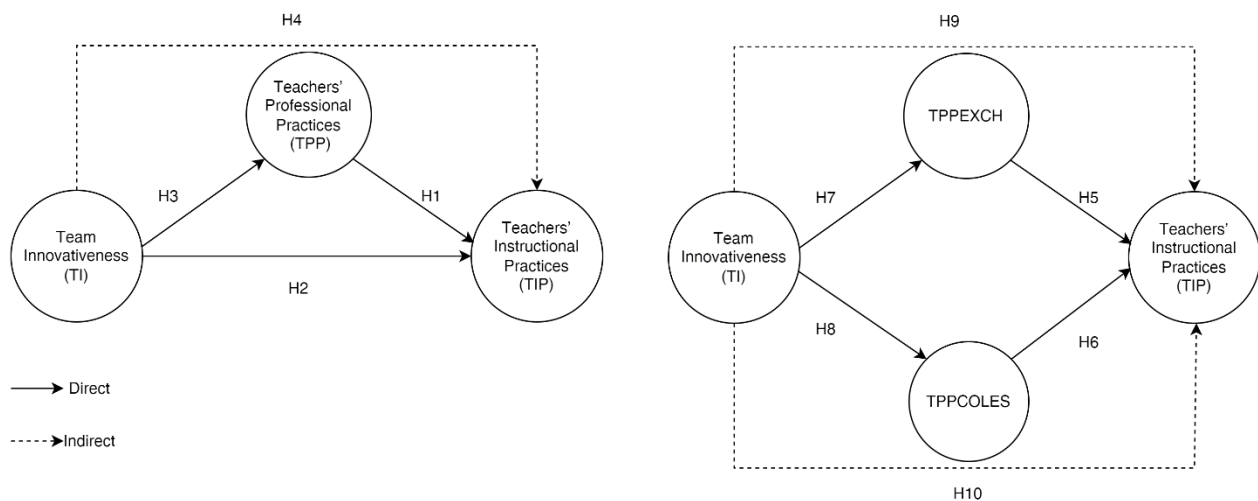


Figure 1. Theoretical framework

Inspired by the current research, we can reveal—at least to some extent—the effects of team innovativeness (TI) on teachers' professional practices (TPP) and teachers' instructional practices (TIP) as school outcomes. On the other hand, the international and Turkish education management literature broadly considers team innovation a valid output (Buske, 2018; Buyukgoze et al., 2022). In this context, the present study has created an original model for the field to consider TI as an independent variable and examine its effects on TIP and TPP. In light of existing research, our study attends that when teachers exhibit innovative team behaviors, they develop a stronger willingness in their capability and openness to change regarding their professional and instructional practices. Such innovative behavior in a team setting can assist teachers in ameliorating their instructional methods directly and indirectly by helping them develop better professional methods (see Figures 1 and 2). In the following part, we discuss our research concepts in a conceptual framework, along with their theoretical roots, and propose hypotheses concerning the relationships among them.

Team Innovativeness (TI)

Team innovativeness exhibiting orthogonal attributes, such as utility and novelty (Frederiksen and Knudsen, 2017), is a complex and multi-faceted concept regarding linear or nonlinear, conjunctive progressions of convergent, parallel, and diverse activities (Kline, 1985). Despite the lack of total clarity in the definition of “innovativeness,” we retained previous researchers’ definitions, conceptualizing team innovativeness as teacher receptivity, openness, extraversion, willingness to adopt, readiness for promoting and realizing change, teachers’ self-initiated process of generating, a specific context with the intention to create an added value, and critical factors influencing teachers’ innovative propellent power (Buske, 2018; Fullan, 2001; Gopalakrishnan & Damanpour, 1997; Loogma et al., 2012; McGeown, 1980; Thurlings et al., 2015; Vieluf et al., 2012). The Convention on the Organisation for Economic Co-operation and Development [OECD] (2019a) also defines innovation in a school environment as an institution receptive to new ideas. This perspective also reflects collective characteristics regarding teachers in a school context (Ainley & Carstens, 2018). Thus, teachers’ innovative behavior can be defined as an enhancing process in which their colleagues generate, create, develop, apply, promote, realize, and modify ideas to benefit their professional and instructional practices.

Although the concept’s intellectual and mental formation and development express an emotional and psychological context, innovativeness is more concrete regarding its outputs. Previous studies have centered more on the impactful influence of the structural dimension of organizations, such as technology, structure, and processes, rather than the soft behavioral dimensions associated with leading people and the innovative climate within relationships where the multidimensional concept of innovativeness emerges (Ghosh & Srivastava, 2021; Kyrgidou & Spyropoulou, 2013).

Teachers’ innovative practices and willingness to seek out new experiences are prerequisite conditions for change in educational systems (Rogers, 2003). When considering the contextual relationship between innovativeness and teaching, research shows that innovative teaching practices assist in promoting students’ acquisition of cross-curricular, broader, and more complex skills. These 21st-century skills present new perspectives to students and encompass creative thinking, more efficient working and problem-solving strategies, more digital literacy, and better ways of coping with life’s challenges (Binkley et al., 2012). At least, teachers who prioritize innovative and creative thinking, who are more likely to integrate digital technologies into their teaching, and who cross traditional subject outliers’ borders could compensate for educational and social needs by developing these skills in their students, improving their professional potential (Dumont & Istance, 2010). Evidence shows that integrating digital technologies into teachers’ professional and instructional practices has a motivational context: a particular viewpoint and specific attitude toward technological innovativeness (Ainley & Carstens, 2018). In previous research, evidence has revealed that customer and learning orientation tends to increase innovativeness. Similarly, innovativeness as a mediating role has improved positive performance from a marketing perspective (Hult et al., 2004; Jun et al., 2021). Unlike this research, previous studies that considered team innovativeness an output have revealed that openness and extraversion (Hanfstingl and Mayr, 2007), ICT use (Admiraal et al., 2017; Reyes Jr et al., 2017), high self-efficacy (Tschannen-Moran and Hoy, 2007) teacher autonomy (Kwakman, 2003), school support (Loogma et al., 2012), and school culture (Jurasaitė-Harbison and Rex, 2010; Opfer and Pedder, 2011) are connected to improved teachers’ professional learning activities, performance in the classroom (as perceived by the teachers), and professional learning. These conditions, thus, encourage team

innovativeness (Clarke & Hollingsworth, 2002; Guskey, 1986; Timperley et al., 2007). Despite the perceived role of team innovativeness in enhancing positive school outcomes, knowledge remains limited and offers little insight into school improvement efforts regarding the enhancement of teachers' professional and instructional practices. Thus, the trigger-and-snowball effect of team innovativeness could be a significant determinant of teachers' professional and instructional practices. Based on the relevant findings, we expect that team innovativeness positively impacts teachers' professional and instructional practices (H2, H3, H4, H7, H8, H9, H10).

Teachers' Professional Practices (TPP)

Professional activities in the school environment and workplace conditions that foster a deep understanding of collaboration have been the focus of interest for educational policy and school improvements in the last decades. Teachers' professional practices include various professional activities, such as complex forms of collaboration in teaching activities and school decision-making.

Several researchers have agreed that teachers' professional practices are more effective when they are collaborative, sustained, subject-specific, practice-oriented, and open to outside expertise (Cordingley et al., 2015; Timperley et al., 2007). Scholars pointed out that collaboration in teacher professional development could be linked with new ideas and challenging existing ones (OECD, 2015). Research has also revealed that collaboration among teachers is related to teachers' work, teaching instructional practices, learning, decision-making, job satisfaction, and school culture (Desimone, 2009; Goddard et al., 2007; Timperley et al., 2007). In line with limited research, this paper examines the proposition that openness to new ideas and thoughts elicits fresh input from other colleagues. This openness could support instructional practices and team innovativeness that teachers need to provide new challenges and input. In line with the limited literature on the relationship between teachers' professional and instructional practices, we expect (H1, H5, H6) that teachers' professional practices will positively impact teachers' instructional practices.

Teachers' Instructional Practices (CIP)

Despite educational reforms in many education systems, teacher innovation remains an unclear subject in which effective instructional practice attempts could improve student achievement (Bryk et al., 2010). However, based on prior research in instructional management (Ainley and Carstens, 2018) and the theoretical framework of international assessments, educational administration researchers, educational policymakers, and practitioners have highlighted the need to focus on teachers' instructional and professional practices to improve the quality of student learning outcomes (Baumert et al., 2010; Marsh et al., 2012; Wagner et al., 2016). Hattie (2009) has reported that teachers' instructional practices are critical to providing background evidence because efficient instructional processes make the strongest direct school-based impact on school outcomes and the most powerful predictor of student learning.

On the TALIS theoretical framework, researchers have reported on TALIS that teachers' instructional practices consist of three components (clarity of instruction, cognitive activation, and classroom management) that impact student learning outcomes (Ainley & Carstens, 2018; Förtsch et al., 2017; Seidel et al., 2005; Wang & Degol, 2016). These three components shape the main framework of effective and successful teaching. Therefore, successful teachers present teaching practices clearly, concentrate students on cognitive tasks, and maintain classroom management successfully, providing a

positive classroom climate. Cognitive activation refers to the mental activations that support students to think critically and evaluate and apply knowledge, reveal the connections among real-life problems, and complete complex tasks in the lesson through instructional strategies, methods, and techniques used to develop students' conceptual understanding (Decristan et al., 2015; Lipowsky et al., 2009; Özden & Atasoy, 2021). In this context, teachers must provide a classroom atmosphere where students can express themselves, defend their thoughts, and work collaboratively. Clarity of instruction characterizes the teachers' ability to express themselves clearly, provide comprehensive instruction and learning goals, structure knowledge logically, inform students about their objectives, provide details and summarize the subject, express messages with clarity and relevance, and guide their students in learning (Civikly, 1992; Hospel & Galand, 2016). The classroom management component comprises the classroom climate, calming disruptive students' behavior, following classroom rules, effective use of time during lessons, socialization of the students, and listening to instructions (Marsh et al., 2012; van Tartwijk & Hammerness, 2011). This study argues that relevant teachers' instructional practices can be ameliorated when the teachers' team innovative behavior triggers their professional development. Based on the findings and literature, we expect TI to positively impact TIP through TPP (TPPCOLES and TPPEXCH).

Method

In this section, we have included information about the sample of teachers participating in the study, the data collection tools, and the method of analysis we used. In addition, this research follows a cross-sectional quantitative research model.

Sample and Data Collection

We utilized the data used to test the hypotheses in this study from teachers who participated in the Teaching and Learning International Survey (TALIS) conducted by the OECD. Forty-eight countries, the OECD Secretariat, the European Commission, and a consortium carried out the implementation process within TALIS 2018. The TALIS 2018 sample selection was carried out under the supervision of the relevant consortium. It was based on the stratified sampling method determined by the countries in accordance with the sample selection standards. The consortium sampling team requested participating countries to prepare current and complete school lists consisting of the school sampling frame and sampling of principals and teachers for each selected school as defined and described on the sampling standards.

The TALIS sampling consortium referenced the minimum school participation rate at 75% after the second replacement. The technical sampling standard obliged and encouraged all participating countries to exceed participation rates of at least 50% of the schools after excluding non-responses and people whose answers exhibited bias. The percentage of Turkish teachers participating in the TALIS 2018 technical report was 99%. Therefore, there is no risk of non-response bias for the responses from Turkish teachers (OECD, 2019b, p. 480).

The questionnaire consisted of six parts, apart from two sections that collected information about principals and schools. The 2018-2019 academic year research population in Türkiye included 33,498 secondary schools (official: 18,935; private: 2,060) and high schools (official: 8,914; private: 3,589). Türkiye participated in the TALIS 2018 study with 971 schools and more than 19,000 teachers at all levels. However, in this study, we focused only on the data collected from lower secondary schools

at ISCED Level 2. Accordingly, Türkiye participated in TALIS 2018 with a sample of 3,952 teachers from 196 schools using a two-stage stratified sampling method selected by the OECD at ISCED 2 (5th grade–8th grade). In TALIS 2018 survey, 200 schools were randomly selected from the schools for the first stratum. In the second stratum, 20 teachers were randomly selected from the teacher lists at relevant schools according to the technical sampling standards (OECD, 2019). However, the answers collected from 869 teachers were not taken into account due to missing values. For this reason, we selected the answers given by 3,083 teachers to analyze in this study.

When the demographic characteristics of the teachers participating in the research were examined (See Table 1), the data revealed that 1,793 of the 3,083 teachers were female, and 1,290 were male. Considering the age distribution of these teachers, they are predominantly in the 30-39 age group (47.5%). Regarding their education level, a very high proportion of teachers (2829; 91.8%) have a bachelor's degree. All these features are summarized in Table 1.

Table 1. *Descriptive statistics of the sample*

Variables/Categories	f	Percent	Cum
Gender			
Male	1,290	41,8	41,8
Female	1,793	58,2	100,0
Teacher Age Groups			
Under 25	45	1,5	1,5
25-29	572	18,6	20,0
30-39	1,464	47,5	67,5
40-49	742	24,1	91,6
50-59	216	7,0	98,6
60 and above	44	1,4	100,0
Highest Level of Formal Education Completed			
<ISCED 2011 Level 5>	21	,7	,7
<ISCED 2011 Level 6>	2,829	91,8	92,4
<ISCED 2011 Level 7>	226	7,3	99,8
<ISCED 2011 Level 8>	7	,2	100,0

Variables and Measures

The primary dependent variable of this study is the teachers' teaching practices (TIP). The items in this variable were taken from the TALIS 2018 research. In this scale, teachers were asked to report by using a 4-point Likert scale (1= never or almost never, 4=always) how often they performed 12 specific classroom activities related to these variables. As a result of the TIP factor analysis, these activities consisted of 3 dimensions (clarity of instruction, cognitive activation, and classroom management), each of which contained 4 items. Some of the sample items are as follows: "I present a summary of recently learned content" (TT3G42A), "I present tasks for which there is no obvious solution" (TT3G42E), and "I tell students to follow classroom rules" (TT3G42I). We can say that the internal consistency values of the teachers' teaching practices scale (Cronbach's alpha, $\alpha = 0.810$) are reasonably reliable (see Table 2, Table 3).

The mediating variable is the teachers' professional practices (TPP). To create the variable in the TALIS survey, teachers are asked to indicate, on average, how often they do certain behaviors in their school. A TPP scale consisting of eight items was used to measure the responses, using a Likert-type scale ranging between 1 and 6 points [never (1), once a year or less (2), 2-4 times a year (3), 5-10 times a year (4), 1-3 times a month (5) and once a week or more (6)]. A confirmatory factor analysis of related

items shows that these are clustered in two dimensions: exchange and coordination among teachers (TPPEXCH) and professional collaboration in lessons among teachers (TPPCOLES). Some of the sample items are as follows: “Exchange or develop teaching materials with colleagues” (TT3G33D) and “Teach jointly as a team in the same class” (TT3G33A). The internal consistency values of the teachers’ professional practices scale (Cronbach’s alpha, $\alpha = 0.839$) are reasonably reliable (see Table 2, Table 3).

The independent variable of this study is TI, which expresses the innovative approaches and practices of the teachers’ colleagues. In TALIS 2018, the teachers were asked to indicate how much they agreed with the statements given, considering other colleagues at their school. The TI scale is a one-dimensional, four-point Likert type (1=strongly disagree, 4= strongly agree) and consists of 4 items. Some of the sample items are as follows: “Most teachers in this school strive to develop new ideas for teaching and learning” (TT3G32A), and “Most teachers in this school are open to change.” (TT3G32B). According to the DFA results of the scales we used in our research and the TALIS 2018 report, we observed that the internal consistency and model fit indices are at an acceptable level (see Table 2).

Table 2. *The fit indices and reliability results of the scales*

Scales	α	χ^2 (df)	CFI	TLI	RMSEA	SRMR
1. TI	,949	98,073 (2)	,992	,977	,125	,009
2. TPP	,839	559,955(18)	,943	,911	,099	,033
3. TPPCOLES	,722	5,113(2)	,999	,996	,022	,007
4. TPPEXCH	,804	6,418 (2)	,999	,997	,027	,005
5. TIP	,810	480,131 (51)	,968	,958	,061	,038

Notes: TI = team innovativeness; TPP = teacher professional practice; TIP = teacher instruction practice; TPPCOLES = professional collaboration in lessons among teachers; TPPEXCH = exchange and co-ordination among teachers; n = 3,083 teachers.

Analytical Strategy

First, we analyzed the means, standard deviations, scale reliability (Cronbach’s alpha), and bivariate correlations using IBM SPSS 25. In the next step and before analyzing the data set, we examined the frequency values, extreme values, multicollinearity problems, and Mahalanobis distances. After that, we checked the extent of the data’s suitability for the structural equation model. Finally, we used structural equation modeling through Mplus 8.3 (Muthén and Muthén, 2019, p. 55) to analyze the hypotheses presented in the theoretical framework. In this context, we explored the direct and indirect effects of team innovativeness on the teachers’ instructional practices and the mediation effect of the teachers’ professional practices. In the second model, we tested the mediation effect of each dimension of the TPP to see which effect is the highest. In the data analysis, we used the bootstrap samples method (2,000) proposed by Preacher and Hayes (2008) to evaluate the effect size and to obtain the confidence intervals and significance levels of the paths between the variables. In addition, all estimations between the variables in these research models are presented by converting them to standardized values.

Ethical Permits of Research

The ethical permit was not obtained because TALIS 2018 data was used in this study. Additionally, we declare that we comply with all the rules stated in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" in this study.

Findings

In this section, first, we reported the descriptive and Pearson correlation analysis results (Table 3). According to these results, mean values are relatively high for the variables [TPP: 3.16; TPP: 3.16; TIP: 2.94]. When we examined the sub-dimensions of the TPP variable, we observed that the mean of TPPCOLES (2.65) is considerably lower than the mean of TPPEXCH (3.68). All the correlations among variables in the measurement models are significant at the 0.01 level. The correlation between TI and TPP ($r = .314$) is greater than TI and TIP ($r = .142$), and TPP and TIP ($r = .290$). In the next phase of the research, we calculated the results for each measurement model in which the relationship between TI and TIP was mediated by the TPP and its two sub-dimensions [TPPCOLES and TPPEXCH] (Figure 2).

We used χ^2/df (chi-square/degrees of freedom), comparative fit index (CFI), Tucker-Lewis index (TLI), standardized root mean square residual (SRMR), and root mean square error (RMSEA) of the approach to interpret the results of model fit values. Accordingly, for Model 1 ($\chi^2 = 2230.310$, $df = 243$, $RMSEA = .052$, $CFI = .95$, $TLI = .94$, $SRMR = .042$) and for Model 2 ($\chi^2 = 3553.015$, $df = 243$, $RMSEA = .066$, $CFI = .91$, $TLI = .90$, $SRMR = .088$) were obtained. These results show that the fit indices are good except for the χ^2/df value. Since it is sensitive to a large sample to evaluate the χ^2/df value, this value can be ignored in the measurement models (Fan, Thompson, & Wang, 1999).

The results of the measurement models (Figure 2) indicate positive and statistically significant relationships among the variables in the theoretical framework (Table 4). This relationship shows that TI has a small but statistically significant direct effect on TIP ($\beta = .06$, $p < .05$) and confirms H2. The direction of the effect found is positive, meaning that teachers who exhibit team innovativeness behaviors develop better teaching practices, on average, than those who do not. In addition, the SEM results show a statistically significant and moderate correlation ($\beta = .37$, $p < 0.001$) between TI and TPP, confirming H3. Similarly, it means that teachers who exhibit team innovation report better professional practice on average. Another result, there is a moderate level and positive relationship between TIP and TPP ($\beta = .47$, $p < .001$), confirming H1. According to this finding, teachers with high professional development practices state that they develop better teaching practices than those with low professional development.

Table 3. Descriptive statistics and Pearson correlations among variables

Variable	Mean	SD	TI	TPP	TPPCOLES	TPPEXCH	TIP
1. TI	3,00	,72	1	,314**	,256**	,305**	,142**
2. TPP	3,16	1,04		1	,890**	,900**	,290**
3. TPPCOLES	2,65	1,14			1	,602**	264**
4. TPPEXCH	3,68	1,19				1	,256**
5. TIP	2,94	,42					1

Notes: TI = team innovativeness; TPP = teacher professional practice; TIP = teacher instruction practice; TPPCOLES = professional collaboration in lessons among teachers; TPPEXCH = exchange and co-ordination among teachers; $n = 3,083$ teachers.

The results of the SEM models, in which the direct and indirect relationships within the theoretical framework of the study are included, are presented in table 4 and table 5. These results show a weak but positive and statistically significant indirect relationship mediated by TPP between TI and TIP ($\beta = .17$, $p < .001$). This relationship indicates that the teachers' display of team innovation behaviors is linked with a small improvement in the teachers' professional practice. Besides, a moderate increase in the teachers' professional practice is seen to be linked with only a small improvement in TIP. The overall

effect of TI on TIP was slight but positive and statistically significant ($\beta = .23, p < 0.001$). The independent and mediating variables (TI, TPP) together explain 36% of the total variation in TIP ($R^2 = .361$).

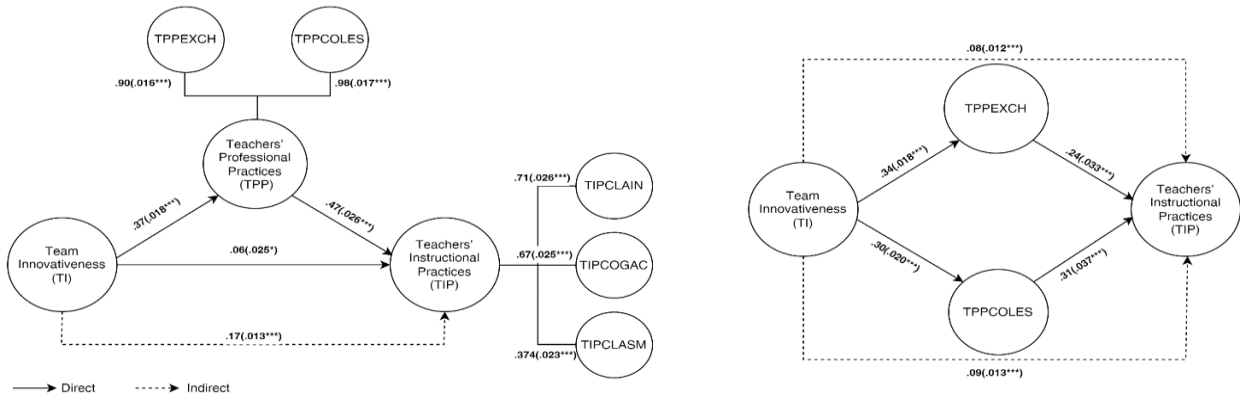


Figure 2. Models' results

Table 4. The results for the standardized effects of variables in the conceptual model 1

Construct	Product of coefficients			95% bootstrap CI		
	Estimate	SE	Z	Lower	Upper	Two-tailed (p)
Standardized total effects						
TI → TIP	.23	.024	9.657	.181	.273	***
Standardized total indirect effect						
TI → TIP	.17	.013	13.151	.146	.197	***
Standardized specific indirect (TI → TPP → TIP)						
TI → TIP	.17	.013	13.151	.146	.197	***
Standardized Direct						
TI → TIP	.06	.025	2.217	.006	.105	*

Notes: TI = team innovativeness; TPP = teacher professional practice; TIP = teacher instructional practice; n = 3,083 teachers. Based on 2,000 bootstrapped samples. Standardized indirect effects = 95% confidence interval * $p < 0.05$, *** $p < .001$

Table 5. The results for the standardized effects of variables in the conceptual model 2

Construct	Product of coefficients			95% bootstrap CI		
	Estimate	SE	Z	Lower	Upper	Two-tailed (p)
Standardized total effects						
TI → TIP	.23	.024	9.970	.190	.284	***
Standardized total indirect effect						
TI → TIP	.17	.013	13.668	.152	.203	***
Standardized specific indirect (TI → TPPCOLES → TIP)						
TI → TIP	.09	.013	7.186	.069	.120	***
Standardized specific indirect (TI → TPPEXCH → TIP)						
TI → TIP	.08	.012	6.790	.059	.107	***
Standardized Direct						
TI → TIP	.06	.026	2.305	.009	.110	*
TI → TPPCOLES	.30	.020	15.079	.264	.342	***
TI → TPPEXCH	.34	.018	19.208	.308	.378	***

Notes: TI = team innovativeness; TPP = teacher professional practice; TIP = teacher instruction practice; TPPCOLES = professional collaboration in lessons among teachers; TPPEXCH = exchange and co-ordination among * $p < 0.05$, *** $p < .001$.

Another SEM model was constructed to show the extent to which each component of TPP [TPPCOLES and TPPEXCH] mediates the relationship between TI and TIP. The results indicate that TPPCOLES ($\beta = .31, p < .001$) and TPPEXCH ($\beta = .24, p < .001$) have a moderately significant relationship with TIP. This relationship indicates that if the teachers cooperate, exchange ideas, and coordinate when planning and teaching lessons, their instructional practices could improve (Table 5). This finding confirmed H5 and H6. In addition, TI correlates positively and significantly with both dimensions of TPP [TPPCOLES ($\beta = .30, p < .001$) and TPPEXCH ($\beta = .34, p < .001$)]. These findings confirmed H7 and H8 hypotheses. This finding means that, in general, teachers with innovative school environments have slightly more professional collaboration and coordination with their colleagues on lessons than those who do not. However, the findings show that TPPCOLES ($\beta = .09, p < .001$) and TPPEXCH ($\beta = .08, p < .001$) have a mediating role in terms of indirect relationships in both sub-dimensions. Given this slight effect identified in these findings, school environments with team innovation are associated with a slight improvement in teachers' professional development. This increase is associated with a slight increase in the teachers' teaching practices. Accordingly, H9 and H10 were confirmed in our study.

Discussion and Conclusion

This section of the paper discusses the findings regarding the variables, our analysis, the study's limitations, and our policy, practice, and research recommendations. This study revealed possible relationships among variables and components. Therefore, we created two models which assume that TI and TPP can be considered interdependent and effective variables in teachers' teaching practices. The results revealed that teachers' professional practices were critical in improving teachers' instructional practices. More specifically, a teacher's willingness to engage in professional development programs that promote more effective teaching and facilitate learning is generally associated with better teaching practices. This finding confirms the theory that teachers' participation in professional practices that improve their teaching skills can influence their classroom actions and practices (Cordingley et al., 2015; Timperley et al., 2007). The result also supports the positive relationship between professional development and teaching practice, as demonstrated by more empirical studies (Desimone, 2009; Goddard et al., 2007; OECD, 2015; Timperley et al., 2007).

The findings showed that when teachers share their knowledge, teaching experiences, and learning challenges with their colleagues and work collaboratively, they will probably improve their instructional methods, making it easier for their students to learn. Furthermore, we also found a correlation between high levels of professional practice in both sub-dimensions and quality teaching practices. The results showed that a school that promotes team innovativeness in its teacher is a key predictor of teachers' excellence in instructional practices. This finding could mean that teachers who work at schools that do not support innovativeness could probably perform better if the school leaders provide an environment that promotes team innovativeness. Nevertheless, the size of this relationship is relatively small. It reminds us that teachers could reflect innovative practices in their teaching practices that result in only minor changes. However, such changes are crucial in improving their students' ability to learn. When schools create a sustainable culture of team innovativeness, they can trigger their teachers' willingness to reflect on their teaching practices and make changes to improve the quality of their practices (Clarke & Hollingsworth, 2002; Guskey, 1985, 1986; Timperley et al., 2007; Widmann & Mulder, 2020). This finding demonstrates the need to support school settings that promote innovation, thus generating more creative ideas and instructional practices.

The relationship between teachers' team innovativeness and their teaching practices is mediated by their professional practices. The findings of the study showed that team innovativeness had a positive effect on both sub-dimensions of teachers' professional practices—exchange and coordination among teachers and professional collaboration on lessons – in line with previous research (Clarke & Hollingsworth, 2002; Guskey, 1986; Timperley et al., 2007). The findings showed that there is a significant mediator between team innovativeness and teaching practices in both sub-dimensions of teachers' professional behaviors. This finding indicates that team innovativeness can improve teaching both directly and indirectly, particularly by influencing teachers' professional practices and collaboration. Thus, an innovative school environment will likely make its teachers open to professional development, teamwork, and learning.

Although innovativeness is a vital research topic for organizations today, there are limited studies that focus on the importance of teachers' innovative qualifications in countries like Türkiye, with a central bureaucratic education system and a non-Western cultural context. The primary purpose of this study is to explain how team innovativeness in schools contributes to instructional practices using TALIS 2018 data. In this context, we believe that the results of our research can contribute to the knowledge of the link between team innovativeness and instructional practices. Our study's findings test the direct and indirect effects of an integrated model mediated by teachers' professional practice. However, they also show the extent to which team innovativeness and teachers' professional practice contribute to the clarity of instruction, classroom management, and cognitive activation practices. However, we need to emphasize that the size of this effect is relatively small. Our main conclusion is that prioritizing a culture of team innovativeness is significantly evident in the teachers' professional practices, especially when they work in highly centralized and bureaucratic education systems. The results not only contribute to increasing relevant knowledge regarding a more innovative school environment by enabling teachers to be professionally empowered by team innovation, but they also provide actionable information and feedback on what can be behaviorally effective for teachers' classroom management, clarity of instruction, and cognitive activation. In this respect, the research draws attention to the vital role innovative teachers play in promoting all the dimensions of instructional practices in schools and in understanding their professional practices as a mediating role.

Recommendations

Our research results provide several implications for policy, practice, and research in educational administration. From a practical implication, our study suggests that policymakers and school principals, as policymakers and practitioners, should focus on building teams of innovative teachers in schools and encourage teachers to reflect on innovative instructional practices. For this reason, school principals who assume more responsibility for supporting teachers' innovative behaviors will also empower teachers to take responsibility and freely express their views to develop innovative practices. In this context, decision-makers should design improving effective strategies for innovation and innovative teams, providing pre-service and in-service training programs organized for school leaders. Finally, in the context of effective school improvement efforts, we suggest that school administrators build an innovative team capacity in their schools and fulfill their responsibility to support professional development and instructional practices that play an essential role in increasing teacher effectiveness.

Limitations

When assessing the research findings, the variables and various limitations of the analysis should be considered. First, the results were designed as a cross-sectional study to reveal the relationship among variables. However, because the data sampled a specific time point, it cannot be used to make causal inferences. Therefore, when a school promotes team innovativeness, it may not mean that all its teachers could improve their teaching practices. For this reason, experimental and/or longitudinal studies should be conducted to investigate the effect found in our research.

Secondly, the scales that measured the teachers' professional and instructional practices used in the study were developed based on the teachers' self-evaluation. Participants would likely respond to scales based on what they should do rather than what they actually do. This limitation might cause worry concerning the data objectivity in the frame of social desirability. Therefore, the scales do not reflect the teaching quality or better professional practice; instead, they measure the frequency of particular teaching and/or professional practices. Qualitative or quantitative research involving classroom observations to measure the frequency of teachers' practices, such as clarity of instruction, classroom management, and cognitive activation, might provide a more reliable dataset for assessing the teaching quality practices (Bellibaş, 2023; Cohen & Goldhaber, 2016). Finally, to extend this study further, we suggest that researchers test different models in which team innovativeness is the independent variable in predicting school performance and examine the effect of this variable.

References

- Admiraal, W., Louws, M., Lockhorst, D., Paas, T., Buynsters, M., Cviko, A., ... Post, L. (2017). Teachers in school-based technology innovations: A typology of their beliefs on teaching and technology. *Computers & Education, 114*, 57–68.
- Ainley, J., & Carstens, R. (2018). *Teaching and Learning International Survey (TALIS) 2018 Conceptual Framework*. OECD. <https://doi.org/10.1787/799337c2-en>
- Anderson, N. R., & West, M. A. (1998). Measuring climate for work group innovation: Development and validation of the team climate inventory. *Journal of Organizational Behavior, 19*(3), 235–258.
- Baumert, J., Kunter, M., Blum, W., Brunner, M., Voss, T., Jordan, A., ... Tsai, Y.-M. (2010). Teachers' mathematical knowledge, cognitive activation in the classroom, and student progress. *American Educational Research Journal, 47*(1), 133–180.
- Bellibaş, M. Ş. (2023). Empowering principals to conduct classroom observations in a centralized education system: Does it make a difference for teacher self-efficacy and instructional practices? *International Journal of Educational Management, 37*(1), 85–102.
- Binkley, M., Erstad, O., Herman, J., Raizen, S., Ripley, M., Miller-Ricci, M., & Rumble, M. (2012). Defining twenty-first century skills. In P. Griffin, B. McGaw, & E. Care (Eds.), *Assessment and teaching of 21st century skills* (pp. 17–66). Springer.
- Blömeke, S., Nilsen, T., & Scherer, R. (2021). School innovativeness is associated with enhanced teacher collaboration, innovative classroom practices, and job satisfaction. *Journal of Educational Psychology, 113*(8), 1645–1667.
- Bryk, A. S., Sebring, P. B., Allensworth, E., Luppescu, S., & Easton, J. Q. (2010). *Organizing Schools for Improvement: Lessons from Chicago*. University of Chicago. <https://press.uchicago.edu/ucp/books/book/chicago/O/bo8212979.html>
- Buske, R. (2018). The principal as a key actor in promoting teachers' innovativeness – analyzing the innovativeness of teaching staff with variance-based partial least square modeling. *School Effectiveness and School Improvement, 29*(2), 262–284.
- Buyukgoze, H., Caliskan, O., & Gümüş, S. (2022). Linking distributed leadership with collective teacher innovativeness: The mediating roles of job satisfaction and professional collaboration. *Educational Management Administration & Leadership*.
- Civikly, J. M. (1992). Clarity: Teachers and students making sense of instruction. *Communication Education, 41*(2), 138–152.
- Clarke, D., & Hollingsworth, H. (2002). Elaborating a model of teacher professional growth. *Teaching and Teacher Education, 18*(8), 947–967.
- Cohen, J., & Goldhaber, D. (2016). Building a more complete understanding of teacher evaluation using classroom observations. *Educational Researcher, 45*(6), 378–387.
- Cordingley, P., Higgins, S., Greany, T., Buckler, N., Coles-Jordan, D., Crisp, B., ... Coe, R. (2015). *Developing great teaching: Lessons from the international reviews into effective professional development*. (p. 21). Durham University.
- Çoban, Ö., Özdemir, N., & Bellibaş, M. Ş. (2023). Trust in principals, leaders' focus on instruction, teacher collaboration, and teacher self-efficacy: Testing a multilevel mediation model. *Educational Management Administration & Leadership, 51*(1), 95–115.
- Decristan, J., Klieme, E., Kunter, M., Hochweber, J., Büttner, G., Fauth, B., ... Hardy, I. (2015). Embedded formative assessment and classroom process quality: How do they interact in promoting science understanding? *American Educational Research Journal, 52*(6), 1133–1159.
- Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher, 38*(3), 181–199.
- Doronin, D., Shen, L., & Ali, M. (2020). Parallel mediating effect of knowledge sharing quality on team innovativeness. *Technology Analysis & Strategic Management, 32*(12), 1449–1461.
- Dumont, H., & Istance, D. (2010). Analysing and designing learning environments for the 21st century. In D. Istance, H. Dumont & F. Benavides (Eds.), *The nature of learning: Using research to inspire practice* (pp. 19–34). Center for Educational Research and Innovation.
- Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation methods, and model specification on structural equation modeling fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 56–83.
- Förtsch, C., Werner, S., Dorfner, T., von Kotzebue, L., & Neuhaus, B. J. (2017). Effects of cognitive activation in biology lessons on students' situational interest and achievement. *Research in Science Education, 47*, 559–578.
- Frederiksen, M. H., & Knudsen, M. P. (2017). From creative ideas to innovation performance: The role of assessment criteria. *Creativity and Innovation Management, 26*(1), 60–74.

- Fullan, M. (2001). *New meaning of educational change* (3rd ed.). Teachers College.
- Ghosh, S., & Srivastava, B. K. (2021). The functioning of dynamic capabilities: Explaining the role of organizational innovativeness and culture. *European Journal of Innovation Management*, 25(4), 948–974.
- Goddard, Y. L., Goddard, R. D., & Tschannen-Moran, M. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *Teachers College Record*, 109(4), 877–896.
- Gopalakrishnan, S., & Damanpour, F. (1997). A review of innovation research in economics, sociology and technology management. *Omega*, 25(1), 15–28.
- Guskey, T. R. (1985). Staff development and teacher change. *Educational Leadership*, 42(7), 57–60.
- Guskey, T. R. (1986). Staff development and the process of teacher change. *Educational Researcher*, 15(5), 5–12.
- Hanfstingl, B., & Mayr, J. (2007). Prognose der bewährung im lehrerstudium und im lehrerberuf [Prediction of success in teacher education and profession]. *Journal Für Lehrer Innenbildung*, 7(2), 48–56.
- Hattie, J. (2009). *A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
- Hospel, V., & Galand, B. (2016). Are both classroom autonomy support and structure equally important for students' engagement? A multilevel analysis. *Learning and Instruction*, 41, 1–10.
- Huber, S. G., & Skedsmo, G. (2016). Teacher evaluation—Accountability and improving teaching practices. *Educational Assessment, Evaluation and Accountability*, 28, 105–109.
- Hult, G. T. M., Hurley, R. F., & Knight, G. A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management*, 33(5), 429–438.
- Jun, J., Lee, T., & Park, C. (2021). The mediating role of innovativeness and the moderating effects of strategic choice on SME performance. *Journal of Small Business Management*, 59(4), 627–647.
- Jurasaitė-Harbison, E., & Rex, L. A. (2010). School cultures as contexts for informal teacher learning. *Teaching and Teacher Education*, 26(2), 267–277.
- Kline, S. J. (1985). Innovation is not a linear process. *Research Management*, 28(4), 36–45.
- Kwakman, K. (2003). Factors affecting teachers' participation in professional learning activities. *Teaching and Teacher Education*, 19(2), 149–170.
- Kyrgidou, L. P., & Spyropoulou, S. (2013). Drivers and performance outcomes of innovativeness: An empirical study. *British Journal of Management*, 24(3), 281–298.
- Lipowsky, F., Rakoczy, K., Pauli, C., Drollinger-Vetter, B., Klieme, E., & Reusser, K. (2009). Quality of geometry instruction and its short-term impact on students' understanding of the Pythagorean Theorem. *Learning and Instruction*, 19(6), 527–537.
- Liu, Y., & Phillips, J. S. (2011). Examining the antecedents of knowledge sharing in facilitating team innovativeness from a multilevel perspective. *International Journal of Information Management*, 31(1), 44–52.
- Loogma, K., Kruusvall, J., & Ümarik, M. (2012). E-learning as innovation: Exploring innovativeness of the VET teachers' community in Estonia. *Computers & Education*, 58(2), 808–817.
- Marsh, H. W., Lüdtke, O., Nagengast, B., Trautwein, U., Morin, A. J., Abduljabbar, A. S., & Köller, O. (2012). Classroom climate and contextual effects: Conceptual and methodological issues in the evaluation of group-level effects. *Educational Psychologist*, 47(2), 106–124.
- McGeown, V. (1980). Dimensions of teacher innovativeness. *British Educational Research Journal*, 6(2), 147–163.
- Mohrman, S. A., Cohen, S. G., & Morhman Jr, A. M. (1995). *Designing team-based organizations: New forms for knowledge work*. Jossey-Bass.
- Muthén, L. K., & Muthén, B. O. (2019). *Mplus user's guide*. Muthén & Muthén.
- Nguyen, D., Pietsch, M., & Gümüş, S. (2021). Collective teacher innovativeness in 48 countries: Effects of teacher autonomy, collaborative culture, and professional learning. *Teaching and Teacher Education*, 106, 1–13.
- OECD. (2015). *Education at a Glance 2015*. OECD. Access of date 22. 02. 2023 <https://www.oecd-ilibrary.org/content/publication/eag-2015-en>
- OECD. (2019a). *TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners*. OECD. Access of date 22. 02. 2023 <https://www.oecd-ilibrary.org/content/publication/1d0bc92a-en>
- OECD. (2019b). *TALIS 2018 Technical Report* (p. 494) [Research Report]. Access of date 10. 02. 2023 https://www.oecd.org/education/talis/TALIS_2018_Technical_Report.pdf
- Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research*, 81(3), 376–407.
- Özdemir, N. (2020). How to improve teachers' instructional practices: The role of professional learning activities, classroom observation and leadership content knowledge in Turkey. *Journal of Educational Administration*, 58(6), 585–603.
- Özdemir, N., Kılınc, A. Ç., Polatcan, M., Turan, S., & Bellibaş, M. Ş. (2023). Exploring teachers' instructional practice profiles: Do distributed leadership and teacher collaboration make a difference? *Educational Administration Quarterly*, 59(2), 255–305.

- Özden, C., & Atasoy, R. (2021). Sınıfta öğretim [Teaching in the classroom] In N. Özdemir, S. Turan & Ö. Çoban (Eds.), *21. yüzyıl okullarını yeniden düşünmek* [Rethinking 21st century schools]. (pp. 229–258). Pegem Akademi.
- Pearce, C. L., & Ensley, M. D. (2004). A reciprocal and longitudinal investigation of the innovation process: The central role of shared vision in product and process innovation teams (PPITs). *Journal of Organizational Behavior, 25*(2), 259–278.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891.
- Reyes Jr, V. C., Reading, C., Doyle, H., & Gregory, S. (2017). Integrating ICT into teacher education programs from a TPACK perspective: Exploring perceptions of university lecturers. *Computers & Education, 115*, 1–19.
- Santos, J., Figueiredo, A. S., & Vieira, M. (2019). Innovative pedagogical practices in higher education: An integrative literature review. *Nurse Education Today, 72*, 12–17.
- Seidel, T., Rimmele, R., & Prenzel, M. (2005). Clarity and coherence of lesson goals as a scaffold for student learning. *Learning and Instruction, 15*(6), 539–556.
- Serdyukov, P. (2017). Innovation in education: What works, what doesn't, and what to do about it? *Journal of Research in Innovative Teaching & Learning, 10*(1), 4–33.
- Swan, J., Newell, S., Scarbrough, H., & Hislop, D. (1999). Knowledge management and innovation: Networks and networking. *Journal of Knowledge Management, 3*(4), 262–275.
- Thurlings, M., Evers, A. T., & Vermeulen, M. (2015). Toward a model of explaining teachers' innovative behavior: A literature review. *Review of Educational Research, 85*(3), 430–471.
- Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best evidence synthesis iteration (BES)*. Iterative Best Evidence Synthesis Programme.
- Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education, 23*(6), 944–956.
- Van Dijk, A., Hendriks, P., & Romo-Leroux, I. (2016). Knowledge sharing and social capital in globally distributed execution. *Journal of Knowledge Management, 20*(2), 327–343.
- Van Tartwijk, J., & Hammerness, K. (2011). The neglected role of classroom management in teacher education. *Teaching Education, 22*(2), 109–112.
- Vieluf, S., Kaplan, D., Klieme, E., & Bayer, S. (2012). *TALIS teaching practices and pedagogical innovations evidence from TALIS: Evidence from TALIS*. OECD.
- Wagner, W., Göllner, R., Werth, S., Voss, T., Schmitz, B., & Trautwein, U. (2016). Student and teacher ratings of instructional quality: Consistency of ratings over time, agreement, and predictive power. *Journal of Educational Psychology, 108*(5), 705.
- Wang, M. T., & Degol, J. L. (2016). School climate: A review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review, 28*(2), 315–352.
- Widmann, A., & Mulder, R. H. (2020). The effect of team learning behaviours and team mental models on teacher team performance. *Instructional Science, 48*(1), 1–21.

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 50%

Author 2: 50%

All authors took an equal part in all processes of the article. All authors have read and approved the final version of the study

Conflict Statement

The authors declare that there is no conflict of interest with any institution or person within the scope of the study.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Ekip Yenilikçiliği ile Öğretmenlerin Öğretim Uygulamaları Arasındaki İlişkide Öğretmenlerin Mesleki Uygulamalarının Aracılık Rolü

Giriş

Birçok çağdaş eğitim sistemi, okullarının etkililiğini ve eğitim kalitesini artırmak, öğretmenlerin bilgilerini bütünleştirmek için sinerji yaratmak, yansıtıcı düşünme ve problem çözme becerilerini artırmak, öğretmenlerin öğretim uygulamalarını ile okulun kapasitesini ve entelektüel sermayesini geliştirmek ve öğrencilerin eleştirel bakış açılarını mükemmelleştirmek için ekip tabanlı çalışma sistemlerine öncelik vererek, fakültelerini ve personelini yenilikçilik ve yaratıcılığa odaklanmaya teşvik etmiştir (Doronin vd., 2020; Mohrman vd., 1995; Santos vd., 2019; Van Dijk vd., 2016). Eğitim reformları gündeminde ve tüm eğitim politikalarının merkezinde yer alan yenilikçilik, öğretmenlerin mesleki ve öğretimsel uygulamalarıyla iç içedir (Vieluf vd., 2012).

Bilgi paylaşımı, esneklik, değişime açıklık ve yeni fikirleri ve farklı çözüm yollarını kabul etmeye isteklilik dahil olmak üzere ekip yenilikçiliği, günümüzün bilgi toplumunun, rekabetçi ortamların ve küresel dünyanın karmaşıklığıyla başa çıkmak için öğrenen organizasyonlar ve yenilikçi okullar için giderek daha vazgeçilmez bir nitelik ve kapasite haline geliyor (Liu & Phillips, 2011). Bu nedenle, eğitimcilerin geleneksel yöntemlerindeki değişiklikler de dahil olmak üzere günümüzün öğretmenlik mesleği uygulamalarına yönelik yenilikçi yaklaşımlar, öğretim sürecinin yönetimini anlamada ve 21. yüzyıl becerileri bağlamlarında çeşitli eğitimsel ve öğretimsel zorlukların üstesinden gelmede merkezi ilkelere haline gelmiştir (Nguyen vd., 2021). Bu nedenle, okul ortamlarında ve işbirlikçi öğrenme kültüründe yenilikçi zihniyetlerin desteklenmesi, öğretmenlerin öğretim uygulamalarını olumlu bir şekilde tetikleyebilir ve okul uygulamalarında uygun değişikliklerle daha etkili öğretim ortamları sağlayabilir. Bununla birlikte, ekip yenilikçiliğinin öğretmenlerin öğretim uygulamaları ve öğretmenlerin mesleki uygulamaları üzerinde bir etkisinin olup olmadığı veya ne ölçüde olduğu sorusu

daha önce modellenmemiştir. Bu anlamda, bu çalışma, daha derin bir anlayış elde etmek, takım halinde öğrenmeyi teşvik etmek ve okul ortamlarında bir takım zihinsel modeli oluşturmak için okul gelişiminde son derece yenilikçi takım performansının çok önemli olduğunu vurgulamaktadır.

Eğitim yönetimleri, akademisyenler ve uygulayıcılar, ekip yenilikçiliğinin oynadığı etkili öğretimin oluşumundaki kritik rolü, yani etkili bir öğretim ortamı yaratma ve okul etkililiğini sürdürmeyi kabul etseler de, konu hakkındaki teorik bilgi sınırlıdır (Buske, 2018; Huber & Skedsmo, 2016; Nguyen vd., 2021). Şaşırtıcı bir şekilde hem öğretmenlerin öğretim uygulamalarının öncüllerini hem de bu daha geniş bağlamda öğretmenlerin mesleki uygulamalarının aracı rolünü aynı anda inceleyen çok az ampirik çalışma vardır (Bellibaş, 2023; Loogma vd., 2012). Kanıtlar, bazı öğretmenlerin aynı okul ortamını ve ortak bir vizyonu paylaşmasına rağmen, becerilerini geliştirmek ve sosyalleşme süreçlerini teşvik etmek için birbirleriyle nispeten daha az etkileşime girme eğiliminde olduklarını göstermektedir. Bu durumu tersine çevirmenin yolu, ekip yenilikçiliğini güçlendirerek yenilikçi öğretim uygulamalarını geliştirmektir (Anderson & West, 1998). Blömeke ve arkadaşları (2021), yenilikçi okul yaşam alanlarının daha fazla iş birliği, öğretmenler arasında yenilikçi öğretim uygulamalarında daha sıklık ve öğrencilerde daha yüksek bilişsel kapasitenin aktivasyonu ile ilişkili olduğunu bildirmiştir. Bu bulgu, ekip yenilikçiliğinin, eğitimsel, tekno-pedagojik ve toplumsal değişimlere uyum sağlama yetenekleri açısından uzun vadeli ve sürdürülebilir okul sistemlerinde kaliteli öğretim için anahtar bir kriter haline geldiğini gösterebilir.

Tüm okul sistemleri, okullarının beklentilerini karşılamasını, okul performansını ve etkililiğini geliştirmesini ve eğitim kalitesini yükseltmesini, iyileştirme ve sürdürülebilir kalkınma için olumlu değişiklikleri teşvik etmesini talep eder (Nguyen vd., 2021; Serdyukov, 2017). Okul ortamındaki herhangi bir öğretim sürecinde, tek bir öğretmenin yeni bir fikir geliştirmesi, yenilikçi bir görevi yerine getirmesi veya yeni öğretim teknikleri ve materyalleri geliştirmesi zordur. Bu hedeflere ancak işbirlikçi bir vizyona ve paylaşım kültürüne sahip üyelerden oluşan yenilikçi bir ekip oluşturarak ulaşılabilir (Doronin vd., 2020; Pearce & Ensley, 2004; Swan vd., 1999).

Millî Eğitim Bakanlığı'na (MEB) bağlı merkezi bir eğitim sistemi ile faaliyet gösteren Türkiye, katı bir bürokratik yönetim yapısı sürdüren bir ülkedir. Eğitimde kalite bağlamında son 20 yılda Türk eğitim sisteminde birçok reform ve politika girişi yapılmış olsa da bu tür yönetim yapılarında yenilikçi uygulamaları hayata geçirmenin zor olduğuna dair kanıtlar bulunmaktadır. Bu nedenle, Türkiye gibi ülkelerde ekip yenilikçiliğinin öğretmenlerin mesleki gelişimi ve öğretimsel uygulamaları üzerindeki etkilerinin ortaya çıkarılması, okullarının performanslarını iyileştirmedeki rolünün anlaşılması açısından büyük önem taşımaktadır.

Bu araştırma, ekip yenilikçiliğinin hâkim olduğu bir çalışma ortamının ve işbirlikçi bir kültürün gücünün, öğretmenlerde öğretim uygulamalarını geliştirmeye yönelik daha fazla istekliliği tetikleyebileceği hipotezine dayanmaktadır. Ekip yenilikçiliğinin yenilikçi bir iklimin öğretmenlerin öğretimsel ve mesleki uygulamalarını ne ölçüde etkilediğini, değişim, koordinasyon ve mesleki uygulamalar gibi alt bağlamsal etkiler de dahil olmak üzere temel çıktılarını, araştırmamızı öğretmenlerin algılarına dayandırarak araştırdık. Bu çalışma önemlidir, çünkü öğretim sürecinde yeniliğin benimsenmesi gibi eğitim teknolojisi uygulamaları, teorik ve ampirik bir temel ve amaçlı, öğretimsel, pedagojik ve sistemik araştırmaya dayalı kanıtlar gerektirir.

Ayrıca, bu tür programların uygulanmasının maliyet ve zaman verimliliği arasındaki bağlamsal ilişkiler, öğretmenlerin öğrenme ekibinin yenilikçiliğinin faydaları ve iyileştirilmiş öğretimsel ve profesyonel uygulamalar ile anlaşılması en kritik alanlardan biridir. Yenilikçi bir zihniyete açık öğretmenlerin yeni fikirlere olumlu yanıt vereceğini varsayarsak, bu çalışma, ekip yenilikçiliğinin öğretmenlerin mesleki uygulamalarının aracılık etkisiyle öğretmenlerin öğretim uygulamalarını nasıl destekleyebileceğini ve yenilikçi öğretmenlerin ve okulların arzu edilen sonuçlara nasıl katkıda bulunabileceğini ortaya çıkarabilir.

Kavramsal Çerçeve

Öğretmen değişimi ve motivasyon bağlamlarının teorik modellerine dayanan bu çalışma, ekip yenilikçiliğinin öğretmenlerin mesleki öğrenme sürecini ve öğretim uygulamalarını tetikleyebileceğini önermektedir (Clarke & Hollingsworth, 2002; Guskey, 1985, 1986; Timperley vd., 2007). Bu çalışma, öğretmenlerin mesleki uygulamalarının (değişim-koordinasyon ve derslerde profesyonel iş birliği) öğretmenlerin öğretim uygulamaları üzerindeki iki aracı etkisini kanıtlamayı ve kavramsallaştırmayı amaçlamaktadır. Bu nedenle çalışma, Şekil 1’de sunulan modelde kullanılan değişkenler arasındaki doğrudan ve dolaylı ilişkilere odaklanmaktadır.

Yöntem

Çalışmanın bu bölümünde araştırmanın örnekleme, veri toplama araçları ve analizleri ile ilgili bilgiler yer almaktadır. Ayrıca bu araştırma yöntemsel olarak nicel araştırma modellerinden kesitsel bir çalışmadır.

Örneklem

Araştırmanın hipotezlerini test etmek için kullanılan veriler Ekonomik İş birliği ve Kalkınma Örgütü (OECD, 2019) tarafından yürütülen Uluslararası Öğretme ve Öğrenme Araştırması’na (TALIS) 2018 katılan öğretmenlerden toplanan yanıtlar kullanılmıştır. TALIS 2018 kapsamında gerçekleştirilen faaliyetler 48 katılımcı ülke, OECD sekreterliği, Avrupa Komisyonu ve bir konsorsiyum tarafından yürütülmüştür. Bu konsorsiyum, her ülkenin kendisinin oluşturduğu bağımsız merkezlerden mevcut olan popülasyon özellikleri ile örneklem özellikleri arasındaki uyum düzeyini incelemelerini istemiştir. Anketi yanıtlamayan ya da yanlış yanıtlayan katılımcıların yanıtları çıkarıldıktan sonra okulların en az %75’inin ankete katıldığı ve yine de orijinal örnekleme okulların en az %50’sinin katıldığı belirli bir ülkede alınan yanıtlar için yapılmıştır. Türkiye’de öğretmenlerin bu ankete katılım yüzdeleri, önce ve sonra %99’dur. Bu nedenle, Türkiye’deki öğretmenlerden alınan yanıtlar için okul yanıtlamama yanlılığı riski olmadığını söyleyebiliriz (OECD, 2019, s.480).

Anket, müdürler ve okullar hakkında bilgilerin toplandığı iki bölüm dışında altı bölümden oluşmaktadır. Türkiye’de 2018-2019 Eğitim Öğretim Yılında evreni, ortaokul (resmi: 18.935; özel:2.060) ile lise (resmi: 8.914; özel: 3.589) olmak üzere toplam 33.498 okul olarak belirlenmiştir. Türkiye, TALIS 2018 çalışmasına tüm düzeyler toplamında 971 okul ve 19 binden fazla öğretmenle katılmıştır. Ancak bu çalışmada bulgular ISCED 2 seviyesinde ortaokullardan toplanan verilerin analizi ile elde edilmiştir. Buna göre TALIS 2018’e Türkiye, ISCED 2 (5. sınıf- 8. sınıf) seviyesinde, OECD tarafından rastgele seçilen 196 okuldaki 3952 öğretmenin oluşturduğu bir örnekleme katılmıştır. OECD TALIS çalışmasında iki aşamalı tabakalı örneklem yöntemi kullanılmıştır: İlk tabaka için ülkelerde bulunan okullardan 200 okul rastgele seçilmekte, ikinci tabakada ise bu okullardan sağlanan öğretmen listelerinden 20 öğretmen rastgele seçilmektedir (OECD, 2019). Ancak 869 öğretmenden toplanan

yanıtlar, kayıp değerler nedeniyle dikkate alınmadı. Bu nedenle bu çalışmada 3083 öğretmenin verdiği cevaplar dikkate alınmıştır.

Araştırmaya katılan öğretmenlerin özellikleri incelediğinde (Bkz. Tablo 1.) 3083 öğretmenin 1793'si kadın, 1290'ı erkektir. Bu öğretmenlerin yaş dağılımlarına bakıldığında ağırlıklı olarak 30-39 (47,5%) yaş grubunda oldukları görülmektedir. Eğitim açısından ise öğretmenlerin oldukça yüksek bir bölümü 2829 (91,8%) lisans derecesine sahiptir.

Veri Toplama Araçları

Bu çalışmanın ana bağımlı değişkeni, öğretmenlerin öğretim uygulamalarıdır (TIP). Bu değişkene ait maddeler TALIS 2018 araştırmasından alınmıştır. Bu ölçekte öğretmenlerden sınıflarında bu değişkenlere ait 12 farklı etkinliği ne sıklıkta gerçekleştirdiklerini 4'lü Likert ölçeği (1= hiçbir zaman ya da hemen hemen hiç, 4=daima) kullanarak bildirmeleri istenmiştir. TIS faktör analizi sonucunda her biri 4 madde olan 3 boyuttan (öğretimde açıklık, bilişsel aktivasyon ve sınıf yönetimi) oluşmuştur.

Araştırmanın aracı değişkeni öğretmenlerin mesleki uygulamaları (TPP) olarak ele alınmıştır. TALIS'te değişkeni oluşturmak için öğretmenlerden ortalama olarak, okullarında belirli davranışları ne sıklıkta yaptıklarını belirtmeleri istenir. TALIS'te TPP'yi ölçen toplam sekiz (8) madde sayısı, "hiç" (1), "yılda bir ya da az" (2), "yılda 2-4 kez" (3), "yılda 5-10 kez" (4), "ayda 1-3 kez" (5) ve "haftada 1 ya da fazla" (6) arasında değişen altılı Likert tipi bir ölçeğe dayalıdır. Maddelerin faktör analizi, bunların iki boyutta kümelendiğini göstermektedir: öğretmenler arası değişim ve koordinasyon (TPPEXCH) ve öğretmenler arası derslerde mesleki işbirliği (TPPCOLES).

Araştırmanın bağımsız değişkeni ise öğretmenlerin okullarındaki meslektaşlarının yeniliklere yaklaşımı ve uygulamalarını ifade eden Takım Yenilikçiliği (TI)'dir. Ölçek tek boyutta TI'yı ölçen dörtlü Likert tipi (1=kesinlikle katılmıyorum, 4= kesinlikle katılıyorum) toplam dört (4) maddeye dayalıdır. Araştırmamızda kullandığımız ölçeklerin yapılan DFA sonuçlarına ve TALIS 2018 raporuna göre güvenilirlik ve model uyum indekslerinin kabul edilebilir düzeyde olduğu görülmektedir (bkz. Tablo 2).

Table 2. Ölçeklerin güvenilirlik ve uyum değerleri sonuçları

Ölçekler	α	χ^2 (df)	CFI	TLI	RMSEA	SRMR
1. TI	,949	98,073 (2)	,992	,977	,125	,009
2. TPP	,839	559,955(18)	,943	,911	,099	,033
3. TPPCOLES	,722	5,113(2)	,999	,996	,022	,007
4. TPPEXCH	,804	6,418 (2)	,999	,997	,027	,005
5. TIP	,810	480,131 (51)	,968	,958	,061	,038

Notes: TI = ekip yenilikçiliği; TPP = öğretmen mesleki uygulamaları; TIP = öğretmen öğretim uygulamaları; TPPCOLES = öğretmenler arası derslerdeki mesleki işbirliği; TPPEXCH = Öğretmenler arası değişim ve koordinasyon; n = 3,083 öğretmen.

Analiz Stratejisi

Bu çalışmada öncelikle ele alınan değişkenlerin tüm değişkenleri arasındaki ortalamalar, standart sapmalar, ölçek güvenilirlikleri (Cronbach's alpha) ve iki değişkenli korelasyonlar IBM SPSS 25 kullanılarak analiz edildi. Sonraki aşamada veri seti analiz edilmeden önce frekans değerleri, uç değerleri, çoklu bağlantı problemi olma durumu ve Mahalanobis mesafeleri incelenerek verinin yapısal eşitlik modeli için uygunluğu analiz edilmiştir. Son olarak, teorik çerçevede sunulan öğretmenlerin mesleki uygulamalarının aracılık ettiği ve ekip yenilikçiliğinin öğretmenlerin öğretim uygulamaları üzerindeki doğrudan ve dolaylı etkilerini araştıran hipotezleri analiz etmek için Mplus 8.3 (Muthén ve Muthén, 2019, s. 55) aracılığıyla yapısal eşitlik modellemesi (YEM) yapılmıştır. Daha sonra ikinci model,

hangi boyutun en büyük aracılık etkisine sahip olduğunu belirlemek için TPP'nin her bir boyutu için aracılık etkisini test etmiştir. Verilerin analizinde, etki büyüklüğünü değerlendirmek ve değişkenler arasındaki yolların güven aralıklarını ve anlamlılık düzeylerini elde etmek için Preacher ve Hayes (2008) tarafından önerilen 2,000 bootstrap samples yöntemi, kullanıldı. Ayrıca bu araştırma modellerindeki değişkenler arasındaki tüm tahminler standartlaştırılmış değerlere dönüştürülerek sunulmuştur.

Bulgular

Bu bölüm, ölçüm modelinde kullanılan değişkenlerin betimsel ve korelasyon sonuçlarının rapor edilmesiyle başlamaktadır (Tablo 3). Bu sonuçlara göre dört puanlı Likert tipi ölçeklerde ölçülen tüm değişkenler için ortalama değerler benzer şekilde nispeten yüksektir: TPP için 3.16 ve TIP için 2.94. TPP değişkeninin alt boyutlarına bakıldığında ise TPPCOLES ortalamasının (2.65) TPPEXCH (3.68) ortalamasından oldukça düşük olduğu görülmektedir. Ölçme modelindeki değişkenler ve boyutlar arasındaki tüm korelasyonlar, 0.01 düzeyinde anlamlıdır. TI ile TPP arasındaki korelasyon ($r = .314$), TI ile TIP arasındaki korelasyondan ($r = .142$) ve TPP ile TIP arasındaki korelasyondan ($r = .290$) daha büyüktür.

Araştırmanın sonraki aşamasında TI ve TIP arasındaki ilişkinin genel TPP ölçeği ve TPP'nin iki alt boyutu olan TPPCOLES ve TPPEXCH tarafından aracılık edildiği iki ölçüm modeli için sonuçlar hesaplanmıştır (Şekil 2). Sonuçların yorumlanması için Ki-kare bölü serbestlik derecesi (χ^2/df), RMSEA (root mean square error of approximation), CFI (comparative fit index), TLI (Tucker-Lewis index) ve SRMR (standardized root mean square residual) uyum değerlerine bakılmıştır. Buna göre Model 1 için ($\chi^2 = 2230.310$, $df = 243$, $RMSEA = .052$, $CFI = .95$, $TLI = .94$, $SRMR = .042$) ve Model 2 için ($\chi^2 = 3553.015$, $df = 243$, $RMSEA = .066$, $CFI = .91$, $TLI = .90$, $SRMR = .088$) sonuçları elde edilmiştir. Bu sonuçlar örneklem büyüklüğüne duyarlı olan ve bu nedenle büyük örneklemelerde genellikle göz ardı edilen yüksek χ^2/df dışında, model için genel olarak iyi uyumun bir kanıtı olarak görülmektedir (Fan vd., 1999).

İlk YEM modelinin sonuçları (Şekil 2), kavramsal modeldeki değişkenler arasında pozitif ve istatistiksel olarak anlamlı bir ilişki olduğunu göstermektedir (Tablo 4). Bu, TI'nın TIP üzerinde küçük ama istatistiksel olarak anlamlı bir doğrudan etkiye sahip olduğunu gösterir ($\beta = .06$, $p < .05$), bu bulgu H2'yi doğrular. Bulunan etkinin yönü pozitifdir, yani takım yenilikçiliği davranışları sergileyen öğretmenlerin, sergilemeyenlere göre ortalama olarak daha iyi öğretim uygulamaları geliştirdiği anlamına gelir. Ayrıca YEM sonuçları, H3'ü doğrulayan, TI ile TPP arasında istatistiksel olarak anlamlı ve orta düzeyde bir ilişki ($\beta = .37$, $p < 0.001$) gösterir. Benzer şekilde, takım yenilikçiliği sergileyen öğretmenlerin ortalama olarak daha iyi mesleki uygulamalar bildirdiği anlamına gelir. Ek olarak, TIP ve TPP arasında orta ve pozitif bir ilişki vardır ($\beta = .47$, $p < .001$), H1'i destekler. Bu bulguya göre yüksek mesleki gelişim uygulamalarına sahip öğretmenler, düşük mesleki gelişim gösterenlerden daha iyi öğretim uygulamaları geliştirdiklerini ifade etmektedir.

Tablo 4'te gösterilen YEM modelinin sonuçları, kavramsal model içindeki dolaylı ilişkileri de içermektedir. Bu sonuçlar, TI ve TIP arasında TPP'nin aracılık ettiği zayıf ancak pozitif ve istatistiksel olarak anlamlı dolaylı bir ilişkiyi göstermektedir ($\beta = .17$, $p < .001$). Bu, öğretmenlerin takım yenilikçiliği davranışları sergilemelerinin, öğretmenlerin mesleki uygulamalarında küçük bir iyileşme ile ilgili olduğu anlamına gelir. Bu arada, öğretmenlerin mesleki uygulamalarındaki ılımlı bir artış, TIP üzerinde yalnızca hafif bir iyileşme ile ilişkili görülmektedir. TI'nın TIP üzerindeki toplam etkisi küçük ama pozitif

ve istatistiksel olarak anlamlı ($\beta = .23, p < 0.001$). POF ve TSE değişkenleri birlikte, TCP'deki toplam varyasyonun %36'sını oluşturur ($R^2 = .361$).

TPP'nin her bir boyutunun TI ve TIP arasındaki ilişkiye ne ölçüde aracılık ettiğini göstermek için ikinci bir YEM modeli (Şekil 2) oluşturulmuştur. Sonuçlar, TPPCOLES ($\beta = .31, p < .001$) ve TPPEXCH'in ($\beta = .24, p < .001$) TIP ile orta ölçüde anlamlı bir ilişkiye sahip olduklarını göstermektedir. Diğer bir anlatımla öğretmenler arasında derslerde işbirliği ve değişim ve koordinasyon varsa öğretim uygulamaları da o kadar iyi olur (Tablo 5). Bu bulgu, H5 ve H6'yı doğrulamıştır. Ek olarak, TI, TPP'nin iki boyutuyla da pozitif ve anlamlı bir şekilde ilişkilidir: TPPCOLES ($\beta = .30, p < .001$) ve TPPEXCH'in ($\beta = .34, p < .001$) - H7, ve H8'i onaylıyor. Bu bulgu, genel olarak yenilikçiliğe açık okul ortamlarına sahip öğretmenlerin, olmayanlara kıyasla meslektaşlarıyla biraz daha fazla derslere yönelik mesleki işbirliği ve koordinasyona sahip oldukları anlamına gelir. Bununla birlikte, bulgular her iki alt boyutta dolaylı ilişkiler açısından, TPPCOLES ($\beta = .09, p < .001$) ve TPPEXCH'in ($\beta = .08, p < .001$) aracılık rolüne sahip olduğunu göstermektedir.

Araştırma bulgularında belirlenen bu küçük etki büyüklüğü göz önüne alındığında, öğretmenlerin takım yenilikçiliğine sahip ortamlarda görev yapmasının, öğretmenlerin mesleki gelişim uygulamalarında küçük bir gelişmeyle ilgili olduğu ve bu artışında öğretmenlerin öğretim uygulamalarında küçük bir artışla ilişkili olduğu anlamına gelir. Buna göre çalışmamızda H9 ve H10 onaylanmıştır.

Tartışma ve Sonuç

Makalenin bu bölümünde değişkenlerle ilgili bulgular, analizimiz, çalışmanın sınırlılıkları ve politika, uygulama ve araştırma önerilerimiz tartışılmaktadır. Bu çalışma, ekip yenilikçiliği ile öğretmenlerin mesleki ve öğretimsel uygulamaları arasındaki olası ilişkileri araştırmıştır. Bu nedenle, TI ve TPP'nin öğretmenlerin öğretim uygulamalarında birbirine bağlı ve etkili değişkenler olarak kabul edilebileceğini varsayan iki model oluşturduk. Sonuçlar, öğretmenlerin mesleki uygulamalarının, öğretmenlerin öğretim uygulamalarını geliştirmede kritik öneme sahip olduğunu ortaya koydu. Daha spesifik olarak, öğretmenin, daha etkili öğretimi teşvik eden ve öğrenmeyi kolaylaştıran mesleki gelişim programlarına katılma isteği, genellikle daha iyi öğretim uygulamalarıyla ilişkilendirilebilir. Bu bulgu, öğretmenlerin öğretme becerilerini geliştiren profesyonel uygulamalara katılmalarının sınıf eylemlerini ve uygulamalarını etkileyebileceği teorisini doğrulamaktadır (Cordingley vd., 2015; Timperley vd., 2007). Sonuç ayrıca, daha ampirik çalışmaların gösterdiği gibi, mesleki gelişim ve öğretmenlik uygulaması arasındaki pozitif ilişkiyi de desteklemektedir (Desimone, 2009; Goddard vd., 2007; OECD, 2015; Timperley vd., 2007).

Bulgular, öğretmenlerin bilgilerini, öğretim deneyimlerini ve öğrenme zorluklarını meslektaşlarıyla paylaştıklarında ve iş birliği içinde çalıştıklarında, muhtemelen öğretim yöntemlerini iyileştireceklerini ve öğrencilerin öğrenmesini kolaylaştıracağını göstermiştir. Ayrıca, her iki alt boyutta da yüksek düzeyde mesleki uygulama ile kaliteli öğretim uygulamaları arasında bir ilişki bulduk.

Sonuçlar, öğretmeninde ekip yenilikçiliğini teşvik eden bir okulun, öğretim uygulamalarında öğretmenlerin mükemmelliğinin önemli bir belirleyicisi olduğunu göstermiştir. Bu bulgu, yenilikçiliği desteklemeyen okullarda görev yapan öğretmenlerin, okul liderleri ekip yenilikçiliğini teşvik eden bir ortam sağlarsa muhtemelen daha iyi performans gösterebilecekleri anlamına gelebilir. Ancak, bu ilişkinin boyutu nispeten küçüktür. Bize öğretmenlerin, yalnızca küçük değişikliklerle sonuçlanan

yenilikçi uygulamaları öğretim uygulamalarına yansıtabileceklerini hatırlatır. Bununla birlikte, bu tür değişiklikler, öğrencilerinin öğrenme becerilerini geliştirmede çok önemlidir. Okullar sürdürülebilir bir ekip yenilikçiliği kültürü oluşturduklarında, öğretmenlerinin öğretim uygulamaları üzerinde düşünme ve uygulamalarının kalitesini artırmak için değişiklikler yapma istekliliğini tetikleyebilirler (Clarke & Hollingsworth, 2002; Guskey, 1985, 1986; Timperley vd., 2007; Widmann & Mulder, 2020). Bu bulgu, yeniliği teşvik eden ve böylece daha yaratıcı fikirler ve öğretim uygulamaları üreten okul ortamlarını destekleme ihtiyacını göstermektedir.

Öğretmenlerin ekip yenilikçiliği ile öğretim uygulamaları arasındaki ilişki, mesleki uygulamaları aracılığıyla gerçekleşir. Araştırmanın bulguları, ekip yenilikçiliğinin, önceki araştırmalarla uyumlu olarak, öğretmenlerin mesleki uygulamalarının her iki alt boyutu -öğretmenler arasındaki değişim ve koordinasyon ve derslerde profesyonel iş birliği- üzerinde de olumlu bir etkiye sahip olduğunu göstermiştir (Clarke & Hollingsworth, 2002; Guskey, 1986; Timperley vd., 2007). Bulgular, öğretmenlerin mesleki davranışlarının her iki alt boyutunda da ekip yenilikçiliği ile öğretim uygulamaları arasında anlamlı bir aracı olduğunu göstermiştir. Bu bulgu, ekip yenilikçiliğinin, özellikle öğretmenlerin mesleki uygulamalarını ve iş birliğini etkileyerek öğretimi hem doğrudan hem de dolaylı olarak geliştirebileceğini göstermektedir. Bu nedenle, yenilikçi bir okul ortamı muhtemelen öğretmenlerini mesleki gelişime, takım çalışmasına ve öğrenmeye açık hale getirecektir.

Öneriler

Bu çalışma, politika yapıcılar ve okul müdürlerinin, karar alıcılar ve uygulayıcılar olarak, okullarda yenilikçi öğretmenlerden oluşan ekipler oluşturmaya odaklanmaları ve öğretmenleri yenilikçi öğretim uygulamaları üzerinde düşünmeye teşvik etmeleri gerektiğini önermektedir. Bu nedenle öğretmen ve okul liderlerine araştırma konularına ilişkin hizmet öncesi ve hizmet içi eğitimler düzenlenebilir.

Sınırlılıklar

Çalışmanın bulguları yorumlanırken, analizin değişkenleri ve çeşitli sınırlılıkları göz önünde bulundurulmalıdır. İlk olarak, bu çalışmanın sonuçları, OECD tarafından derlenen ulusal düzeyde temsili bir ikincil veri seti kullanan bir kesitsel araştırma tasarımına dayanmaktadır. Kesitsel anket tasarımları, ilgilenilen değişkenler arasındaki ilişkiyi anlamlandırmaya yardımcı olur. Bununla birlikte, veriler belirli bir zaman noktasının anlık görüntüsünü temsil ettiğinden, değişkenler arasındaki ilişki hakkında nedensel çıkarımlar yapmak için kullanılamaz. Bu nedenle, bir okul ekip yenilikçiliğini teşvik ettiğinde, bu, tüm öğretmenlerinin öğretim uygulamalarını iyileştireceği anlamına gelmez. Bu nedenle araştırmamızda bulunan etkinin araştırılması için deneysel veya boyamsal çalışmalar yapılmalıdır.

İkinci olarak, araştırmada öğretmenlerin mesleki ve öğretimsel uygulamalarını ölçen ölçekler, öğretmenlerin öz değerlendirmelerine dayalı olarak geliştirilmiştir. Bu sınırlama, sosyal istenirlik konusu nedeniyle verilerin nesnelliği hakkında endişelere yol açabilir. Öğretmenler muhtemelen ölçeklere gerçekte ne yaptıklarından çok ne yapmaları gerektiğine göre yanıt vereceklerdir. Bu nedenle, katılan öğretmenlerden ölçek maddelerine katılma düzeylerini belirtmeleri istendiğinden, bu durumu sosyal istenirlik etkilerine ilişkin çeşitli teorilere dayanan kritik bir sorun olarak değerlendirebiliriz. Öte yandan, OECD TALIS (2018) anketi, öğretmenlerden ölçek maddelerinde verilen davranışların sosyal istenirlik etkilerinden kaçınmak veya en azından olasılığını azaltmak için ne sıklıkta meydana geldiğini belirtmelerini isteyen bir sıklık yanıtı ölçeği kullandı. Bu nedenle, ölçekler öğretimin veya mesleki

uygulamanın kalitesini deęerlendirmez; bunun yerine, belirli bir öğretim uygulamasının sıklığını ölçerler. Öğretimin netliği, sınıf yönetimi ve bilişsel aktivasyon gibi öğretmen uygulamalarının sıklığını ölçmek için sınıf gözlemlerini içeren nicel veya nitel araştırma, öğretim uygulamalarının kalitesini deęerlendirmek için daha güvenilir bir veri seti sağlayabilir (Bellibaş, 2023; Cohen & Goldhaber, 2016). Son olarak, bu çalışmayı daha da genişletmek için, araştırmacıların ekip yenilikçiliğinin okul performansını yordamada bağımsız deęişken olduğu farklı modelleri test etmelerini ve bu deęişkenin etkisini incelemelerini öneriyoruz.



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

An Investigation of Research on Differentiated Instruction Approach in Preschool Education Between 2005-2022

ib Tacettin Tezcan, Lecturer, Dr., Corresponding Author
Bolu Abant İzzet Baysal University, Türkiye
tacettintezcan@ibu.edu.tr
Orcid ID: 0000-0001-7755-785X

ib Zeynep Fulya Temel, Prof. Dr.
Gazi University, Türkiye
ftemel@gazi.edu.tr
Orcid ID: 0000-0002-5375-3503

Article Type: Research Article

Received Date: 30.03.2023

Accepted Date: 10.11.2023

Published Date: 30.11.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: 10.29329/tayjournal.2023.610.12

Citation: Tezcan, T., & Temel, Z. F. (2023). An investigation of research on differentiated instruction approach in preschool education between 2005-2022. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 998-1021.

Abstract

Differentiated instruction is a pedagogical approach that involves differentiating the content, process, teaching methods, resources used, activities implemented and children's products to meet the learning needs of children with different levels of readiness, interests and learning styles in the same classroom. Considering the differences of children in multicultural societies, differentiated instruction helps to turn children's differences into advantages and respond to their learning needs. The aim of this study is to present a general framework for differentiated instruction in the light of the studies on differentiated instruction in preschool education between 2005 and 2022 in the literature. For this purpose, a systematic literature review on differentiated instruction in preschool education was conducted and the reflections of differentiated instruction in preschool education were investigated. The 41 articles obtained as a result of the review were analyzed by content analysis according to the years of publication, the index of the journals in which they were published, the subjects studied, the methods used, the methods of analysis, data collection sources, data collection tools and samples. As a result, in the scanned studies; the most articles were published in 2021 and it was seen that they were mostly published in SCI/SSCI indexes. It is seen that teachers are given trainings about the differentiated instruction approach as the subject of the published articles, and as a result of the trainings, teachers support the development of children with their practices.

Keywords: Preschool education, differentiated instruction, descriptive method, content analysis.

Introduction

The problem of coping with children's differences in today's preschool classrooms is increasing day by day. It is increasingly recognized that children's learning styles, motivation, abilities, needs, interests, etc. differ and that these differences affect the performance of the child, the classroom, and the school. Teachers are the first people who have an important responsibility in adapting to these differences and the diversity of levels in individual learning (George, 2005; Moore, 2005; Subban, 2006; Tomlinson et al., 2003). The standard instructional approach today does not meet the needs of all children and ignores their different characteristics (Fox & Hoffman, 2011; Subban, 2006). In contrast, in the differentiated instruction approach, teachers consider the differences among children and accept their strengths (George, 2005; Subban, 2006; Tomlinson et al., 2003).

Responding to children's differences requires intensive effort because these differences are a wide range of characteristics including children's interests, learning styles, developmental levels, learning speeds, abilities, cultural backgrounds, language levels, attitudes, etc. (Moore, 2005; Tomlinson, 2001). In differentiated instruction practices, diversity is offered to each child according to his/her needs. For example, teachers work with different groups at different levels (according to their levels or interests) to give children more support and feedback for their learning. Differentiated instruction is a flexible, fair and logical way of teaching and learning (Fox & Hoffman, 2011). Differentiated instruction allows teachers to provide different activities, deliver different content, and adopt a variety of assessment methods to meet the needs of each child (Thousand, Villa, & Nevin, 2007). In other words, teachers are expected to make explicit choices about the nature of the learning content, process and product for each child at all stages of education (Algozzinea & Anderson, 2007). Although differentiated instruction is not a new approach (Algozzinea and Anderson, 2007), it has been expressed in different ways in the literature over time. In the literature, differentiation (Hertberg-Davis and Brighton, 2006), differentiated instruction (Tomlinson, 2014), differentiated learning (Mills et al., 2014), curriculum differentiation (Schofield, 2010), differentiated learning, and so on. Although different names are given

to differentiated instruction, these concepts advocate common views such as including the diversity of children in education, adopting different teaching strategies, encouraging diversity in learning activities, and following the best learning process by following the needs of each child (Hall, Strangman, & Meyer, 2014). Differentiated instruction is often presented as a multidimensional concept as it is based on differences that vary from child to child. Many researchers present different differentiated instruction components and differentiated instruction dimensions.

Moore (2005) emphasizes the differences in content, process and product as the elements of differentiated instruction, while Fogarty and Pete (2011) emphasize children's emotions and choice factors in addition to the elements. Smit and Humpert (2012) also emphasized children's attitudes, communication, collaboration and assessment. It is seen that researchers mention five common dimensions. These common dimensions help to develop the following eclectic definition of differentiated instruction: Differentiated instruction is an instructional approach that accommodates children's differences by (1) taking into account that children are different from each other; (2) using different teaching methods and techniques; (3) encouraging diversity in learning activities; (4) monitoring children's individual needs; and (5) pursuing the most effective learning outcomes (Suprayogi, Valcke, & Godwin, 2017). Proponents of this approach state that differentiated instruction is rooted in years of educational research and theory (Hall, 2002). It is based on a number of approaches such as social constructivism, thinking and learning styles, brain research and related research (Anderson, 2007; Tomlinson & Allan, 2000). The first theory to be considered in differentiated instruction is social constructivism proposed by the Russian psychologist Vygotsky. In social constructivism, a child's learning is co-constructed through social interaction with an adult or a teacher. The social and cultural context is important in the child's development process and more emphasis is placed on social and cultural contributions to the child's development (McLeod, 2020). The second is Gardner's theory of multiple intelligences, which has studies on intelligence. In this theory, Gardner stated that human intelligence is divided into eight different areas. He stated that this would lead to the formation of characteristics that differentiate individuals from each other and provide opportunities that would allow the individual to develop the aspects that they lack by using their strengths (Avcı & Yüksel, 2014; Subban, 2006). Brain research, which is related to differentiated instruction, has provided some information about the structure of the brain and how we process information. It is known that each individual's brain is unique and that the individual internalizes information by shaping it in a unique way (Tomlinson, 2014). For learning to take place, ideas that challenge learners' brains and enable them to make meaningful connections should be presented (Tomlinson et al., 2003; Subban, 2006). In addition, Subban (2006) associates differentiated instruction with learning styles, cooperative learning and problem-based learning. Differentiated instruction is not an approach that is shaped only according to multiple intelligences or only according to learning preferences. It is to design instruction by systematically considering the characteristics that differentiate children from each other in the learning environment such as readiness, interest and learning style (Özer & Yılmaz, 2016). In order to be effective in differentiated instruction, differentiations in content, process and product should be made according to children's interest, readiness and learning profile characteristics. With a more effective program created through differentiation in content, process and product, every child in the classroom can be reached (Tomlinson, 2001). We can see how the differentiated instruction approach differs through three questions. The first of these is "What do I differentiate?" (content, process, product and emotional impact/environment); the second is "How do I differentiate?" (interest, readiness,

learning profile); and the third is “Why do I differentiate?” (to increase interest in activities, to achieve more success in activities, to help the child recognize and develop himself/herself) (Öner, 2022; Öztürk et al., 2017; Tomlinson, 2014).

Content includes the concepts to be introduced to children and the materials and mechanisms used for the acquisition of concepts. The aim in content is to decide on the most appropriate content in accordance with children's differences (Tomlinson, 2001). Process is designing activities according to the appropriate content for children, offering choices, and diversifying the learning process. Since children's learning styles are different from each other, the differentiation of the process may vary from child to child (Tomlinson & Allan, 2000). Products are the tools that children create and exhibit during activities and all the materials they use in activities. When differentiating, products should focus on basic knowledge, understanding, skills and specified content objectives (Tomlinson & Imbeau, 2010). Products that encourage children to think and produce creatively can be described as high-quality. Quality products should also be products that benefit the child's learning process and enable children to transform their thoughts and skills into practice. The product should be interesting and challenging for the child. The product is not a short-term response to a few skills. On the contrary, the product emerges in the face of long efforts. With the product, children can get results individually or as a group (Tomlinson, 2014). When differentiating the product, it may vary according to the child. For some children, exhibition work can be done to design visual animations. In other words, differentiation of the product depends on the child (Tomlinson & Mctighe, 2006). Emotional impact/environment is simply the classroom climate (Öner, 2022), which is related to children's emotions and motivation. Learning environments can provide an effective differentiation on children and increase their motivation and make learning permanent and effective. It is important to organize learning environments because they stimulate children's emotions (Tomlinson, 2005). The differentiations that start depending on the characteristics of the child continue and are structured under the control of the teacher. For qualified differentiated instructional practices, teachers need to create opportunities for both children and them. Teachers should consider children's differences when implementing differentiated practices, consider assessment and activities as a whole, make changes in the elements of differentiated instruction, and provide a flexible and collaborative environment (Eidson & Tomlinson, 2003; Hall, 2002; Tomlinson, 2005). Considering that the children in the class come to the classroom with different characteristics, the teacher tries to maximize the development of the children through differentiated teaching activities.

When the literature is examined, there are studies on differentiated instruction at primary and secondary education levels (Dal, 2022; Kula & Karakuş, 2023; Özüdoğru, Sakallıoğlu, Girgin, & Altiner, 2021; Scarparolo & Subban, 2021; Smale-Jacobse, Meijer, Helms-Lorenz, & Maulana, 2019). When the studies were examined, the lack of a study that examines and summarizes the articles related to the differentiated instruction approach in the national and international literature in the field of preschool education was an important factor in the emergence of this study. It was thought that it would be useful to conduct a content analysis to determine which studies are needed and research trends related to the differentiated instruction approach in preschool education. In terms of guiding future studies, it is important to determine the attitudes and interests of the teachers who make differentiation, the training they receive to make differentiation and their views on differentiated instruction as a result of the training, differentiated instruction practices in their classrooms, the size of the study groups and the characteristics of the children they practice, the methods they use, data collection tools, etc. in the studies on differentiated instruction approach in preschool education.

Method

In the study, articles on differentiated instruction in preschool education in the national and international literature between 2005 and 2022 were examined with the descriptive survey model. The survey model provides a quantitative or numerical description of trends, attitudes or opinions about a sample selected from a population (Creswell, 2016). The survey model is a type of research model in which the studies on the selected topic are examined in detail (Çalık & Sözbilir, 2014). Answers to questions such as how, how often and where the content is used are sought (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2014). The studies included in the research were examined by document review. The articles were content analyzed by "Article Classification Form" (Sözbilir & Kutu, 2008).

Purpose and Questions of the Research

The aim of this study is to examine the articles published in the field of differentiated instruction in pre-school education as a result of a search in line with certain criteria. Thus, it is aimed to shed light on academic studies that can be developed on differentiated instruction in preschool education. In line with this main purpose, the following questions were sought to be answered.

1. What is the distribution of the articles according to the years in which they were published?
2. What is the distribution of the articles according to the indexes of the journals in which they are published?
3. What is the distribution of the articles in terms of the subjects they study?
4. What is the distribution of the methods used in the articles?
5. What is the distribution of data analysis methods used in the articles?
6. What is the distribution of data collection sources used in the articles?
7. What is the distribution of data collection tools used in the articles?
8. What is the sample distribution of the articles?
9. What are the results of the articles?

Data Collection

Two criteria, screening and inclusion criteria, were used for the data collection process. In the screening criterion, articles scanned in electronic databases including SCI/SSCI, WOS, ERIC-BEI-EI-AEI, ULAKBIM, SBVT, EKUAL, SCOPUS, Google Scholar, DergiPark and other journals (field-specific preschool and early childhood education journals) between 2005-2022 were selected. For the inclusion criterion, the keywords differentiated/differentiation/ differentiating instruction in preschool and differentiating instruction in early childhood education were used in the filtering process.

The articles included in the study were considered to include differentiated instruction approach, to include teachers, children, prospective teachers, and institution administrators in the field of preschool education, to be published in English or Turkish between 2005 and 2022, and to be full-text accessible articles. Accordingly, 109 articles were identified. In the next steps, in addition to the title and abstract review, full text review was conducted by two independent reviewers and 41 articles were included in the study with the criterion sampling method, one of the purposive sampling methods, in accordance with the criteria. The criterion sampling method provides the opportunity to conduct in-depth research in the context of the purpose of the study and enables the selection of information-rich situations (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2014).

Data Analysis

Content analysis was used to analyze the data. Content analysis is an in-depth examination of studies on a specific subject or field. It is expected to determine the general trends of the studies, to discover neglected themes and concepts, and to benefit future studies (Ültay, Akyurt, & Ültay, 2021). The articles identified by the researchers were analyzed using Miles and Huberman's (1994) reliability formula [$\text{Reliability} = \frac{\text{Agreement}}{\text{Agreement} + \text{Disagreement}}$] and the agreement between the researchers was determined as 95.1%. Agreement above 70% indicates reliability (Miles & Huberman, 1994). The studies included in accordance with the purpose of the study were categorized using the "article classification form" developed by Sözbilir and Kutu (2008) and frequency analysis was used for descriptive statistics. The categorization of the data in this study was influenced by the categories determined as the year of publication, subject distribution, methods used, data collection methods and data analysis methods of the studies included in the study.

Ethical Permissions of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken. Since this research is based on document analysis method, no ethics committee decision is required.

Findings

Studies conducted between 2005 and 2022 in the field of differentiated instruction in preschool education were analyzed descriptively based on the research questions.

Table 1. *Distribution of research by years*

Years	f	%	Article codes
2005	1	2.4	a33
2009	1	2.4	a9
2010	1	2.4	a30
2012	2	4.9	a16, a37
2013	1	2.4	a3
2014	4	9.8	a17, a18, a27, a32
2015	5	12.2	a2, a13, a25, a36, a41
2016	2	4.9	a4, a11
2017	5	12.2	a8, a10, a19, a28, a31
2018	1	2.4	a35
2019	5	12.2	a5, a15, a21, a26, a39
2020	4	9.8	a12, a20, a22, a38
2021	8	19.6	a1, a6, a7, a23, a24, a29, a34, a40
2022	1	2.4	a14
Total	41	100	

Table 1, it is seen that the first article in the field of preschool education was published in 2005. When the distribution of the studies according to years is examined, it is seen that there is continuity since 2009, there are studies on differentiated instruction in the field of preschool education every year, and the highest number of studies was published in 2021 (19.5%).

Table 2. *Journal index where the articles were published*

Published in journal	f	%	Article codes
SCI/SSCI	27	65.8	a2, a3, a7, a8, a10, a11, a12, a14, a15, a16, a17, a18, a19, a23, a24, a26, a27, a29, a30, a31, a32, a33, a35, a36, a37, a38, a40
ERIC-BEI-EI-AEI	10	24.4	a1, a5, a9, a13, a20, a21, a25, a28, a34, a41
ULAKBİM SBVT	2	4.9	a4, a6
Other	2	4.9	a22, a39
Total	41	100	

Table 2, it is seen that SCI/SSCI index (65.9%) is the index with the highest number of publications, followed by ERIC-BEI-EI-AEI (24.4%). ULAKBİM SBVT (4.9%) and other (4.9%) indexes were the least published. It is seen that differentiated instructional approach studies in preschool education are mostly published in SCI/SSCI index journals.

Table 3. *Research designs of the studies*

Research methods	f	%	Article codes
Qualitative	18	43.9	a3, a7, a12, a14, a15, a19, a20, a23, a28, a29, a32, a33, a34, a37, a38, a39, a40, a41,
Quantitative	13	31.7	a4, a5, a6, a8, a9, a13, a16, a18, a21, a22, a25, a26, a36
Mixed	10	24.4	a1, a2, a10, a11, a17, a24, a27, a30, a31, a35
Total	41	100	

Table 3, it is seen that qualitative designs (43.9%) were used the most in the studies, followed by quantitative (31.7%) and mixed (24.4%) designs, respectively.

Table 4. *Research models of the studies*

Research methodology			f	%	Article codes
Quantitative	Experimental	True experimental	5	12.2	a9, a13, a16, a22, a38
		Quasi-experimental	4	9.8	a18, a21, a26, a36
Qualitative	Non-experimental	Screening	3	7.3	a4, a5, a25
		Correlational	2	4.9	a6, a8
	Interactive	Case study	5	12.2	a12, a14, a19, a29, a41
		Action research	2	4.9	a23, a39
		Case study	2	4.9	a3, a34,
	Non-interactive	Document analysis	2	4.9	a7, a15
		Concept Analyse	1	2.4	a40
Phenomenological Approach		1	2.4	a20	
Mixed	Unspecified	Review	1	2.4	a32
			3	7.3	a28, a33, a37
Mixed			10	24.4	a1, a2, a10, a11, a17, a24, a27, a30, a31, a35
Total			41	100	

Table 4, it is seen that there are five full experimental studies, four quasi-experimental studies, three survey studies and two studies using correlation method among the studies conducted in the experimental method using quantitative design. Among the studies using qualitative design, there are five cases, two action research studies and two case studies among non-interactive methods. Among the

qualitative design studies using the interactive method, there are two document analysis, one concept analysis and one review. It is seen that there are three studies that are specified as qualitative design in the studies, but the method is not clear.

Table 5. *Subject of the studies*

Subject of the articles	f	%	Article codes
Teacher trainings and practices	14	34.1	a2, a3, a9, a10, a12, a16, a17, a21, a24, a26, a27, a31, a32, a39
Teacher trainings	7	17.1	a11, a23, a28, a30, a33, a36, a41
Attitude interest determination	7	17.1	a1, a5, a14, a19, a20, a25, a29
Differentiated instruction practices	6	14.6	a7, a13, a22, a34, a37, a38
Curriculum studies	3	7.3	a15, a35, a40
Trainee teacher training	2	4.9	a4, a18
Scale development and adaptation	2	4.9	a6, a8
Total	41	100	

Table 5, it is seen that the most studied topic is teacher trainings and practices (34.1%), followed by teacher trainings (19.5%). These topics are followed by attitude and interest determination (14.6%), differentiated instruction practices (14.6%), and curriculum studies (7.3%). The least studied topics were scale development and adaptation (4.9%) and prospective teacher training (4.9%).

Table 6. *Data collection tools used in the studies*

	Data collection tool	f	%	Article codes
Single data collection tool	Document	7	17.1	a7, a15, a23, a28, a32, a34, a40
	Survey	5	12.2	a4, a5, a18, a25, a36
	Interview	4	9.8	a14, a19, a29, a39
	Scale	4	9.8	a6, a8, a9, a38
	Observation	2	4.9	a33, a37
Two or more data collection tools	Observation and scale	3	7.3	a2, a13, a31
	Survey and interview	2	4.9	a1, a26
	Survey and observation	2	4.9	a30, a35
	Interview and observation	2	4.9	a12, a20
	Observation and Document	2	4.9	a3, a22
	Interview, observation and scale	2	4.9	a24, a27
	Survey and scale	1	2.4	a16
	Survey and Document	1	2.4	a11
	Survey, Interview and observation	1	2.4	a17
	Survey, observation and Document	1	2.4	a10
	Survey, alternative assessment tools and Document	1	2.4	a21
	Interview, observation and Document	1	2.4	a41
Total		41	100	

Table 6, it is seen that there are 22 studies (53.8%) using a single data collection tool and 19 studies (46.2%) using two or more data collection tools. It was determined that one and more than one data collection tools were used in the studies. Considering the high number of studies examining the effects of differentiated instruction approach on teachers' training and training on children's developmental areas as the subject of the studies, as well as the differentiation in the content, process and product dimensions of differentiated instruction, it is seen that many data collection sources are used.

Table 7. *Data analysis methods used in the studies*

Data analysis methods	f	%	Article codes
Qualitative data analysis	18	43.9	a3, a7, a12, a15, a16, a19, a20, a22, a23 a28, a29, a32, a33, a34, a37, a39, a40, a41
Quantitative data analysis	13	31.7	a4, a5, a6, a8, a9, a11, a13, a14, a18, a21, a25, a36, a38
Quantitative and Qualitative data analysis	10	24.4	a1, a2, a10, a17, a24, a26, a27, a30, a31, a35
Total	41	100	

Table 7, it is seen that the most commonly used data analysis method is qualitative data analysis (43.9%), followed by quantitative data analysis (31.7%). The least used data analysis method is quantitative and qualitative data analysis (24.4%). Since various data collection tools are used in the studies, data analysis methods also vary.

Table 8. *Samples of the studies*

Sample	f	%	Article codes
Teacher	15	36.7	a1, a4, a5, a6, a8, a11, a12, a14, a19, a20, a25, a28, a35, a36, a37
Children and teacher	13	31.7	a2, a9, a16, a17, a21, a23, a24, a26, a27, a30, a31, a34, a41
Children	6	14.6	a3, a7, a13, a22, a33, a38
Non-working groups (Document)	3	7.3	a15, a32, a40
Trainee teacher	2	4.9	a18, a29
Children, teachers and school administrators	1	2.4	a39
Teachers and school administrators	1	2.4	a10
Total	41	100	

Table 8, it is found that the most studied groups were "teachers" (36.6%), followed by "children and teachers" (31.7%). These sample groups were followed by "children" (14.6%) and "prospective teachers" (4.9%), and the least studied groups were "teachers and school administrators" (2.4%) and "children, teachers and school administrators" (2.4%). In addition, since there were no participants in the document analysis and compilation studies, there were "no study groups" (7.3%).

Table 9. *Sample size of studies*

Sample size	f	%	Article codes
1-10	10	24.4	a7, a12, a13, a19, a20, a28, a29, a33, a37, a39
11-30	3	7.3	a3, a22, a24
31-100	13	31.7	a4, a10, a11, a14, a17, a18, a21, a30, a34, a35 a36, a38, a41
101-300	6	14.6	a1, a5, a9, a16, a26, a31
301-1000	4	9.8	a2, a6, a23, a25
1001 and more	2	4.9	a8, a27
No sample size (Document)	3	7.3	a15, a32, a40
Total	41	100	

It is seen that 31.7% of the studies have a sample size between "31-100" people, 24.4% between "1-10" people, 14.6% between "101-300" people, 9.8% between "301-1000" people, 7.3% between "11-30" people, and 4.9% between "1001 and more". In addition, it was determined that 7.3% of the studies were "document review studies without sample size" (Table 9). Studies with a small sample size are

those in which only the teacher or the teacher and the children in his/her class are included in the study. On the other hand, studies with a large sample size are scale development studies and studies in which the teacher group and the children in the classroom participated in the study.

Table 10. *Results of the studies*

Teacher trainings	In the trainings given to teachers with differentiated instruction approach, the importance of teachers' motivation, desire and ownership of educational changes is emphasized. In the researches, it was concluded that the trainings provided for teachers to make differentiations in teaching contribute to the professional development of teachers and that the differentiations made have positive effects on the developmental areas of not only children with disabilities but also all children.
Article codes:	a11, a23, a28, a30, a33, a36, a41
Attitude interest identification	Teachers' attitudes and interests differ in the studies analysed. While teachers define differentiated instruction approach as practices that can meet the needs of all children, some studies consider differentiated instruction approach as applying various practices to a group of students or children with special education needs, giving a simple homework, doing fewer activities or applying easier activities. It is seen that teachers' years of experience, classroom conditions and the subjects studied affect differentiated instruction practices. Teachers' attitudes, class size and time are stated as barriers to differentiated instruction.
Article codes:	a1, a5, a14, a19, a20, a25, a29
Scale development and adaptation	In order to measure teachers' perceptions of differentiated instruction approaches and classroom practices, it is seen that the validity and reliability of the Teacher Opinions on Differentiated Instruction Scale (DI-Quest) and the adaptation, validity and reliability study of the same scale into Turkish have been conducted. The scale developed and adapted covers not only preschool teachers but also teachers working at many levels of education. The scale adapted to Turkish consists of 25 items and 5 dimensions. The findings show that the Scale of Teachers' Views on Differentiated Instruction is a valid and reliable measurement tool.
Article codes:	a6, a8
Teacher trainings and practices	With the trainings given to teachers and the right support, it is seen that teachers are successful in the activities they implement using a differentiated instruction approach. It was stated that differentiations for the education of children with disabilities were implemented effectively and positive gains were obtained as a result of the practices. Teachers stated that differentiated instruction practices would benefit not only children with disabilities but also all children, that differentiations should be made according to children's interests, and that it is important to provide training and support to teachers on differentiation. It was stated that the differentiated instruction approach integrated into the implemented projects and programs supported the academic skills of children participating in the Head Start Program. It was found that children in the high-risk group changed faster than other children in the class and achieved gains in literacy and mathematics skills at an equal or slightly lower rate than their peers. In the study of teacher trainings and practices to support the development of children's mathematics skills, it is noted that mathematics skills increase and learning opportunities in proximal developmental areas are highlighted. It was concluded that children's academic performance was positively affected as a result of differentiation by combining different learning styles and more than one content with iPads and technology.
Article codes:	a2, a3, a9, a10, a12, a16, a17, a21, a24, a26, a27 a31, a32, a39
Program studies	In Program studies in which differentiated instruction was integrated, it was concluded that there is a need for activities that include differentiated instruction and that differentiated instruction approach should be provided through pre-service or in-service trainings. In addition, in a study examining the Head Start Program, it was determined that there was insufficient information on how to differentiate writing instruction.
Article codes:	a15, a35, a40
Candidate teacher training	In the studies, prospective teachers stated that they felt inadequate about differentiated instruction and that they needed training, courses, etc. on differentiated instruction. In the results of the studies, significant differences emerged between the prospective teachers who received training or read books on differentiated instruction and those who did not receive any training.
Article codes:	a4, a18
Differentiated teaching practices	It is seen that preschool teachers implement differentiated instruction practices as small group, large group or individual activities. It was found that the teachers worked on topics such as book reading techniques, mathematics skills, supporting academic skills, concept of space, vocabulary acquisition in the differentiated instruction activities they implemented and that they made positive progress in children on these topics.
Article codes:	a7, a13, a22, a34, a37, a38

Discussion and Conclusion

In this study, it was aimed to evaluate the articles published in the field of "differentiated instruction in preschool education" between 2005 and 2022 in terms of the year of publication, the indexes of the journals in which they were published, subject areas, methods and techniques used, data collection sources, data analysis methods, sample distributions, results and to determine the research trends in this field. In line with this purpose, the following results were obtained.

In the distribution of articles published between 2005 and 2022 according to years, it was observed that there was one article in 2005, there were no studies until 2009, the number of studies increased in the following years, and the highest number of studies was in 2021. Since 2014, a similar number of studies have been published in all years except 2018. The education system is constantly changing with information and technology in the light of new trends. In these changes, it is important to organize the education of individuals in the education system according to the requirements of the age and to include every individual in education (Çam & Acat, 2023). In this direction, the fact that the differentiated instruction approach is an approach that responds to the needs of children (Gregory & Chapman, 2002), considers the personal differences of children (Öztürk et al., 2017) and aims to reach each child may have ensured the continuity and increasing number of research on differentiated instruction. In 2022, there is only one study in the field of preschool education that includes a differentiated teaching approach. The Covid-19 pandemic, which is effective in our country and all over the world, may have affected this situation (World Health Organization (WHO), 2020). The fact that the differentiated instruction approach is based on practices (Ankrum, Genest, and Belcastro, 2014; Infurna, 2020; Mavidou and Kakana, 2019) may have caused difficulties in reaching children and teachers in preschool education during the pandemic period. Kula and Karukuş (2023) also found that thesis studies increased mostly in 2018, 2019 and 2020, and reported that the differentiated instruction approach has attracted the attention of more researchers in recent years. In the distribution of the articles included in the study according to the indexes of the journals in which they were published, 65.9% of the articles were published in SCI/SSCI index journals and 24.4% in ERIC-BEI-EI-AEI index journals. It can be said that the articles in the field of differentiated instruction in preschool education are accepted in journals with high indexes. The fact that differentiated instruction is an up-to-date and new research field may explain the number of publications in high indexes.

According to the content analysis of the methods used in the studies, it is seen that the majority of the studies (43.9%) were conducted with qualitative research methods, the rate of quantitative studies was 31.7%, and the rate of mixed method studies was 24.4%. When quantitative research methods are examined, it is seen that there are studies in experimental and non-experimental models. While the full experimental model was used more in experimental studies, the survey model was used more in non-experimental studies, and the correlational model was used in other non-experimental studies. In qualitative studies, it was determined that case study, action research and case study models were used in interactive studies, while phenomenological approach, document analysis and review models were used in non-interactive studies. It can be said that mixed design studies are less than other studies. The low number of quantitative measurement tools related to the differentiated instruction approach may be the reason why qualitative studies are preferred more than quantitative and mixed design studies.

When the types of data collection tools in the studies included in the research are analyzed, it is seen that there are fewer studies using a single data collection tool. Two or more data collection tools (51.2%) were mostly used in the studies. Document (17.1%), survey (12.2%), scale (9.8%), interview (9.8%) and observation were mostly used in studies using single data collection tools. It can be said that multiple data collection tools were used in qualitative studies and mixed design studies due to the diversity, creativity and flexibility of data collection tools and the fact that each research has different characteristics (Yıldırım & Şimşek, 2016). Among the multiple data collection tools, Observation (30.4%) was the most preferred, followed by Survey (19.6%), Scale (17.4%) and Interview (17.4%). The scales and surveys used in the studies were used to evaluate the impact of the practices of the teachers on the children at the end of the differentiated instructional approach training. Since there is almost no measurement tool that can be used in the field of preschool education in differentiated instructional design that can directly measure teachers' practices and competence (Coubergs, Struyven, Vanthournout, and Engels, 2017), data collection tools such as surveys, interviews, and observations developed by researchers were used in the studies.

In the studies included in the research, it is seen that teacher trainings and their effects on various areas and skills of children such as academic achievement (Kotob and Arnouss, 2019), mathematics skills (Lundqvist, Franzén, and Munter, 2021), etc. have been studied more. Determining attitudes and interest towards differentiated instruction, teacher trainings, scale development or adaptation, program studies and differentiated instruction practices are the topics of the articles examined. In the studies, giving trainings to teachers who are practitioners in differentiated instruction approach and then examining the effects of the training on children and differentiated instruction practices are more common than other studies. The reason for this may be that teachers can provide changes in content, process, product and environment, which are the elements of differentiated instruction, based on the characteristics of children in differentiated instruction approach. Teachers should be able to create opportunities for both children and them while implementing differentiated instruction (Tomlinson & Eidson, 2003; Hall, 2002). In the studies examined, it can be thought that the trainings given to teachers change their perspectives on differentiated instruction approach, improve their educational equipment necessary for differentiated instruction approach practices, and as a result, differentiated instruction practices applied to children are beneficial for both teachers and children (Powell & Napoliello, 2005; Sornson, 2015; Wu & Chang, 2015). In this direction, Doğrukök (2022) concluded that supporting teachers in differentiated instruction through training provided to teachers increased the interest of gifted children in their classes in learning and improved their thinking skills. Yenmez and Özpınar (2017) provided training to teachers on differentiated instruction and concluded that teachers' practices can be improved with the opinions of other teachers and students. The results of these studies are consistent with the study topics addressed in the research findings. When the data analysis methods of the articles are examined, it is seen that qualitative data analysis methods are used 43.9%, quantitative data analysis methods 31.7%, both quantitative and qualitative data analysis 24.4%. Descriptive analysis, frequency and percentage, predictive analysis, manova, cluster analysis, t test, factor analysis, correlational and non-parametric tests were used in quantitative data analysis, and it was determined that content analysis was mostly used in qualitative data analysis. The researchers who used both qualitative and quantitative data analysis used both quantitative and qualitative tools as data collection tools in their studies. It is thought that the reason for using both quantitative and qualitative data analysis methods is that the differentiated instruction approach has many variables (elements,

characteristics of children, principles of differentiation, etc.) and the number of scales related to the differentiated instruction approach in preschool education is very low.

In the sample selection of the analyzed articles, it is seen that teachers are mostly included with a rate of 36.6%, followed by both children and teachers with a rate of 31.7%. In the sample group, 14.6% of the studies included only children. The studies involving administrators were the least with 4.9% and the studies involving candidate teachers were the least with 4.9%. The differentiated instruction approach puts children at the center and contributes to their development by including every child in the activities (Lawrence-Brown, 2004). For this reason, the samples of the studies we analyzed included mostly children and teachers. It is seen that the effects of differentiated instructional approach practices on children were measured in studies where only children were included in the sample. It was concluded that studies were mostly conducted in small sample groups, and the number of studies with a sample size between 31-100 was higher (31.7%). Studies with small sample sizes included only teachers or teachers and children in teachers' classrooms. Studies with large sample sizes are scale development or adaptation and program studies.

According to the results of the research, it can be said that studies on differentiated instruction in preschool education are less than other levels of education and should be increased. It is important that teachers have sufficient professional knowledge and skills to design and implement differentiated instruction. Research has shown that teachers need training on differentiated instruction and do not have the skills and equipment necessary for differentiated instruction (Dijkstra, Walraven, Mooij, & Kirschner, 2017; Infurna, 2020; Kotob & Arnouss, 2019). In theory, it requires effort to implement differentiated teaching practices with different learning methods and techniques and activities for children's differences (Tomlinson & Imbeau 2010). In order for differentiated instruction practices to benefit children, teachers need to know this approach well (Santangelo & Tomlinson 2012). In Tomlinson's (2014) differentiated instruction model, the concept of teachers' mindset emerges. Teachers' mindsets can affect their success in implementing differentiated instruction (Coubergs, Struyven, Vanthournout, & Engels, 2017). Professional development programs can help teachers develop their competencies to implement differentiated instruction in their classrooms by providing them with the complex structure, philosophy, and practices of differentiated instruction (Navrátilová, 2017; Sornson, 2015; Wu & Chang, 2015). It is thought that a systematic program in preschool education should include differentiated instruction flexibly. Factors such as school climate, resources, administrators, etc. and teachers' attitudes may pose barriers to the design and implementation of differentiated instruction (Dijkstra, Walraven, Mooij, & Kirschner, 2017). School administrators are responsible for the education and training of all children, and it is thought that providing trainings on differentiated instruction to school administrators will benefit both teachers and children.

Recommendations

Since the differentiated instruction approach is new and the first article in the field of preschool education was published in 2002, the number of studies is limited (Wertheim & Leyser, 2002). It is seen that teachers' and pre-service teachers' attitudes and interest in differentiated instruction are at low levels due to lack of knowledge about differentiated instruction. Differentiated instruction approach is mostly accepted as practices that teachers should perform, and in-service trainings on differentiated instruction approach can help to improve teachers' practices and competencies. As in the program studies, it is thought that the differentiated instruction approach can be used not only for children with

disabilities but also for all children in many skills and development areas such as mathematics, language development and academic achievement areas of children and can have positive effects on the development areas of all children. With the differentiated instruction approach in preschool education, studies can be conducted in different subjects to support the developmental areas and skills of all children. The development of valid and reliable measurement tools that can be used in preschool education can make a great contribution to the field, especially since there are almost no data collection tools related to differentiated instruction in the field of preschool education. School administrators provide the greatest support to teachers in their practices at school and school administrators can be included in research on differentiated instruction approach. Since differentiated instruction studies are applied studies, practical studies can be included in the field of preschool education. In future studies, conceptual research on differentiated instruction approach in preschool education can also be conducted.

References

- Algozzine, B., & Anderson, K. M. (2007). Tips for teaching: Differentiating instruction to include all students. *Preventing School Failure: Alternative Education for Children and Youth*, 51(3), 49-54.
- Avcı, S., & Yüksel, A. (2016). *Farklılaştırılmış öğretim teori ve uygulama* [Differentiated instruction theory and practice]. Nobel.
- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2014). *Bilimsel araştırma yöntemleri* [Scientific research methods]. Pegem Academy.
- Creswell, J. W. (2016). *Araştırma deseni: Nitel, nicel ve karma yöntem yaklaşımları* [Research design: Qualitative, quantitative and mixed methods approaches]. Educating Book.
- Çalık, M., & Sözbilir, M. (2014). İçerik analizinin parametreleri [Parameters of content analysis]. *Education and Science*, 39(174), 33-38
- Çam, Ş. S., & Acat, M. B. (2023). Öğretmenlerin farklılaştırılmış öğretim yaklaşımını uygulama ve buna ilişkin yetkinlik düzeyleri [Teachers' application of the differentiated teaching approach and their competency levels]. *Muş Alparslan University Faculty of Education Journal*, 3(1), 96-120.
- Dal, E. (2022). *Farklılaştırılmış öğretim araştırmalarının eğilimi: Bibliyometrik ve içerik analizi* [The trend of differentiated teaching research: Bibliometric and content analysis]. (Tez No. 770978). [Master Thesis, Amasya University], National Thesis Center.
- Doğrukök, B. (2022). *Sosyal bilgiler öğretmenlerine uygulanan farklılaştırma eğitiminin öğretmenlerin ve özel yetenekli öğrencilerin becerileri üzerine etkilerinin incelenmesi* [Examining the effects of differentiated training applied to social studies teachers on the teachers' and talented students' skill]. (Tez No. 752619). [Doctoral dissertation, Necmettin Erbakan University], National Thesis Center.
- Eidson, C. C., & Tomlinson, C. A. (2003). *Differentiation in practice: A resource guide for differentiating curriculum: Grades K-5*. ASCD.
- Fogarty, R. J., & Pete, B. M. (2011). *Supporting differentiated instruction: A professional learning communities approach*. Solution Tree.
- Fox, J., & Hoffman, W. (2011). *The differentiated instruction: Book of lists*. John Wiley & Sons Inc.
- George, P. S. (2005). A rationale for differentiating instruction in the regular classroom. *Theory Into Practice*, 44(3), 185-193.
- Gregory, G. H., & Chapman, C. (2012). *Differentiated instructional strategies: One size doesn't fit all*. Corwin.
- Hall, T. (2002). *Differentiated instruction. National center on accessing the general curriculum (NCAC)*, Wakefield, MA.
- Hall, T., Strangman, N., & Meyer, A. (2014). *Differentiated instruction and implication for UDL implementation*. (Research Report). Access of date: 26.03.2023 https://sde.ok.gov/sites/ok.gov.sde/files/DI_UDL.pdf
- Hertberg-Davis, H. L., & Brighton, C. M. (2006). Support and sabotage principals' influence on middle school teachers' responses to differentiation. *Journal of Secondary Gifted Education*, 17(2), 90-102.
- Kula, S. S., & Karakuş, R. (2023). Farklılaştırılmış öğretim ile ilgili lisansüstü tezlerin analizi [Analysis of postgraduate theses on differentiated instruction]. *International Psycho-Social Education Research*, 3(4), 1-19.
- Lawrence-Brown, D. (2004). Differentiated instruction: Inclusive strategies for standards-based learning that benefit the whole class. *American Secondary Education*, 32(3), 34-62.
- Marginson, S., & Dang, T. K. A. (2017). Vygotsky's sociocultural theory in the context of globalization. *Asia Pacific Journal of Education*, 37(1), 116-129.
- McLeod, S. (2020). Lev Vygotsky's sociocultural theory. Access of date: 25.01.2023 <https://www.simplypsychology.org/vygotsky.html>
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.
- Mills, M., Monk, S., Keddie, A., Renshaw, P., Christie, P., Geelan, D., & Gowlett, C. (2014). Differentiated learning: From policy to classroom. *Oxford Review of Education*, 40(3), 331-348.
- Moore, K. D. (2005). *Effective instructional strategies: From theory to practice*. Sage.
- Öner, G. (2022). Farklılaştırılmış öğretim [Differentiated instruction]. In Doğan, Y. (Ed.), *Öğrenmede bireysel farklar* [Individual differences in learning] (pp. 71-84). Efe Academy.

- Özer, S., & Yılmaz, E. (2016). Farklılaştırılmış öğretim [Differentiated instruction]. In E. Yılmaz, M. Çalışkan & S. A. Sulak (Eds.), *Eğitim bilimlerinden yansımalar* [Reflections from educational sciences] (pp.127-140). Çizgi Kitabevi.
- Öztürk, M., Tepetaş Cengiz, G. Ş., Köksal, H., & İrez, S. (2017). *Sınıfında yabancı uyruklu öğrenci bulunan öğretmenler için el kitabı* [Handbook for teachers who have foreign students in their classrooms]. MEB.
- Özüdoğru, F., Sakallıoğlu, G., Girgin, A., & Altınar, N. (2021, December) *Türkiye’de farklılaştırılmış öğretim konusunda yapılan araştırmaların incelenmesi* [Review of research on differentiated instruction in Turkey]. *ERTE Congress 1st International Education Research And Teacher Education Congress* (pp. 87-109).
- Santangelo, T., & Tomlinson, C. A. (2012). Teacher educators' perceptions and use of differentiated instruction practices: An exploratory investigation. *Action in Teacher Education*, 34(4), 309-327.
- Scarparolo, G., & Subban, P. (2021). A systematic review of pre-service teachers' self-efficacy beliefs for differentiated instruction. *Teachers and Teaching*, 27(8), 753-766.
- Schofield, J. W. (2010). International evidence on ability grouping with curriculum differentiation and the achievement gap in secondary schools. *Teachers College Record*, 112(5), 1492-1528.
- Smale-Jacobse, A. E., Meijer, A., Helms-Lorenz, M., & Maulana, R. (2019). *Differentiated instruction in secondary education: A systematic review of research evidence*. *Frontier's Psychology*, 10, 1-23.
- Smit, R., & Humpert, W. (2012). Differentiated instruction in small schools. *Teaching and teacher education*, 28(8), 1152-1162.
- Sozbilir, M., & Kutu, H. (2008). Development and current status of science education research in Turkey. *Essays in Education*, 24(1), 1-22.
- Subban, P. (2006). Differentiated instruction: A research basis. *International Education Journal*, 7(7), 935-947.
- Suprayogi, M. N., Valcke, M., & Godwin, R. (2017). Teachers and their implementation of differentiated instruction in the classroom. *Teaching and Teacher Education* 67(67):291- 301.
- Thousand, J. S., Villa, R. A., & Nevin, A. I. (2007). *Differentiating instruction: Collaborative planning and teaching for universally designed learning*. Corwin.
- Tomlinson, C. A. (1999). *The differentiated classroom: Responding to the needs of all learners*. Association for Supervision & Curriculum Development.
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed ability classrooms* (2nd ed.). Association for Supervision & Curriculum Development.
- Tomlinson, C. A. (2005). Traveling the road to differentiation in staff development. *National Staff Development Council* 26(4), 8-12.
- Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). Association For Supervision & Curriculum Development.
- Tomlinson, C. A., & Imbeau, M. B. (2010). *Leading and managing a differentiated classroom*. Association for Supervision & Curriculum Development.
- Tomlinson, C. A., & McTighe, J. (2006). *Integrating differentiated instruction and understanding by design: Conceting content and kids*. Association for Supervision & Curriculum Development.
- Tomlinson, C. A., Brighton, C., Hertberg, H., Callahan, C. M., Moon, T. R., Brimijoin, K., ..., & Reynolds, T. (2003). Differentiating instruction in response to student readiness, interest, and learning profile in academically diverse classrooms: A review of literature. *Journal for the Education of the Gifted*, 27(2-3), 119-145.
- Tomlinson, C., & Allan, S. D. (2000). *Leadership in differentiating schools and classrooms*. Association of Supervision & Curriculum Development.
- Ültay, E., Akyurt, H., & Ültay, N. (2021). Sosyal bilimlerde betimsel içerik analizi [Descriptive content analysis in social sciences]. *IBAD Journal of Social Sciences*, (10), 188-201.
- World Health Organization [WHO] (2020). Covid19 Coronavirus Disease 2019 Situation Report – 72. World Health Organization. Access of date: 15.05.2022 <https://pers.droneemprit.id/covid19/>
- Yenmez, A. A., & Özpınar, İ. (2017). Öğretmenlerin farklılaştırılmış öğretim uygulama pratikleri: Öğrenim süreci üzerine öğretmen ve öğrenci düşünceleri [Teachers' differentiated teaching practices: Teacher and student thoughts on the learning process]. *Trakya University Faculty of Education Journal*, 7(2), 344-363.
- Yıldırım, A., & Şimşek, H. (2016). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in social sciences]. Seçkin.

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 50%

Author 2: 50%

Conflict Statement

There are no financial or personal organic ties with the individuals or organizations involved in the research and there is no conflict of interest related to the research.

Genişletilmiş Türkçe Özet



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

2005-2022 Yılları Arasında Okul Öncesi Eğitimde Farklılaştırılmış Öğretim Yaklaşımı ile İlgili Yapılan Araştırmaların İncelenmesi

Giriş

Günümüz okul öncesi eğitim sınıflarında çocukların farklılıkları ile başa çıkma konusundaki sorun her geçen gün artmaktadır. Gün geçtikçe çocukların öğrenme stili, motivasyon, yetenek, ihtiyaç, ilgi gibi özelliklerinin farklılaştığının bilincine varılmakta ve bu farklılaşma hem çocuğun hem de sınıf ve okul performansını etkilemektedir. Öğretmenler ise bu farklılıklara, bireysel öğrenmelerdeki seviye çeşitliliğine uyum sağlamada önemli sorumluluğu olan ilk kişilerdir (George, 2005; Subban, 2006; Moore, 2005; Tomlinson vd., 2003). Standart öğretim yaklaşımı günümüzde bütün çocukların ihtiyaçlarını karşılamayarak farklı özelliklerini göz ardı etmektedir (Fox & Hoffman, 2011; Subban, 2006). Buna karşılık farklılaştırılmış öğretim yaklaşımında öğretmenler, çocuklar arasındaki farklılıkları göz önünde bulundurup çocukların güçlü yanlarını kabul etmektedirler (George, 2005; Subban, 2006; Tomlinson vd., 2003).

Alanyazın incelendiğinde farklılaştırılmış öğretim ile ilgili ilköğretim ve ortaöğretim kademelerinde çalışmalar yer almaktadır (Dal, 2022; Kula & Karakuş, 2023; Özüdoğru, Sakallıoğlu, Girgin, & Altın, 2021; Scarparolo & Subban, 2021; Smale-Jacobse, Meijer, Helms-Lorenz, & Maulana, 2019). Çalışmalar incelendiğinde okul öncesi eğitim alanında ulusal ve uluslararası alan yazında farklılaştırılmış öğretim yaklaşımı ile ilgili makaleleri inceleyip özetleyen bir araştırmanın olmayışı bu çalışmanın ortaya çıkmasında önemli bir etken olmuştur. Okul öncesi eğitimde farklılaştırılmış öğretim yaklaşımı ile ilgili olarak hangi çalışmalara gereksinim duyulduğunun ve araştırma eğilimlerinin belirlenmesi için bir içerik analizinin yapılmasının yararlı olacağı düşünülmüştür. Daha sonra yapılacak çalışmalara yol göstermesi açısından okul öncesi eğitimde farklılaştırılmış öğretim yaklaşımı ile ilgili

olarak yapılan çalışmalarda farklılaştırmayı yapan öğretmenlerin tutum ve ilgileri, farklılaştırma yapmak için aldıkları eğitim ve eğitim sonucundaki farklılaştırılmış öğretime bakışları, sınıflarındaki farklılaştırılmış öğretim uygulamaları, çalışma gruplarının büyüklüğü ve uygulama yaptıkları çocukların özellikleri, kullandıkları yöntem, veri toplama araçları vb. özelliklerin kullanıldığının belirlenmesi bu çalışmayı önemli kılan hususlardandır.

Yöntem

Bu araştırmanın amacı belirli kriterler doğrultusunda yapılan tarama sonucunda okul öncesi eğitimde farklılaştırılmış öğretim alanında yayınlanmış makaleleri incelemektir. Böylece okul öncesi eğitimde farklılaştırılmış öğretim konusunda geliştirilebilecek akademik çalışmalara ışık tutması amaçlanmaktadır. Araştırma 2005-2022 yılları arasında ulusal ve uluslararası literatürde, okul öncesi eğitimde farklılaştırılmış öğretim konusunda hazırlanmış makalelerin incelenmesine dayalı olduğu için betimsel tarama modeli çalışmanın yöntemi olarak tercih edilmiştir. Araştırmaya dâhil olan çalışmalar doküman incelemesi yapılarak incelenmiştir. Makaleler “Makale Sınıflama Formu” (Sözbilir ve Kutu, 2008) kullanılarak içerik analizi yapılmıştır. Araştırmada veri toplama süreci için tarama ve içerme kriterleri olmak üzere iki ölçüt kullanılmıştır. Tarama ölçütünde 2005-2022 yılları içinde SCI/SSCI, WOS, ERIC-BEI-EI-AEI, ULAKBİM, SBVT, EKUAL, SCOPUS, Google Scholar, DergiPark ve diğer dergilerin (alana özgü okul öncesi ve erken çocukluk eğitimi dergileri) bulunduğu elektronik veri tabanlarında taranan makaleler seçilmiştir. İçerme ölçütü için ise kullanılan filtrelemede, okul öncesinde farklılaştırılmış öğretim (differentiated/differentiation/ differentiating instruction in preschool), erken çocukluk eğitiminde farklılaştırılmış öğretim (differentiated/differentiation/ differentiating instruction in early childhood education) anahtar kelimeleri kullanılmıştır.

Araştırmaya dâhil edilen makaleler; farklılaştırılmış öğretim yaklaşımını içermesi, çalışmaların okul öncesi eğitim alanında öğretmen, çocuk, aday öğretmenler, kurum yöneticilerini içermesi, 2005-2022 yılları arasında İngilizce veya Türkçe dilinde yayınlanmış olması ve tam metin ulaşılabilir makaleler olması kriterleri dikkate alınmıştır. Bu doğrultuda 109 makale belirlenmiştir. Sonraki adımlarda başlık ve özet taramasına ek olarak tam metin incelemesi iki bağımsız değerlendirici tarafından yapılmış olup kriterlere uygun olarak amaçsal örnekleme yöntemlerinden ölçüt örnekleme yöntemi ile 41 makale araştırmaya dâhil edilmiştir. Verilerin çözümlenmesinde içerik analizi kullanılmıştır. İçerik analizi, belirli bir konuda ya da alanda yapılmış olan çalışmaların derinlemesine incelenmesidir. Çalışmanın amacına uygun olarak dâhil edilen araştırmalar Sözbilir ve Kutu (2008) tarafından geliştirilen “makale sınıflama formu” kullanılarak kategorik olarak incelenmiş ve betimsel istatistikleri için frekans analizi kullanılmıştır. Bu araştırmada verilerin kategorik hale getirilmesi, çalışmaya dâhil edilen araştırmaların yayınlanma yılı, konu dağılımı, kullanılan yöntemler, veri toplama yöntemleri ve veri analiz yöntemleri olarak belirlenen kategoriler etkili olmuştur.

Bulgular

Okul öncesi eğitimde farklılaştırılmış öğretim alanında 2005-2022 yılları arasında yapılan çalışmalar, araştırma soruları temel alınarak betimsel analizleri yapılmıştır.

Okul öncesi eğitim alanında ilk makalenin 2005 yılında yapıldığı görülmektedir. Çalışmaların yıllara göre dağılımına bakıldığında 2009 yılından itibaren süreklilik gösterdiği, her yıl okul öncesi eğitim alanında farklılaştırılmış öğretim konulu çalışmaların yer aldığı ve en fazla sayıda araştırmanın 2021 (%19.5) yılında yayınlandığı görülmektedir. Okul öncesi eğitimde farklılaştırılmış öğretim

yaklaşım çalışmalarının daha çok SCI/SSCI indeks dergilerde yayınlandığı görülmektedir. Araştırmalarda en fazla nitel desenlerin (%43.9) kullanıldığı, bunu sırası ile nicel (31.7) ve karma (%24.4) desenlerin izlediği görülmektedir. Araştırmaların yöntemleri incelendiğinde nicel desenin kullanıldığı deneysel yöntemde yapılan araştırmalar arasında tam deneysel beş, yarı deneysel dört, deneysel olmayan yöntemde yapılan araştırmalar arasında ise üç tarama ve iki korelasyon yöntemi kullanan çalışma olduğu görülmektedir. Nitel desen kullanılan araştırmalar arasında etkileşimsiz yöntemler arasında beş durum, iki eylem araştırması ve iki vaka çalışması bulunmaktadır. Etkileşimli yöntemin kullanıldığı nitel desende çalışmalar arasında ise iki doküman analizi, bir kavram analizi ve bir derleme yer almaktadır. Araştırmalarda nitel desen olarak belirtilen fakat yöntemi belli olmayan üç araştırma yer aldığı görülmektedir.

Araştırmalarda en fazla çalışılan konunun öğretmen eğitimleri ve uygulamaları (%34.1), ikinci sırada ise öğretmen eğitimleri (%19.5) yer aldığı görülmektedir. Bu konuları sırası ile tutum ilgi belirleme (14.6), farklılaştırılmış öğretim uygulamaları (%14.6), program çalışmaları (%7.3) konuları takip etmektedir. En az çalışılan konular ise ölçek geliştirme ve uyarlama (%4.9) ve aday öğretmen eğitimi (%4.9) konuları olduğu belirlenmiştir. Çalışmaların konusu olarak farklılaştırılmış öğretim yaklaşımının öğretmenlere eğitimi ve eğitimlerin çocukların gelişim alanlarına etkisini inceleyen çalışmaların fazla olması ayrıca farklılaştırılmış öğretimin içerik süreç ve ürün boyutunda farklılaştırılmaların olduğu göz önüne alındığında birçok veri toplama kaynaklarının kullanıldığı görülmektedir. Araştırmaların veri analizi yöntemleri incelendiğinden çeşitli veri toplama araçları kullanılmasından dolayı veri analiz yöntemleri çeşitlilik göstermektedir. Örneklem grubu olarak en fazla "öğretmenler" (36.6) ile çalışıldığı ikinci olarak ise "çocuk ve öğretmenler" (%31.7) ile çalışıldığı saptanmıştır. Araştırmaların örneklem büyüklüğü sayılarının %31.7'sinin "31-100" kişi arasında, %24.4'ünün "1-10" kişi arasında, %14.6'sının "101-300" kişi arasında, %9.8'inin "301-1000" kişi arasında, %7.3'ünün "11-30" kişi arasında, %4.9'unun "1001 ve daha fazla" sayıda olduğu görülmektedir. Örneklem büyüklüğü az olan çalışmalar sadece öğretmen ile ya da öğretmen ve sınıfındaki çocukların çalışmaya dâhil olduğu çalışmalardır. Örneklem büyüklüğü fazla olan çalışmalar ise ölçek geliştirme ve öğretmen grubu ve sınıfındaki yer alan çocukların araştırmaya katıldığı çalışmalar olarak yer almaktadır.

Çalışmaların sonuçları, öğretmen eğitimleri ölçek geliştirme ve uyarlama öğretmen eğitimleri ve uygulamaları, aday öğretmen eğitimi, program çalışmaları ve farklılaştırılmış öğretim uygulamaları temalarında toplanmıştır. Çalışılan bu konularda öğretmenlere ve çocuklara farklılaştırılmış öğretim yaklaşımında bir çok fayda sağlanmıştır. Okul öncesi eğitim alanında farklılaştırılmış öğretim yaklaşımına ışık tutmuştur.

Tartışma ve Sonuç

2005-2022 yılları arasında yayınlanan makalelerin yıllara göre dağılımına bakıldığında 2005 yılında bir makale yer alırken 2009 yılına kadar çalışmaların olmadığı, daha sonraki yıllarda çalışmaların sayıca artış gösterdiği, en fazla sayıda çalışmanın 2021 yılında yer aldığı görülmüştür. Bu doğrultuda farklılaştırılmış öğretim yaklaşımının, çocukların gereksinimlerine cevap veren (Gregory ve Chapman, 2002), çocukların kişisel farklılıkları göz önünde bulunduran (Öztürk vd., 2017) her bir çocuğa ulaşmayı amaçlayan bir yaklaşım olması farklılaştırılmış öğretim ile ilgili araştırmaların sürekliliğini ve sayısının her geçen gün artmasını sağlamış olabilir. Kula ve Karukuş (2023) yapmış olduğu lisansüstü tezlerin incelenmesi çalışmasında tez çalışmalarının daha çok 2018, 2019 ve 2020

yılında arttığını bularak benzer sonuçlara ulaşmış ve bunu son yıllarda farklılaştırılmış öğretimi yönelik daha fazla araştırmacının ilgisini çektiğini raporlamışlardır. Çalışmaya dâhil olan makaleler yayımlandığı dergilerin tarandıkları indekslere göre dağılımında, makalelerin %65.9'u SCI/SSCI indeks dergilerde %24.4'si ERIC-BEI-EI-AEI indeks dergilerde yayınlanmıştır. Okul öncesi eğitimde farklılaştırılmış öğretim alanındaki makalelerin tarandıkları indekslere göre yüksek olan dergilerde kabul gördükleri söylenebilir. Farklılaştırılmış öğretimin güncel ve yeni bir araştırma alanı olması yüksek indekslerdeki yayın sayısını açıklayabilir. İncelenen çalışmalarda kullanılan yöntemlerin içerik analizi yapıldığında çalışmaların büyük bir çoğunluğunun (%43.9) nitel araştırmaya yöntemleriyle yapıldığı, nicel çalışmaların oranının %31.7 olduğu, karma yöntem çalışmalarının oranının ise %24.4 olduğu görülmektedir. Karma desen çalışmaların diğer araştırmalara göre daha az olduğu söylenebilir. Farklılaştırılmış öğretim yaklaşımı ile ilgili nicel ölçme araçlarının sayısının az olması nitel çalışmaların, nicel ve karma desen çalışmalardan daha fazla tercih edilmesinin nedeni olabilir. Ayrıca Farklılaştırılmış öğretim tasarımında okul öncesi eğitim alanında kullanılacak doğrudan öğretmenlerin uygulamalarını, yeterliliğini ölçebilecek ölçme aracı yok denecek seviyede olduğundan (Coubergs, Struyven, Vanthournout ve Engels, 2017) çalışmalarda daha çok araştırmacılar tarafından geliştirilen anket, görüşme, gözlem gibi veri toplama araçları kullanılmıştır.

Makaleler konularına göre incelendiğinde daha çok öğretmen eğitimleri ve eğitimlerin çocukların akademik başarıları (Kotob ve Arnouss, 2019), matematik becerileri (Lundqvist, Franzén ve Munter, 2021) vb. çeşitli alan ve becerilerine olan etkisinin çalışıldığı görülmektedir. İncelenen araştırmalarda öğretmenlere verilen eğitimler sonucunda öğretmenlerin farklılaştırılmış öğretim yaklaşımına bakış açılarının değiştirildiği, farklılaştırılmış öğretim yaklaşımı uygulamaları için gerekli olan eğitimsel donanımlarının geliştirildiği bunun sonucunda çocuklara uygulanan farklılaştırılmış öğretim uygulamalarının hem öğretmene hem de çocuklara faydalı olduğu düşünülebilir (Powell ve Napoliello, 2005; Sornson, 2015; Wu ve Chang, 2015). Bu çalışmaların sonuçları araştırma bulgularında ele alınan çalışma konuları ile tutarlılık göstermektedir. Makalelerin verileri analiz etme yöntemleri incelendiğinde nitel veri analizi yöntemleri %43.9 nicel veri analiz yöntemleri %31.7, hem nicel hem de nitel veri analizi %24.4 oranında kullanıldığı görülmektedir. Hem nicel hem nitel veri analiz yöntemini kullanmalarının nedeni farklılaştırılmış öğretim yaklaşımının birçok değişkeninin (öğeleri, çocukların özellikleri, farklılaştırmanın ilkeleri vb.) olması ve okul öncesi eğitimde farklılaştırılmış öğretim yaklaşımı ile ilgili ölçek sayısının çok az olmasından kaynaklandığı düşünülmektedir. İncelenen makalelerin örneklem seçiminde %36.6 oranı ile en çok öğretmenlerin dâhil edildiği, daha sonrasında ise hem çocuk hem de öğretmenlerin %31.7 oranı ile dâhil edildikleri görülmektedir. Örneklem grubunda %14.6 oranı ile sadece çocukların olduğu çalışmalar yer almaktadır. Yöneticilerin dâhil edildiği çalışma %4.9 ve aday öğretmenlerin dâhil edildiği %4.9 oranı ile en az bulunan çalışmalardır. Farklılaştırılmış öğretim yaklaşımı çocukları merkeze almakta ve her çocuğu etkinliklere dâhil ederek çocukların gelişimlerine katkı sağlamaktadır (Lawrence-Brown, 2004).

Araştırma sonuçlarına göre okul öncesi eğitimde farklılaştırılmış öğretime yönelik çalışmaların diğer eğitimdeki kademelere göre az olduğu ve artırılması gerektiği söylenebilir. Öğretmenlerin farklılaştırılmış öğretim tasarlama ve uygulama konusunda yeterli mesleki bilgi ve yeteneğe sahip olmaları önemlidir. Araştırmalar öğretmenlerin farklılaştırılmış öğretim konusunda eğitimleri ihtiyaç duydukları ve farklılaştırılmış öğretim için gerekli olan beceri ve donanımlara sahip olmadıklarını göstermiştir (Dijkstra, Walraven, Mooij, & Kirschner, 2017; Infurna, 2020; Kotob, Arnouss, 2019). Okul öncesi eğitimde sistematik bir programın içine farklılaştırılmış öğretimi esnek olarak yer vermesi

gerektiđi düşünölmektedir. Sistematik programın okul iklimi, kaynaklar, yöneticiler vb. faktörler ve öğretmen tutumları farklılaştırılmış öğretimin tasarlanması ve yürütülmesinde engeller teşkil edebilmektedirler (Dijkstra, Walraven, Mooij, & Kirschner, 2017). Okul yöneticileri tüm çocukların eğitim ve öğretiminden sorumlu kişiler olup okul yöneticilerine farklılaştırılmış öğretim ile ilgili eğitimler verilmesinin hem öğretmenlere hem de çocuklara fayda sağlayacağı düşünölmektedir.

Öneriler

Farklılaştırılmış öğretim yaklaşımının yeni olması, okul öncesi eğitim alanında ilk makalenin 2002 yılında yayınlanmış olması nedeni ile çalışmaların sayısının sınırlı olduđu görölmektedir (Wertheim & Leyser, 2002). Öğretmenlerin ve öğretmen adaylarının farklılaştırılmış öğretime olan tutum ve ilgilerinin farklılaştırılmış öğretim hakkında bilgi eksikliğinden dolayı düşük seviyelerde olduđu görölmektedir. Farklılaştırılmış öğretim yaklaşımı çoğunlukla öğretmenlerin gerçekleştirilmesi gereken uygulamalar olarak kabul edilmekte olup farklılaştırılmış öğretim yaklaşımı ile ilgili hizmet içi eğitimlerle öğretmenlerin uygulamaları ve yeterliliklerinin geliştirilmesine yardımcı olunabilir. Program çalışmalarında da olduđu gibi farklılaştırılmış öğretim yaklaşımının çocukların matematik, dil gelişimi ve akademik başarı alanları gibi birçok beceri ve gelişim alanında sadece engelli çocuklar için değil tüm çocuklar için kullanabileceđi ve tüm çocukların gelişim alanlarına olumlu etkileri olabileceđi düşünölmektedir. Okul öncesi eğitimde farklılaştırılmış öğretim yaklaşımı ile tüm çocukların gelişim alanlarını, becerilerini destekleyecek şekilde farklı konularda çalışmalar yapılabilir. Özellikle okul öncesi eğitim alanının farklılaştırılmış öğretim ile ilgili veri toplama araçlarının neredeyse yok denecek kadar az olmasından dolayı okul öncesi eğitimde kullanılacak geçerli ve güvenilir ölçme araçlarının geliştirilmesi alana büyük katkı sağlayabilir. Öğretmenlerin okuldaki uygulamalarında en büyük destek sağlayan okul yöneticileri olup farklılaştırılmış öğretim yaklaşımı ile ilgili araştırmalara okul yöneticilerinin dahil edilmesi sağlanabilir. Farklılaştırılmış öğretim çalışmaları uygulamalı çalışmalar olduğundan dolayı okul öncesi eğitim alanında uygulamaya dönük çalışmalara yer verilebilir. Daha sonraki araştırmalarda okul öncesi eğitimde farklılaştırılmış öğretim yaklaşımı ile ilgili kavramsal araştırmalar da yapılabilir.

Appendix 1. Articles Analyzed in the Study and Codes

- a1. Al-Shaboul, Y., Al-Azaizeh, M., & Al-Dosari, N. (2021). Differentiated instruction between application and constraints: teachers' perspective. *European Journal of Educational Research*, 10(1), 127-143.
- a2. Al Otaiba, S., Folsom, J. S., Wanzek, J., Greulich, L., Waesche, J., Schatschneider, C., & Connor, C. M. (2016). Professional development to differentiate kindergarten tier 1 instruction: can already effective teachers improve student outcomes by differentiating tier 1 instruction?. *Reading & Writing Quarterly*, 32(5), 454-476.
- a3. Ankrum, J. W., Genest, M. T., & Belcastro, E. G. (2014). The power of verbal scaffolding: "Showing" beginning readers how to use reading strategies. *Early Childhood Education Journal*, 42, 39-47.
- a4. Aşıroğlu, S. C. (2016). Okulöncesi öğretmen adaylarının farklılaştırılmış öğretim konusundaki öz-yeterliklerine ilişkin görüşleri. [The viewpoints of preschool teacher candidates on their self-efficiency levels in differentiated education]. *Mersin University Journal of The Faculty of Education*, 12(3), 948-960.
- a5. Bogen, E. C., Schlendorf, C. P., Nicolino, P. A., & Morote, E. S. (2019). Instructional strategies in differentiated instruction for systemic change. *Journal for Leadership and Instruction*, 18(2), 18-22.
- a6. Cengiz, G. Ş. T., Tezcan, T., & Doğan, Ö. K. (2021). Farklılaştırılmış öğretime ilişkin öğretmen görüşleri ölçeği (DI-QUEST): Türkçe'ye uyarlama, geçerlik ve güvenilirlik çalışması. [The viewpoints of preschool teacher candidates on their self-efficiency levels in differentiated education]. *Journal of EKEV Academy*, (87), 183-204. Access of date: 12.11.2022.
- a7. Chen, D., & Dote-Kwan, J. (2021). Preschoolers with visual impairments and additional disabilities: Using universal design for learning and differentiation. *Young Exceptional Children*, 24(2), 70-81.
- a8. Coubergs, C., Struyven, K., Vanthournout, G., & Engels, N. (2017). Measuring teachers' perceptions about differentiated instruction: The DI-Quest instrument and model. *Studies in Educational Evaluation*, 53(2017), 41-54.
- a9. DeBaryshe, B. D., Gorecki, D. M., & Mishima-Young, L. N. (2009). Differentiated instruction to support high-risk preschool learners. *NHSA Dialog*, 12(3), 227-244.
- a10. Dijkstra, E. M., Walraven, A., Mooij, T., & Kirschner, P. A. (2017). Factors affecting intervention fidelity of differentiated instruction in kindergarten. *Research Papers in Education*, 32(2), 151-169.
- a11. Dijkstra, E. M., Walraven, A., Mooij, T., & Kirschner, P. A. (2016). Improving kindergarten teachers' differentiation practices to better anticipate student differences. *Educational Studies*, 42(4), 357-377.
- a12. Dombrowski, E., Sitabkhan, Y., & Kilonzo, T. N. (2020). Classroom environment for children with disabilities in Kenyan preschools. *International Journal of Inclusive Education*, 27(2), 241-256.
- a13. Donne, V., & Briley, M. L. (2015). Multimedia storybooks: Supporting vocabulary for students who are deaf/hard-of-hearing. *International Journal of Special Education*, 30(2), 94-106.
- a14. Gaitas, S., Carêto, C., Peixoto, F., & Castro Silva, J. (2022). Differentiated instruction: 'to be, or not to be, that is the question'. *International Journal of Inclusive Education*,
- a15. Gerde, H. K., Skibbe, L. E., Wright, T. S., & Douglas, S. N. (2019). Evaluation of Head Start curricula for standards-based writing instruction. *Early Childhood Education Journal*, 47, 97-105.
- a16. Gettinger, M., & Stoiber, K. C. (2012). Curriculum-based early literacy assessment and differentiated instruction with high-risk preschoolers. *Reading Psychology*, 33(1-2), 11-46.
- a17. Ghamrawi, N. (2014). Multiple intelligences and ESL teaching and learning: An investigation in KG II classrooms in one private school in Beirut, Lebanon. *Journal of Advanced Academics*, 25(1), 25-46.
- a18. Griess, C. J., & Keat, J. B. (2014). Practice what we preach: Differentiating instruction and assessment in a higher education classroom as a model of effective pedagogy for early childhood teacher education candidates. *Journal of Early Childhood Teacher Education*, 35(1), 98-109.
- a19. Handayani, S., Kartika, A., & Sugoto, S. (2016, November). The overview of training needs on differentiated instruction for early childhood teachers. In *3rd International Conference on Early Childhood Education (ICECE 2016)* (pp. 75-83). Atlantis Press.
- a20. Infurna, C. J. (2020). What makes a great preschool teacher? Best practices and classroom quality in an urban early childhood setting. *International electronic journal of elementary education*, 13(2), 227-239.
- a21. Kotob, M., & Arnouss, D. (2019). Differentiated instruction: The effect on learner's achievement in kindergarten. *International Journal of Contemporary Education*, 2(2), 61.

- a22. Kotob, M. M., & Jbaili, F. (2020). Implementing differentiation in early education: The impact on student's academic achievement. *Journal of Applied Linguistics and Language Research*, 7(2), 110-133.
- a23. Lin, S. J. (2021). Research on implementing inclusive education for municipality and preschool levels in Taiwan. *Człowiek-niepełnosprawność-społeczeństwo*, 53(3), 17-34.
- a24. Lundqvist, J., Franzén, K., & Munter, A. C. (2021). Early childhood mathematics: a case study. *Early Years*, 1-15.
- a25. Machů, E. (2015). Analyzing differentiated instructions in inclusive education of gifted preschoolers. *Procedia-Social and Behavioral Sciences*, 171, 1147-1155.
- a26. Mavidou, A., & Kakana, D. (2019). Differentiated instruction in practice: Curriculum adjustments in kindergarten. *Creative Education*, 10(3), 535-554.
- a27. Milman, N. B., Carlson-Bancroft, A., & Boogart, A. V. (2014). Examining differentiation and utilization of iPads across content areas in an independent, PreK-4th grade elementary school. *Computers in the Schools*, 31(3), 119-133.
- a28. Navrátilová, H. (2017). Preparing to become a teacher mentor: A project of professional development of preschool and primary school teachers in Czech Republic. *Procedia-Social and Behavioral Sciences*, 237(2017), 837-842.
- a29. Nepal, S., Walker, S., & Dillon-Wallace, J. (2021). How do Australian pre-service teachers understand differentiated instruction and associated concepts of inclusion and diversity?. *International Journal of Inclusive Education*, 1-15.
- a30. Pentimonti, J. M., & Justice, L. M. (2010). Teachers' use of scaffolding strategies during read alouds in the preschool classroom. *Early Childhood Education Journal*, 37, 241-248.
- a31. Pentimonti, J. M., Justice, L. M., Yeomans-Maldonado, G., McGinty, A. S., Slocum, L., & O'Connell, A. (2017). Teachers' use of high-and low-support scaffolding strategies to differentiate language instruction in high-risk/economically disadvantaged settings. *Journal of Early Intervention*, 39(2), 125-146.
- a32. Piasta, S. B. (2014). Moving to assessment-guided differentiated instruction to support young children's alphabet knowledge. *The Reading Teacher*, 68(3), 202-211.
- a33. Powell, W., & Napoliello, S. (2005). Using observation to improve instruction. *Educational Leadership*, 62(5), 52-55.
- a34. Robinson, A. (2021). A comparison between preschool teachers' read-aloud techniques with fictional and informational picture books in small groups. *Reading Horizons: A Journal of Literacy and Language Arts*, 60(1), 72-94.
- a35. Strogilos, V., Avramidis, E., Voulagka, A., & Tragoulia, E. (2018). Differentiated instruction for students with disabilities in early childhood co-taught classrooms: types and quality of modifications. *International journal of inclusive education*, 24(4), 443-461.
- a36. Sornson, B. (2015). The effects of using the essential skills inventory on teacher perception of high-quality classroom instruction. *Preventing School Failure: Alternative Education for Children and Youth*, 59(3), 161-167.
- a37. Selmer, S. J., & Floyd, K. (2012). UDL for geometric length measurement. *Teaching Children Mathematics*, 19(3), 146-151.
- a38. Veraksa, A. N., Aslanova, M. S., Bukhalenkova, D. A., Veraksa, N. E., & Liutsko, L. (2020). Assessing the effectiveness of differentiated instructional approaches for teaching math to preschoolers with different levels of executive functions. *Education Sciences*, 10(7), 181.
- a39. Zafiri, M., Konstantinidou, A., & Pliogou, V. (2019). The application of differentiated instruction in reading and writing to a boy with autism in early childhood education. A case study. *Universal Journal of Educational Research*, 7(12), 2609-2626.
- a40. Wackerle-Hollman, A., Spencer, T. D., Artman-Meeker, K., Kelley, E. S., Durán, L., & Foster, M. E. (2021). Multi-tiered system of supports in early childhood: Identifying gaps, considerations for application, and solutions. *Early Childhood Research Quarterly*, 56(3), 201-212.
- a41. Wu, S. C. A., & Chang, Y. L. A. (2015). Advancing kindergarten teachers' knowledge and capabilities of differentiated instruction associated with implementation of thematic integrated curriculum. *Procedia-Social and Behavioral Sciences*, 177, 246-250.




<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Literature Circle Method Practice with Preschool Teachers through Children's Books: An Action Research Example

 Gülizar Tepetaş Cengiz, Assoc. Prof. Dr.
Bolu Abant İzzet Baysal University, Türkiye
suletepetas@gmail.com
Orcid ID: 0000-0002-2034-9344

 Mahzar Bal, Assoc. Prof. Dr., Corresponding Author
Akdeniz University, Türkiye
balmazhar@gmail.com
Orcid ID: 0000-0001-6958-9130

Article Type: Research Article

Received Date: 20.06.2023

Accepted Date: 20.11.2023

Published Date: 30.11.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software

Doi: 10.29329/tayjournal.2023.610.13

Citation: Cengiz Tepetaş, G., & Bal, M. (2023). Literature circle method practice with preschool teachers through children's books: An action research example. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 1022-1045.

Abstract

The aim of this study is to increase the interaction between the educator and the book by discussing the picture storybooks used in the picture story reading activities carried out by the preschool educators through the literature circle methods. Since it aims to intervene in an educational situation and is carried out directly with preschool educators, this study was designed with action research, one of the qualitative research methods. The participants of the research are four preschool educators. As for the data collection, semi-structured interview form, participants' diaries, and researcher's diary were used. Content analysis technique was used in the analysis of the data. At the end of the research, it was concluded that the literature circle method affected the reading process in three different ways. These are (a) professional development, (b) relativity for the student, and (c) planning the teaching process. It was concluded that the reading circle method had a positive effect on the professional development of the participants, enabling the proper reading process for the student and effective planning of in-class practices. Hands-on workshops can be carried out that enable preschool educators to make use of picture storybooks in their schools through different reading methods.

Keywords: Literature circle, preschool educator, picture storybooks, reader response theory, reading skill.

Introduction

A literature circle is a discussion group that focuses on the development of the participants. The participants of the circle add their feelings and thoughts to the discussions because of their personal experiences and personal responses to the reading text (Kim, 2004). During the literature circle practice, the participants take notes about their reading process, share their reading roles, and discuss the text according to these roles. Meetings are held regularly in the literature circle, and roles change at each session. This method was first applied by Karen Smith in 1982, but it was first named by Kathy Short and Gloria Kaufman (Daniels, 2002). Literature circles promote participants' critical thinking and reflections on what they read and their reactions to the book. Collaboration is central to the approach. Participants shape meaning by adding their opinions about what they read together with other members (Campbell Hill, 2010).

Literature circle applications are based on Rosenblatt's reader response theory. Rosenblatt (1982, 2005) stated that reading is a process in which a relationship is established between the reader and text in a certain time and context. According to Rosenblatt (2005), meaning is not ready-made in the text. On the contrary, it emerges from the interaction between the reader and the text. Daniels (1994) delved into the reader response theory proposed by Rosenblatt and introduced the idea of reading groups for the first time. He thinks that the literature circle method is a powerful strategy to improve the reading, thinking and communication skills of the participants. He argued that this method supports students to interact with texts, use their critical thinking skills and develop a passion for reading. He thinks that discussions within the group enable students to understand the texts more deeply and enrich the reading experience. During the reading process, the interaction differs according to the aesthetic or informational reading of the text, selective attention to clues, and the purpose evoked by the reader (Connell, 2008). According to Rosenblatt (2005), readers make sense of texts by selecting and applying, rearranging, or expanding both private and social elements from their personal, linguistic and experiential knowledge. A story, poem, or narrative is just ink on paper until the reader reads, interacts with, and turns them into symbols (Rosenblatt, 2005). Meaning is constructed by combining the readers' personal responses with their experiences in this construction. The constructed meaning changes because of discussions and sharing with other individuals such as participants in the reading

circle. Thoughts organized within the framework of personal experiences are transformed into new ideas, information, and interactions through different individuals' stories, the points they are affected by, or their sharing (Connell, 1996; Demény, 2012). In reader response theory, this is the reader's dialogue with the text. Each reader provides the meaning that he has inferred from the text through his own experiences; he understands the text as much as the interaction he has in his own life. Literature circle practices allow readers to share their understanding, discuss different roles, and understand different perspectives. As a result, the text is understood differently, and readers are influenced by learning from each other.

The reading circle is a new activity where participants like to be more involved in their learning process (Liu, 2022). In this method, cooperation is made in groups, there is respect for each other's ideas and accepting responsibility. In this respect, it is clear that the participants of the reading circle support their cognitive and social development (Suci et al., 2022). Participants with different abilities change their roles in the literature circle and meet at designated periods to discuss stories or different parts of a book (Pierzga, 2007). They are active participants in this process, which is maintained through different roles or weekly changing roles (Wilfong, 2009). In the reading circle, there are small discussion groups formed by people who choose to read the same book. Group members take various notes as they read so that they can contribute to future discussions, and everyone comes to the group with ideas to discuss according to their role. After the group discussions, the participants divide into other small groups and start new discussions. Thus, a cycle that requires more reading and examination is started (Wati & Yanto, 2022). In the literature circle, there are certain roles, such as a connector that allows readers to make a connection between what they read and their own life experiences, interrogator that requires participants to make inquiries about what they read with questions at different levels from inquiring for knowledge to analysis, a reading illuminator/section specialist who helps to reveal the reading text in details, an artist, who expresses and explains the emotions with the branches of art, a summarizer who provides a brief summary of the reading text, a researcher who provides detailed and in-depth information about the reading text and provides the readers with extra information (places, geography, climate, occupations, etc.) that helps the text to be better understood, a word hunter who explains/attracts attention by identifying new words and different and interesting idioms and phrases in the text, a movement tracker who provides a detailed description of the places where the characters move and events take place, and a character master who describes the characters and their salient features (Daniels, 2002; Moeller & Moeller, 2007; Straits, 2007; Straits & Nichols, 2006; Tracey & Morrow, 2006). In the literature circle, participants examine the text according to their determined roles, come together, and carry out discussions with the facilitator. In this way, the interaction of a text with readers is increased, enhancing its intelligibility. The literature circle method also provides important contributions for educators and students in the pre-school period. It improves students' social skills (Dogan, & Kaya-Tosun, 2020). In addition, it gives students the opportunity to read and interpret complex and unknown texts in a reflective, critical and collaborative way (Martínez-Valdivia, Pegalajar-Palomino, & Higuera-Rodríguez, 2021). In this respect, it differs from the traditional method. In the traditional method of reading, the educator is in the center; in the literature circle, the student is at the center and the educator is the guide (Martínez-Valdivia, Pegalajar-Palomino, & Higuera-Rodríguez, 2021). Because of this feature, it redefined the roles of educator and student. In this method, students learned to be more active in the process and educators learned how to apply it (Jensen & Bennet, 2016). Based on these issues, this study aims to increase the interaction between educators and

books by discussing picture storybooks used in picture story reading activities performed by preschool educators through a literature circle. In line with the research purpose, answers to the following questions were sought:

1. What are the participants' experiences in the literature circle sessions?
2. What are the participants' views of the literature circle action research process?

Method

Research Design

The aim of this study was to increase the interaction between educators and books by discussing the picture storybooks used in picture story reading activities performed by preschool educators through a literature circle. Thus, we attempted to determine the contribution of the literature circle to educators' effectiveness in the reading process. As it aimed to intervene in an educational situation and was carried out directly with preschool educators, this study was designed as an action research study, which is a qualitative research method. Action research is also referred to as educator research, because it is widely used in education (Cohan & Honigsfeld, 2011; Pelton, 2010). The purposes of action research in education and school environments include teaching methods, learning strategies, assessment methods, attitudes and values, in-service development of educators, management and control, and management (Cohen & Manion, 1996, cited in Beyhan, 2013). In this study, action research was used to examine the teaching methods, learning strategies, and in-service development of preschool educators.

The Action Research Process

Action research, similar to all research designs, is based on specific procedures. Several studies have been conducted on action research (Branquinho and de Matos, 2019), and opinions reflecting almost the same perspective on the stages of the action research process are presented (Johnson, 2005; Kemmis, McTaggart, & Nixon, 2014; McNiff & Whitehead, 2006;). In this study, while determining the action plan of the literature circle method, the following steps were followed in parallel with the literature (Avcı et al., 2010 & Daniels, 2002).

1. Identifying the Books: Today, many publications and picture storybooks are used in the context of language activities in the preschool period. Within the scope of this study, educators who were willing to participate in the reading circle were trained on the qualities of current picture storybooks, how to choose a good-quality product in the preschool period, and the literary genres that can be used in the preschool period. Then, 2000 printed children's literature products published between 2015 and 2021 were presented to the educators, who were asked to choose those suitable for the reading circle and for reading in a preschool class. At this stage, the educators were given completely free rein and were allocated a period of time to examine the products; if necessary, they were allowed to bring additional products. All educators participating in the study chose three picture storybooks from among the products offered. We focused on the fact that these publishers are different and that all selected products differ in format, illustration, and content features.

2. Introducing the Technique to the Participants: To achieve the desired goals in the literature circle, participants must know how the process works. The participant educators were informed about how literature circles worked, the roles used in the circle, and the theoretical structure of the literature circle in the preparatory training before implementation. Information notes on this subject were

prepared and presented. The following week, a small circle was created and participants were allowed to try out the roles.

3. Introducing the Books: In this process, the participating educators gave information about the book they chose, why they chose it, and in which respects they found it valuable to be included in the circle. In addition, they shared the physical features of the book, such as the cover, illustration, and binding, with other educators. After each literature circle, the participating educator who chose that book introduced it for the next week, chose the appropriate roles, and distributed the parts to the other participants.

4. Formation of Groups: Daniels (2002) recommends 4–6 people in a literature circle. Within the scope of this study, four educators participated. Therefore, a single literature circle was created and 12 separate literature circle sessions were held.

5. Identifying and Sharing Roles: The participants do not do random readings in the literature circle. Each participant prepares for the discussion based on the roles determined by the book and participates in the process by paying attention to their positions. In this study, eight role options were presented. Worksheets developed by the researcher were prepared for these roles. Participating educators were asked to design functions that could be provided to other participating educators based on the contents of the books they chose. During the week of the selected text, the educator shared the parts for which the book was chosen with the participants. They were asked to complete the worksheets with short explanations of the given functions before the literature circle and, if necessary, to bring other supporters suitable for their parts, such as materials and video photographs, to the session. Accordingly, the educators attended sessions with supporters, including pictures, posters, research documents, and reference books. The participating educators were given a different role each week, and care was taken that all the educators attempted all the functions. It was ensured that each educator had only one part per week.

6. Planning the Time: A book was read every week. Literature circles continued with meetings held once a week (Friday), and literature circle practices were conducted with picture storybooks suitable for preschool periods with the participant Educators. educators' learning of the circles was terminated (12 weeks later) when they were no longer forced into the roles, became satisfied with the literature circle process, and could sustain themselves without a facilitator.

7. Group Projects: A project was conducted at the end of each source read in the literature circle. In this project, preschool educators were asked to prepare a detailed plan for the chosen book after reading each picture storybook. They were asked to design activities, project studies, and materials in various activity areas related to the selected text that could be used with the preschool children. They are expected to reflect on the book they were considering with all the details discussed in the literature circle in their plans. The prepared projects were shared and presented to all the educators.

8. Evaluation: Process evaluation was conducted as described previously. An assessment was made of the qualifications of the roles in the ring, and educators were asked to write diaries about the literature circle process and complete worksheets that were appropriate for their roles. It was ensured that the participants evaluated the literature circle process, participants, and emerging products. An outside observer was included in the process for one week, and his views were used for evaluation.

Participants

The participants were preschool educators. A criterion sampling technique was used to select participants, whereby the researcher identified participants according to criteria determined in line with the purpose of the study. (Yıldırım & Şimşek, 2013). The participants of the study were working in an independent kindergarten in Bolu, were willing to work in the literature circle, had not participated in any training on picture storybooks before, and had signed a cooperation protocol with Bolu Abant İzzet Baysal University Preschool Application and Research Center. The team consisted of four preschool educators. It was determined that educators had 15–20 years of experience and had been working together in the same school for 8 years. All the study participants were undergraduates in preschool teaching and had various academic projects that they had carried out in their classrooms. After meeting the researcher and participants and exchanging information about the study, permission was obtained from kindergarten management and the Ministry of National Education.

Data Collection Tools

Semi-structured interview forms, researcher diaries, and participant diaries were used as data collection tools. Information on these data collection tools is presented below.

Table 1. *Distribution of data collection tools*

Research Question	Data Collection Tool
First research question	Participant Diary Researcher Diary
Second research question	Semi-structured interview form

Researcher diary: The source of this data collection tool was the researcher. The purpose of this data collection tool was to convey the participants' experiences in the literature circle process by researching them from a different perspective. As the researcher was also a practitioner, he recorded the participants' observations on the action research process on a daily basis. Thirteen diaries were collected during the research process.

Participant diary: The source of this data collection tool is preschool educators. This tool aims to determine the participants' experiences of each session during the action research process from their perspective. During the research, 53 participant diaries were collected.

Semi-structured interview form: The source of this data collection tool was preschool teachers. The form was developed to elicit the general views of the four preschool educators who participated in the action research process. Semi-structured interviews consisted of four questions designed to determine the effects of the literature circle on students' daily lives, the literature circle method on the teaching profession, the literature circle on the picture storybook reading process, and in-class practices. During the research process, a total of 9 semi-structured interviews were conducted over two weeks.

Data Analysis

In action research, data analysis processes are continuous. The data are analyzed as they are collected. Afterward, the researcher interprets the results, discusses them with the validity committee, and advances suggestions for research problems (Yıldırım & Şimşek, 2013). In this study, the data were analyzed using content analysis in two stages. First, the data collected regularly every day were analyzed using the macro-analysis technique because qualitative data analysis was performed simultaneously

(Creswell, 2013). At the end of the study, all data were reanalyzed using the microanalysis technique. Analysis yielded 8 categories and 57 codes related to the first research question, and 3 categories, and 4 codes related to the second research question.

To increase the reliability of the research, another field expert analyzed the interview forms and diary data. The coding consistency between the researcher and field experts was determined to be 90% (Miles & Huberman, 1994). To ensure the validity of the research, the following tests were conducted for credibility, transferability, reliability, and confirmability (Lincoln & Guba, 1986):

Credibility: To ensure this dimension of validity, action research with a clear roadmap was chosen. Before the data collection process, the participants were prepared for the study, and the data collection process was conducted over a long period. Different data-collection tools obtained from other sources were used. The situations encountered in the reading circle based on the research findings were directly conveyed through positive and negative aspects. Researchers' diaries were included and data on the process were reflected.

Transferability: To ensure the transferability of the research, the participants and sample selection technique were explained in detail in the context of their knowledge and its relation to the research purpose. Limitations of this study and its data were demonstrated. Information on the data collection techniques was explained in line with the research purpose. In addition, explanations of the session information regarding the data collection process are presented.

Reliability: For this dimension of research validity, the findings section has been clearly reported. Accordingly, analysis tables are presented and the categories obtained from the content analysis are referred to along with the data obtained from the participants. Thus, interpretations were made for each class using direct references from the participants.

Confirmability: Participant and researcher diaries were collected simultaneously during each session to ensure the confirmability of the study. Therefore, diversification is based on different data sources regarding the process. Additionally, the data obtained from the participant diaries were re-audited using a semi-structured interview form during the last week of the implementation process. This increased the confirmability of the data that the participants included in the diaries throughout the process and in the semi-structured interview form towards the end of the process.

Limitations of the Research

The current research has some limitations owing to the schools where the participating educators worked. Since there were limited picture storybooks in the schools where the educators work, the researchers provided picture storybooks for use in the study. The researchers presented all documents and tools used in the study to the educators. This study was limited to picture storybooks examined with the preschool educators and the four participating educators. This study aimed to ensure that all teachers in a school participated in a survey to support sharing and cooperation among educators. Therefore, this study was limited to the schools that participated.

Ethical Permits of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Akdeniz University Scientific Research and Publication Ethics Committee

Date of ethical review decision= 23.12.2020

Ethics assessment document issue number= 21/275

Findings

This section presents and interprets the findings based on the data obtained from the action research process. The action research process began with the educator training. Before starting the literature circle method, preschool educators were provided with training on the qualities of picture storybooks, types of picture storybooks, literature circle methods, how children's books are included in different approaches, philosophies for children, and questioning strategies. In the process that started on 09.10.2020 and ended on 12.11.2020, 45-60-minute training sessions were held with the participants every week, lasting one or two sessions. The action research process, which was conducted with the participation of the literature circle method, started on 26.11.2020. Table 2 presents the analysis of the data obtained from the researcher and educator diaries regarding the action research process.

Table 2. *Literature circle method action research process*

Theme	Category	Code	f
Literature circle method process	First session	Book selection criteria	1
		Associate with the activity	1
		The importance of words	1
		Attract attention	1
		Remembering past experiences	1
		To be able to see differently	1
		Enjoyable	1
		Reflective teaching	1
	Second session	Associating with daily life	3
		Changing perspective	2
		Effectiveness	1
		Strain	1
		Ability to analyze	1
	Third session	Enrich the dream world	2
		Family education	2
		Ability to analyze	1
		Associate with the activity	1
		Confidence	1
		Noticing the details	1
		Constructive discussion	1
	Fourth session	Converting books	2
		Message	1
		Adaptation	1
		To be able to see differently	1
		Responsibility	1
		Relative to the child	1
		Making book selection easy	1
		Noticing the details	1
		Transferring information	1
		Concretization	1
		Increasing interaction	1
		Questioning	1
		Fifth session	Positive group interaction
	Simplification		1
	Clarity supported by repetition		1
	Meaning and word harmony		1
Confusion at new information	1		
The transition from superficial to the deep structure	1		
Ability to predict the contribution	1		
Sixth session	Changing perspective	2	
	Book selection criteria	1	
	Connecting with the past	1	
	Spontaneous exchange of ideas	1	
Seventh session	Dominance	2	
	Ability to set criteria	1	
	Ability to suggest resources	1	
	Development	1	
	Self-satisfaction	1	
Eighth session	Ability to set criteria	2	
	Ability to perform an effective reading process	2	
	Changing perspective	2	
	Ability to transfer	1	
	Ensuring relativity to the child	1	
	Increasing effectiveness in the reading process	1	
	Development	1	
	Self-regulation	1	
	Positive attitude	1	

As shown in Table 2, eight sessions were held with educators. The analysis results of the first session revealed no prominent code. The opinions reflected in the participants' diaries were mostly limited to preliminary information. The frequency values of the codes began to change in the second session of the literature circle method. It can be said that the literature circle method action plan cycle had begun to be realized. In the second session, two codes stood out in terms of the frequency value. The first one is "changing perspective" ($f = 2$), and the other is "associating with daily life" ($f = 3$) code. The code of association with daily life was reflected in the diaries of Ö2, Ö4, and the researcher as follows:

"I was more impressed with this week's book about calling and its importance in your life" (Ö2, diary form, 03.12.2021).

"The first thing that the book provoked in me was the matching game. Because everything in the book has a match, every living thing in the book is with its partner, so I created a picture of all living things" (Ö4, diary form, 03.12.2021).

"Then, I asked the educators why they chose the rabbit, why the birds, why the king, why the people, and why the dragon, and what these characters in the book represent. I then explained the representations of the characters both in the book and in daily life." (Researcher, diary, 03.12.2021).

Looking at the expressions of the educators coded Ö2 and Ö4, it can be said that the literature circle method is effective in associating it with daily life. This situation is also reflected in the researcher's diary: Opinions about the change in point of view were reflected in the diary of the educator coded Ö2 and the researcher as follows:

"I had a negative review of the book before, but after hearing the comments, I think it's very nice" (Ö2, diary form, 03.12.2021).

"They all said they were amazed at how deep and important messages can be found in a children's book. However, I think it was very important to observe Ö2's perspective on book change" (Researcher, diary, 03.12.2021).

Ö2 stated that he changed his perspective on the book through the literature circle method. The point of view and observable changes in Ö2 were reflected in the researcher's diary. As shown in Table 1, different codes were activated in the third session. The most striking of these in terms of frequency value are "enriching the world of imagination" ($f = 2$) and "family education" ($f = 2$) codes. The data aimed at enriching the imaginary world were reflected in the participants' statements as follows:

"From the storybook *My Father's Blanket*, which was read, it was emphasized again that fathers play an important role in the world of children and the effect of the activities with the father on the child's imagination, and I understood it" (Ö2, diary form, 10.12.2021).

"Since this book describes the writings of the imaginary world and how the imaginary world can be enriched, we talked about what can be done to enrich children's imagination based on the book" (Ö4, diary form, 10.12.2020).

As we see from the expressions above, with the literature circle activity, the participants were able to see and express the effects of the books on their imaginations more concretely. The researcher's views on the importance of family education in relation to book reading are as follows:

“For this reason, T3 said that he took the book into his hands to examine it in detail, and at that time, he saw that the character of ‘father’ and especially the quality time spent by the father and children were emphasized in the book. S3 said, ‘I think that the father is clearly in the background in early childhood education. Mothers usually take care of the children and play games at home. Therefore, I believe that fathers and children do not bond enough. That’s why I loved how this book tells about father. I thought that seeing what a father could do for a child in the preschool period might attract the attention of their fathers” (Researcher, diary, 10.12.2020).

As seen in the researcher’s diary, the participants were able to make more detailed analyses of the role distribution of parents in the processes. This shows that thanks to the literature circle method, participants’ awareness of the roles of men and women in the family has increased.

Another striking finding in Table 2 is the “book selection criteria” code. In the first session regarding this code, only Ö1 made the following statement: “I think it is a useful activity regarding the criteria that can be taken into account in choosing a storybook” (Ö1, diary form, 26.11.2020). In the sixth and seventh sessions, concrete opinions on the contribution of the literature circle method to the book selection criteria were put forward. Especially in the eighth session, the book-selection criteria drew attention to the code with the highest frequency. Statements regarding the book selection criteria are as follows:

“She said he chose it primarily because he liked the cover and the quality look of the book. The fact that the book was a hard cover and that its content concerned animals was an important criterion for him. She said that he found details, such as printing, binding, and illustrations, suitable for the preschool period. Most importantly, she liked the subject of the book and its suitability for children after examining it in detail” (Researcher, diary, 31.12.2020).

She said that she chose this book because it has a short text, its illustrations are different and interesting, and it has thick and hard covers. Ö3 started by explaining that she found it important that the subject of the book was suitable for preschoolers, and that new and different words were included in its content (Researcher, diary, 07.01.2021).

“I think our literature circle method study has contributed to our understanding of the importance of examining the characteristics of storybooks from the very beginning to the present. To date, we have reviewed eight books. We saw that the criteria that we tried to realize in the first book had become much easier by the eighth book” (Ö1, daily form, 22.01.2020).

“She explained that the book is a hard cover, its illustrations are clear and understandable, and its pages are suitable for preschoolers. Ö1 said that she liked the relevance of the subject of this book, the writings, and illustrations in the text, which was why she chose the book” (Researcher, diary, 22.01.2021).

As seen above, participants could more clearly reveal the criteria for selecting the book at the end of the literature circle method process. As shown in Table 2, the effect of the literature circle method on the process of reading books is also manifested in the concretely revealed codes. Another noteworthy finding was that these effects were positive. Interviews with the participants at the end of the implementation process also supported the positive contribution of the literature circle method. Table 3 presents an analysis of the interviews with the participants.

Table 3. Analysis of the interviews with the participants

Theme	Category	Code	f
Reading circle	Contribution to teaching skills	Professional development	8
		Raising awareness	8
	Contribution to the development of children	Contribution to children's reading process	8
	Contribution to classroom practices	Planning	4

As shown in Table 3, three different categories were identified as a result of the analysis of participants' views on the literature circle method action research process: "contribution to teaching skills" (f = 16), "contribution to children's development" (f = 8), and "contribution to classroom practices" (f = 4). The opinions of the participants about "professional development" can be shown as follows:

"I think this application has contributed to our learning more about storybook selection. I think this makes us more sensitive about ensuring that the storybook complies with the criteria in the literature circle method" (Ö1, semi-structured interview form, 31.12.2020).

"With the literature circle method, the books were handled better, and while examining them, Ö2 contributed to how studies could be such as the place of the pictures, the reading tones, the placement of the texts, the place of reduplications on children, and the importance of tone of voice in reading" (Ö2, semi-structured interview form, 31.12.2020).

"The literature circle method developed my imagination. In the coming days, when face-to-face training opens, I want to put my way of reading stories, my method, and my activities into practice. I think it's a good experience" (Ö3, semi-structured interview form, 31.12.2020).

As can be understood from the participants' opinions, the literature circle method contributes to the teaching profession in terms of what to do and what to pay attention to. In addition, the educators improved their competencies and changed their perspectives on education. Therefore, another code that contributes to teaching skills is raising awareness (f = 8). Expressions of this code are as follows:

"Thanks to the reading circle, the importance of focusing on the features that should be considered in selecting picture storybooks has become more evident" (Ö1, semi-structured interview form: 07.01.2021).

"I realized that it would be more efficient if the messages that the pictures wanted to convey were selected according to the age and development characteristics of the children, and if the application was made by paying attention to tone and highlighting" (Ö2, semi-structured interview form, 07.01.2021).

"When I read picture storybooks before, I used to pay attention to the tone of voice and mimics, but now I try to pay attention to their covers, illustrations, and content" (Ö3, semi-structured interview form, 07.01.2021).

As seen in the explanations, the participants thought that the literature circle method made a professional contribution to recognizing important points in the reading process. In addition to these opinions of the participants about the contribution to their professional development, as seen in Table 3, the opinions about "contribution to children's reading process" (f = 8) under the category of contribution to children's development are given below:

“We cannot use it fully in distance education; I will use it in detail in face-to-face education; I already imagine what I will do, and I am happy. I read My Father’s Blanket with my niece and tried to implement its activities, and it was very nice” (Ö3, semi-structured interview form, 31.12.2020).

“We haven’t had a chance to practice it in the classroom yet, but our preparations continue. When we switch to face-to-face training, I will design what I will do and pay attention to it” (Ö4, semi-structured interview form, 31.12.2020).

“This study will be useful to me. The messages I want to convey to children will be clearer and more visually efficient” (Ö2, semi-structured interview form, 07.01.2021).

Considering the participants’ views of the development of children, the literature circle method can make the reading process more effective and concrete for children. The participants thought that the reading process would be better for children if they reflected on the literature circle method in their future classroom practices based on their previous experiences.

Finally, the views of the participants regarding the “planning” (f = 4) code under “contribution to classroom practices,” which is the lowest category in frequency, are as follows:

“I think that applying the literature circle method is useful in giving ideas for the direction, planning, and implementation of the activities we do with our students” (Ö1, semi-structured interview form, 31.12.2020).

“It has been beneficial for me to pay attention to the age group, illustrations, long-short writing studies, reduplications, emphasis, and tone of voice of the books. I understood the importance of being more careful while choosing the books and using the messages and activities better” (Ö2, semi-structured interview form, 31.12.2020).

“Yes, it is of great use to us. I think that the plans we implement will be very effective and efficient by using and feeding these methods” (Ö3, semi-structured interview form, 31.12.2020).

As can be understood from the statements above, the participants thought that the literature circle method was useful in making the necessary planning for a more effective book-reading process.

Discussion and Conclusion

The aim of this study was to increase the interaction between educators and books by discussing picture storybooks used in picture story reading activities carried out by preschool educators using the literature circle method. Thus, the contribution of the literature circle method to educators’ effectiveness in the reading process was examined by examining the literature on the subject, the introduction of the literature circle method (Avcı et al., 2010), the contribution of the literature circle method to the reading and comprehension process of secondary school students (Balantekin and Pilav, 2017; Sarı et al., 2017; Hatun and Kurtlu, 2019; Mete, 2020), the roles of educator candidates in the literature circle method (Çermik et al., 2019; Doğan et al., 2019; Özbay & Kaldirim, 2015; Yıldırım et al., 2019). However, no study was identified that directly examined the reading process of educators in the preschool period using the literature circle method. In this respect, this research differs from other studies in the literature and contributes to the literature. In addition, this study contributes to the literature with regard to making preschool educators re-examine picture storybooks, helping preschool

educators read picture storybooks in detail, helping them better understand them, and making sense of them with new perspectives.

Based on the findings for the research sessions, the participants were more involved in the process with their past experiences in the first session. The participants' expressions differed in each session. Based on the findings of this research, it is thought that this is a result of the interactions in the literature circle. Using the literature circle method, the participants presented different perspectives by associating their own experiences with the opinions of other participants. Studies have also reached similar findings about interpretation of meaning (Levy, 2019; Soares, 2016; Varita, 2017). In this context, it can be said that the literature circle method creates awareness of the contents of picture storybooks and the educators' perspectives on the book. Işıkoğlu et al., (2020) state that early childhood education educators prefer to read stories in their classrooms, but there are inconsistencies in their use of the book.

Ulutaş and Kıymaz (2012) also state that preschool educators obtain information about children's books within the scope of children's literature lessons. However, they cannot obtain sufficient information about the storybook content. Adak Özdemir and Özdemir Beceren (2020), in their study on the evaluation of children's books within the framework of preschool educators' opinions and book reviews, showed that preschool educators generally hesitate to include well-known classic books in their classrooms because they do not know the new content and books they use. Therefore, it is important to improve the awareness of preschool educators about picture storybooks. It is also known that the use of picture story books in early childhood supports children's language development (Grolig et al., 2019; Hagen, 2018). A literature review suggests that preschool educators do not have enough ideas on early childhood literature (Aral and Aktaş, 1997); that they need to develop their awareness in choosing books and evaluating them qualitatively (İpşiroğlu, 2007), and that they should get information by encountering qualified children's literature products more frequently (Sever, 2013; Yükselen et al., 2016). With this study, preschool educators were asked to think about books and examine picture storybooks in detail. It can be said that this helps to support their awareness. Research findings, especially on raising awareness about empathy, support this study (Johnson, 2022).

Participants were able to perform more detailed analyses of the role distribution of parents using the literature circle method, which increased their awareness of the roles of men and women in the family. Pensiero (2011), Adak Özdemir and Özdemir Beceren (2020), Brookshire et al., (2002), and Yazıcı Okuyan (2009) also showed how gender equality is included in children's books. They determined that the father's role is actively used in many books today, and a new understanding of role distribution has begun to develop in current books. Despite this, it is known that there are also books with a traditional point of view (Çatalcalı Soyer, 2009; Gümüšoğlu, 2008; Somer Ölmez & Değirmenci, 2015). Preschool educators' gender-based beliefs and classroom practices play an important role in students' perceptions of gender roles in the preschool period (Gansen, 2019). Therefore, it can be said that it is important for preschool educators to be conscious of their roles regarding gender equality. With this study, it can be said that educators have become conscious of this issue and have begun to pay attention to this criterion in the products they choose.

According to the findings, it was determined that at the end of the literature circle method, the participants were able to more clearly reveal their criteria for determining the book. Language development of children can be supported not only through picture story books but also through the

use of reading resources. For this reason, it is important to know and use resources that support early reading skills in the preschool period (Riad et al., 2023). The effect of the literature circle method on the process of reading books was also manifested in the concretely revealed codes. Another noteworthy finding was that these effects were positive. Various studies have demonstrated that it is important for preschool educators to choose quality books and to bring children together with these quality products during the picture storybook reading activities in their classrooms (Gönen et al., 2015; Yükselen et al., 2016). Another positive effect of the literature circle method was the increased awareness of the preschool educators participating in the study about the qualities of picture storybooks.

The research findings show that reading circles support the understanding of picture storybooks. It is known that the literature circle method support comprehension (Balantekin & Pilav, 2017; Briggs, 2010; Hinds, 2019; Kennedy, 2010; Pambianchi, 2017; Taboada, Tonks, Wiffield, & Guthrie, 2009; Thomas, 2013; Yıldırım et al., 2019). This study revealed that the literature circle method is useful in making the necessary planning for a more effective book-reading process. It can be said that the literature circle method is supportive in matters such as the use of methods and techniques, reinforcement and correct activity selection, age-related criteria, and activity implementation process. In this study, preschool educators stated that the literature circle method activities had positive effects on the reading processes they conducted with children after the study. Researchers (Balantekin and Pilav, 2017; Beach, 1993; Blum et al., 2002; Eeds and Peterson, 1991; Rich and Blake, 1994; Tomlinson and Strickland, 2005) have indicated that reading circles positively affect participants' reading processes. Furthermore, it was demonstrated that this continued throughout the process. In this context, it can be said that the findings of this study corroborate those of earlier research.

When the findings obtained from the researcher's diary and the participant diaries were examined, it was observed that the expressions of the participants in the first session about the reading process consisted of more abstract and general expressions. This is also related to the reading processes. This process before the literature circle method is applied is the pre-reading process. In the pre-reading process, the meaning related to the reading content is not concrete. The important thing at this stage is to activate the background of the reader (Laitinen et al., 2022). However, looking at the process from the second to the eighth session, it can be seen that the expressions of the participants changed from abstract to concrete, and general expressions to narrower ones. As can be seen from the participants' statements, this concreteness and clarity is the result of the participatory and interactive aspects of the literature circle method.

Based on the findings of the interviews regarding the entire literature circle method, the reading process is affected in three different ways: professional development, student orientation, and the planning of the teaching process. It was concluded that the literature circle method had a positive effect on the professional development of the participants, enabling a proper reading process for the student and effective planning of classroom practices. There are similar results in different studies on this contribution of the literary circle (Puzio, Colby, & Algeo-Nichols, 2020). The following recommendations are made based on the findings of this study.

Recommendations

It is recommended that more studies be conducted to enable preschool educators to examine and understand picture storybooks in more detail. A literature circle method was used in this study.

However, it is recommended that studies be conducted with educators who use different strategies for differentiated instruction outside the literature circle method. In-service training activities are recommended for preschool educators to receive mental training that will enable them to think critically and make in-depth evaluations. Finally, it is recommended that practical workshops and academic studies be conducted to enable preschool educators to learn picture storybooks and benefit from these books by using different reading methods in their schools.

References

- Adak Özdemir, A., & Özdemir Beceren, B. (2020). Çocuk kitaplarının okul öncesi öğretmenlerinin görüşleri ve kitap incelemesi çerçevesinde değerlendirilmesi [An investigation of childrens' books through pre-school teachers' views and book reviews]. *International Journal of Turkish Literature Culture Education*, 9(3), 1216-1242.
- Aral, N., & Aktaş, Y. (1997). Çocukların televizyon ve diğer etkinliklere harcadıkları sürenin incelenmesi [Examining the time children spend on television and other activities]. *Hacettepe University Journal of Education*, 13, 99-105.
- Avcı, S., Yüksel, A., & Akıncı, T. (2010). Literature circles: an effective method to develop reading habit. *Marmara University Atatürk Education Faculty Journal of Educational Sciences*, 32(32), 5-24.
- Balantekin, M., & Pilav, S. (2017). Okuma çemberi yönteminin okuduğunu anlama becerisine etkisi [The effect of the reading circle method on understanding skills]. *Kırıkkale University Journal of Social Science (KUJSS)*, 7, 149-170.
- Beach, L. R. (1993). Broadening the definition of decision making: the role of prechoice screening of options. *Psychological Science*, 4(4), 215-220.
- Beyhan, A. (2013). Eğitim örgütlerinde eylem araştırması [Action research in educational organizations]. *Journal of Computer and Education Research*, 1(2), 65-89.
- Blum, H. T., Lipsett, L. R., & Yocom, D. J. (2002). Literature circles: A tool for self-determination in one middle school inclusive classroom. *Remedial and Special Education*, 23(2), 99-108.
- Branquinho, C., & de Matos, M. G. (2019). The "Dream Teens" project: After a two-year participatory action-research program. *Child Indicators Research*, 12(4), 1243-1257.
- Briggs, S. R. (2010). *Using literature circles to increase reading comprehension in third grade elementary students* [Unpublished master's dissertation]. Dominican University of California.
- Brookshire, J. Scharff, L. F. V., & Moses, L. E. (2002). The influence of illustrations on children's book preferences and comprehension. *Reading Psychology*, 23(4), 323-339.
- Campbell Hill, B. (2010, March 19 - 20). Literature circles and the heart of response (Grades 1-8) [Conference presentation]. *CEESA Conference*, Tallinn, Estonia.
- Cohan, A., & Honigsfeld, A. (2011). *Breaking the mold of preservice and inservice teacher education: Innovative and successful practices for the twenty-first century*. Rowman & Littlefield Education.
- Connell, J. M. (2008). The emergence of pragmatic philosophy's influence on literary theory: Making meaning with texts from a transactional perspective. *Educational Theory*, 58(1), 102-122.
- Connell, R. W. (1996). Teaching the boys: New research on masculinity, and gender strategies for schools. *Teachers College Record*, 98(2), 206-235.
- Creswell, J. W. (2013). *Nitel araştırma yöntemleri* [Qualitative research methods]. (M. Bütün & S. B. Demir, Trans.). Siyasal Kitabevi.
- Çatalcalı Soyer, A. (2009). Okul öncesi dönem çocuk hikâye kitapları: Stereotipler ve kimlikler [Storybooks of the pre-school kids: Stereotypes and identities]. *Mehmet Akif Ersoy University Journal of Social Sciences Institute*, 0(1), 13-27.
- Çermik, H., Doğan, B., Ateş, S., & Yıldırım, K. (2019). Öğretmen adaylarının okuma çemberlerine ilişkin görüşleri [Preservice teachers' views on literature circles]. *The Journal of Academic Social Science*, 7(87), 1-15.
- Daniels, H. (1994). *Literature circles: Voice and choice in book clubs and reading groups*. Stenhouse.
- Daniels, H. (2002). *Literature circles: Voice and choice in book clubs and reading groups* (2nd ed.). Stenhouse.
- Demény, P. (2012). Developing written text production competence using the reader-response method. *Acta Didactica Napocensia*, 5(3), 53-60.
- Doğan, B., Çermik, H., Ateş, S., & Yıldırım, K. (2019). Öğretmen adaylarının okuma çemberlerinde üstlendikleri rollere ilişkin görüşleri [Preservice teachers' views on the roles they took in literature circles]. *Journal of Mother Tongue Education*, 7(1), 141-157.
- Dogan, B., & Kaya-Tosun, D. (2020). An effective method in improving social skills: Literature circles. *International Journal of Educational Methodology*, 6(1), 199-206.
- Eeds, M., & Peterson, R. (1991). Teacher as curator: Learning to talk about literature. *The Reading Teacher*, 45(2), 118-126.

- Gansen, H. M. (2019). Push-ups versus clean-up: Preschool teachers' gendered beliefs, expectations for behavior, and disciplinary practices. *Sex Roles, 80*(7-8), 393-408.
- Gönen, M., Karakuş, H., Uysal, H., Kehci, A., Ulutaş, Z. & Kahve, Ö. (2015). Resimli çocuk kitaplarının içerik ve resimleme özelliklerinin bazı değişkenler açısından incelenmesi [Analysis of children's picture books in terms of certain variables on content and illustration features]. *Hacettepe University Journal of Education, 31*(49), 724-735.
- Grolig, L., Cohrdes, C., Tiffin-Richards, S. P., & Schroeder, S. (2019). Effects of preschoolers' storybook exposure and literacy environments on lower level and higher level language skills. *Read Writing, 32*, 1061-1084.
- Gümüšoğlu, F. (2008). Ders kitaplarında toplumsal cinsiyet [Gender in school text books]. *Toplum ve Demokrasi Dergisi, 2*(4), 39-50.
- Hagen, Å, M. (2018). Improving the odds: Identifying language activities that support the language development of preschoolers with poorer vocabulary skills. *Scandinavian Journal of Educational Research, 62*(5), 649-663.
- Hatun, E. T., & Kurtlu, Y. (2019). Okuma çemberi yönteminin öğrencilerin eleştirel okuma becerilerine etkisi [The effect of the method of literature circles on students' critical reading skills]. *Ekev Akademi Dergisi, 23*(78), 191-203.
- Hinds, J. (2019). *A case study for improving reading comprehension in third grade using literature circles* [Unpublished master's thesis]. Trinity Western University.
- Işıkoğlu Erdoğan, N., & Şimşek, Z. C. (2020). Erken çocukluk eğitimi öğretmenlerinin hikâye anlatma/kitap okuma uygulamaları tercihleri ve nedenleri [Early childhood education teachers' storytelling and reading practice preferences and their reasons]. *Journal of Mother Tongue Education, 8*(4), 1519-1533.
- İpşiroğlu, Z. (2007, October 4-6). Çocuk yazını eleştirisi [Criticism of children's literature]. [Conference session]. *II. Ulusal Çocuk ve Gençlik Edebiyatı Sempozyumu*, Ankara, Turkey.
- Jensen, K., & Bennett, L. (2016). Enhancing teaching and learning through dialogue: A student and staff partnership model. *International Journal for Academic Development, 21*(1), 41-53.
- Johnson, A. P. (2005). *A short guide to action research* (2nd ed.). Pearson.
- Johnson, W. F. (2022). Conducting racial awareness research with African American children: Unearthing their sociopolitical knowledge through Pro-Black literacy methods. *Journal of Early Childhood Literacy, 22*(3), 408-432.
- Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The action research planner. Doing critical participatory action research*. Springer.
- Kennedy, G. (2010). *The effects of skill-focused minilessons on students' independent use of reading skills during literature circles* [Unpublished doctoral dissertation]. Florida Atlantic University.
- Kim, M. (2004). Literature discussions in adult L2 learning. *Language and Education, 18*(2), 145-166.
- Laitinen, S., Lepola, J., & Kajamies, A. (2022). The role of pre-reading skills in the development of task orientation and interest in reading and play from preschool to kindergarten. *Journal of Early Childhood Education Research, 11*(3), 51-81.
- Levy, R. (2019). Literature circles: Access to texts. *Open words: Access to English Studies, 12*(1), 88-109.
- Lincoln, Y. S., & Guba, E. G. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Evaluation, 30*, 73-84.
- Liu, J. (2022). Using reading circles to connect readers with text extensive reading. *Pacific International Journal, 5*(3), 112-117.
- Martínez-Valdivia, E., Pegalajar-Palomino, M., & Higuera-Rodríguez, M. L. (2021). Dialogic literary circles as a methodological strategy for the training of students in early childhood education degree. *International Journal of Instruction, 14*(3), 255-270.
- McNiff, J., & Whitehead, J. (2006). *All you need know about action research*. Sage.
- Metek, G. (2020). Okuma eğitiminde okuma çemberi yönteminin uygulanması [Implementation of reading circle method in reading education]. *Journal of History School, 13*(45), 1147-1158.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. (2nd ed). Sage.
- Moeller V. J., & Moeller M. V. (2007). *Literature circles that engage middle and high school students*. Routledge.

- Özbay, M., & Kaldırım, A. (2015). Okuma çemberi tekniğinin öğretmen adaylarının eleştirel okuma öz yeterlilik algılarına etkisi [The effect of reading circle technique on the critical reading self-efficacy perception of pre-service teachers]. *International Journal of Languages' Education and Teaching*, 3, 222-234.
- Pambianchi, L. C. (2017). *Literature circles in a fifth grade classroom: A qualitative study examining how the teacher and students used literature circles and the impact they have on student learning* [Unpublished doctoral dissertation]. Mississippi State University.
- Pelton, R. P. (2010). *Action research for teacher candidates: Using classroom data to enhance instruction*. R&L Education.
- Pensiero, N. (2011). Parent-child cultivation and children's cognitive and attitudinal outcomes from a longitudinal perspective. *Child indicators research*, 4(3), 413-437.
- Pierzga, C. L. (2007). *Varying grouping strategies for literature circle: does group composition affect student verbal participation?* [Unpublished master's thesis]. Moravian College.
- Puzio, K., Colby, G. T., & Algeo-Nichols, D. (2020). Differentiated literacy instruction: Boondoggle or best practice?. *Review of Educational Research*, 90(4), 459-498.
- Riad, R., Allodi, M, W. Siljehag, E., & Bölte, S. (2023). Language skills and well-being in early childhood education and care: A cross-sectional exploration in a Swedish context. *Front. Educ. Sec. Language, Culture and Diversity*. 8, 1-16.
- Rosenblatt, L. M. (1982). The literary transaction: Evocation and response. *Theory Into Practice*, 21(4), 268-277.
- Rosenblatt, L. M. (2005). *Making meaning with texts: Selected essays*. Heinemann.
- Rich RZ., & Blake S. (1994). Using pictures to assist in comprehension and recall. *Intervention in School and Clinic*, 29(5), 271-275.
- Sarı, T., Kurtuluş, E., & Yücel-Toy, B. (2017). Okuma çemberi yönteminin ortaokul 7. sınıf öğrencilerinin okuma-anlama becerilerine etkisinin incelenmesi [Investigation of the effect of reading circle method on reading-comprehension skills of secondary school 7th grade students]. *Yıldız Journal of Educational Research*, 2(2), 1-14.
- Sever, S. (2013). *Çocuk ve edebiyat* [Children and literature]. Tudem.
- Soares, L. (2016). Literature circles: Something old, something new. *Georgia Journal of Literacy*, 39(1), 30-36.
- Somer Ölmez, B., & Değirmenci, G. Y. (2015, June 8-10). Examination of children's picture books in terms of gender concept [Conference session]. *International Eurasian Educational Research Congress*, Ankara, Turkey.
- Straits W., & Nichols S. (2006). Literature circles for science. *Science and Children*, 44(3), 52-55.
- Straits, W. (2007). A literature circles approach to understanding science as a human endeavor. *Science Scope*, 31(2), 32-36.
- Suci, T. C., Yanto, E. S., & Miftakh, F. (2022). Students' responses in learning extensive reading through the literature circle. *JlIP - Jurnal Ilmiah Ilmu Pendidikan*, 5(9), 3602-3610.
- Taboada, A., Tonks, S. M., Wiffield, A., & Guthrie, J. T. (2009). Effects of motivational and cognitive variables on reading comprehension. *Reading and Writing*, 22(1), 85-106.
- Thomas, D. (2013). *The effects of literature circles on the reading achievement of college reading students* [Unpublished doctoral dissertation]. Middle Tennessee State University.
- Tomlinson, C. A., & Strickland, C. A. (2005). *Differentiation in practice: A resource guide for differentiating curriculum*. The Association for Supervision and Curriculum Development.
- Tracey, D., & Morrow, L. M. (2006). *Lenses on reading: An introduction to theories and models*. Guilford.
- Ulutaş, A., & Kıymaz, M. S. (2012). Okul öncesi öğretmen adaylarının çocuk edebiyatı dersine ilişkin beklentileri: Adıyaman ili örneği [The expectations of the preschool teacher candidates from the child literature lesson: Adıyaman case]. *Usak University Journal of Social Sciences*, 5(3), 68-80.
- Varita, D. (2017). Improving reading comprehension through literature circles. *English Education Journal*, 8(2), 234-244.
- Wati, P. K., & Yanto, E. S. (2022). Engaging vocational students' self-efficacy in reading comprehension through literature circle. *Jurnal Educatio FKIP UNMA*, 8(3), 1104-1110.
- Wilfong, L. G. (2009). Textmasters: Bringing literature circles to textbook reading across the curriculum. *Journal of Adolescent & Adult literacy*, 53(2), 164-171.

- Yazıcı Okuyan, H. (2009). Türkçe ve sınıf öğretmenlerinin okuma saatlerinde kullanılan çocuk edebiyatı ürünlerini seçme ölçütleri [The criteria of Turkish teachers and class teachers in choosing the children's books for reading hour]. *Mehmet Akif Ersoy University Journal of Education Faculty*, 0(18), 135-159.
- Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri* (9th ed.) [Qualitative research methods in the social sciences]. Seçkin.
- Yıldırım, K., Ateş, S., Çermik, H., & Doğan, B. (2019). Okuma çemberlerinin öğretmen adaylarının okuduğunu anlama düzeylerinin gelişimine etkisi [The effects of literature circles on development of preservice teachers' reading comprehension levels]. *Gazi University Journal of Gazi Educational Faculty*, 39(2), 1029-1048.
- Yükselen, A., Yumuş, M., & Işık, E. (2016). Çocuk kitabı seçme kriterlerine ilişkin okul öncesi eğitimcilerin görüşleri [The preschool educators' views about the criteria for selecting children's book]. *Başkent University Journal of Education*, 3(2), 161-168.

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 60%

Author 2: 40%

Conflict Statement

There is no conflict of interest in the research.



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Okul Öncesi Öğretmenleri ile Çocuk Kitapları Aracılığıyla Okuma Çemberi Uygulamaları: Bir Eylem Araştırması Örneği

Giriş

Okuma çemberi, birbirini tamamlayan rollerden oluşur. Okuma aydınlatıcısı, metnin ayrıntılarıyla ortaya konulmasına yardımcı olur; sanatçı, okunulan bölümün/öykünün kendisinde uyandırdığı duyguları sanat dallarıyla açıklar; özetleyici, okunan metinle ilgili kısa bir özet sunar; araştırmacı, okunulan metinle ilgili ayrıntılı ve derinlemesine bilgiler elde ederek okuyuculara ekstra bilgiler sunar; sözcük avcısı, metinde geçen yeni sözcükleri, farklı ve ilginç deyimleri, söz dizelerini belirleyerek açıklar; hareket izcisi, karakterlerin hareket ettiği ve olayların geçtiği yerlerin ayrıntılı betimlenmesini sağlar; karakter ustası, metinde geçen önemli karakterleri ve karakterlerin dikkat çeken özelliklerini açıklar (Daniels, 2002; Moeller & Moeller, 2007; Straits, 2007; Straits & Nichols, 2006; Tracey & Morrow, 2006). Okuma çemberinde katılımcılar belirlenen rollere uygun olarak metni incelerler, ardından da bir araya gelerek kolaylaştırıcı eşliğinde tartışmalarını yürütürler. Böylelikle bir metnin okuyucu ile etkileşimi arttırılmış ve bu yolla da anlaşılabilirliği sağlanmış olur. Okuma çemberi yöntemi, okul öncesi dönemde de öğretmen ve öğrenciler için önemli katkılar sunar. Öğrencilerin, sosyal becerilerini geliştirir (Doğan & Kaya-Tosun, 2020). Bununla birlikte öğrenciler için karmaşık ve içeriği bilinmeyen metinleri yansıtıcı, eleştirel ve paylaşımcı bir şekilde okuma ve yorumlama fırsatı verir (Martínez-Valdivia, Pegalajar-Palomino, & Higuera-Rodríguez, 2021). Bu yönüyle de geleneksel yöntemden farklılık gösterir. Geleneksel okuma yönteminde, öğretmen merkezdedir; edebiyat halkasında ise öğrenci merkezde, öğretmen ise rehber konumundadır (Martínez-Valdivia, Pegalajar-Palomino, & Higuera-Rodríguez, 2021). Bu özelliğinden dolayı öğretmen ve öğrenci rollerini yeniden belirlemiştir. Bu yöntem sayesinde öğrenciler, süreçte daha aktif olur, öğretmenler de bunun nasıl uygulanabileceğini öğrenir (Jensen & Bennet, 2016). Buradan yola çıkılarak bu çalışmada okul öncesi öğretmenlerinin gerçekleştirdikleri resimli öykü okuma etkinliklerinde kullanılan resimli öykü

kitaplarının okuma çemberi aracılığıyla tartışılarak öğretmen -kitap arasındaki etkileşimin arttırılması amaçlanmıştır. Araştırmanın amacı doğrultusunda aşağıdaki sorulara cevap aranmıştır:

1. Okuma çemberi oturumlarına yönelik katılımcıların deneyimleri nasıldır?
2. Okuma çemberi eylem araştırması sürecine yönelik katılımcıların görüşleri nelerdir?

Yöntem

Eğitimle ilgili bir duruma müdahale edilme amacı taşıdığından ve doğrudan okul öncesi öğretmenleriyle gerçekleştirildiğinden dolayı da bu çalışma, nitel araştırma yöntemlerinden eylem araştırması ile desenlenmiştir. Araştırmanın katılımcılarını, 4 okul öncesi öğretmeni oluşturmaktadır. Katılımcıların seçiminde ölçüt örnekleme tekniği kullanılmış ve araştırmacı, araştırmanın amacı doğrultusunda belirlediği ölçütlere göre katılımcıları belirlemiştir. Bu çalışmada veri toplama aracı olarak yarı yapılandırılmış görüşme formu, araştırmacı günlüğü, katılımcı günlüğünden yararlanılmıştır. Bu araştırmanın verileri, içerik analizi tekniği ile çözümlenmiştir. Analiz sürecinin sonucunda birinci araştırma sorusuyla ilgili sekiz kategori, 57 koda; ikinci araştırma sorusuyla ilgili üç kategori, dört koda ulaşılmıştır.

Bulgular

Öğretmenlerle toplam sekiz oturum gerçekleştirilmiştir. Birinci oturumun analiz sonuçlarına bakıldığında öne çıkan bir kod olmadığı görülmektedir. Katılımcı günlüklerine yansıyan görüşler ise daha çok ön bilgilerle sınırlıdır. Okuma çemberinin ikinci oturumuyla birlikte kodların sıklık değerinin değişmeye başladığı görülmektedir. Okuma çemberi eylem planı döngüsünün kendini gerçekleştirmeye başladığı söylenebilir. Okuma çemberi etkinliği ile katılımcılar, kitapların hayal dünyası üzerindeki etkisini daha somut bir şekilde görebilmiş ve ifade edebilmiştir. Katılımcılar, okuma süreçlerinde ebeveynlerin rol dağılımları konusunda daha detaylı analizler yapabilmektedir. Bu durum, okuma çemberi sayesinde aile içinde kadın ve erkek rollerine yönelik katılımcıların farkındalığını arttırdığını göstermektedir. Altıncı ve yedinci oturumda okuma çemberinin kitap seçme kriterlerine katkıda bulunduğu ile ilgili görüşler somut olarak ortaya konulmuştur. Özellikle sekizinci oturumda kitap seçme kriteri sıklık değeri en yüksek kod olarak dikkat çekmektedir. Eylem araştırması sürecine yönelik görüşlerinin analizi sonucunda üç farklı kategoriye ulaşılmıştır. Bu kategoriler sıklık değeri açısından “öğretmenlik becerisine katkı” (f=16), “çocukların gelişimine katkı” (f=8) ve “sınıf içi uygulamalara katkı” (f=4) şeklindedir. Çocukların gelişimi ile ilgili katılımcı görüşlerine bakıldığında okuma çemberinin kitap okuma sürecini çocuklar için daha etkili ve somut hale getirebileceği anlaşılmaktadır. Katılımcılar, önceki deneyimlerine dayalı olarak okuma çemberini gelecekteki sınıf içi uygulamalarına yansıttıklarında okuma sürecinin çocuklar için daha iyi olacağını düşünmektedir.

Tartışma ve Sonuç

Araştırmanın oturumlarından elde edilen bulgulardan hareketle katılımcıların birinci oturumda daha çok geçmiş deneyimleri ile sürece dahil oldukları görülmektedir. Her bir oturumda katılımcıların ifadeleri farklılaşmaktadır. Araştırmanın bulgularından hareketle bu durumun okuma çemberi sürecindeki etkileşimin bir sonucu olduğu düşünülmektedir. Katılımcılar, okuma çemberi yönteminin etkisiyle kendi deneyimlerini, diğer katılımcıların görüşleri ile ilişkilendirerek daha farklı bakış açıları sunmaktadır. Araştırmacı günlüğü ve katılımcı günlüklerinden elde edilen bulgulara bakıldığında katılımcıların okuma sürecine yönelik birinci oturumdaki ifadelerinin daha soyut ve genel ifadelerden

oluştugu görülmektedir. İkinci oturumdan sekizinci oturuma kadar geçen sürece bakıldığında katılımcıların ifadelerinin soyuttan somut ve genel ifadelerden daha net ifadelere dönüştüğü görülmektedir. Katılımcı ifadelerinden anlaşılacağı üzere bu somutluk ve netlik, okuma çemberi sürecinin katılımcı ve etkileşimli yönünün sonucudur. Okuma çemberi sürecinin tamamını değerlendirmeye yönelik katılımcılarla yapılan görüşmelerin bulgularından hareketle okuma çemberi yöntemi, okuma sürecini üç farklı açıdan etkilemektedir. Bunlar; mesleki gelişim, öğrenciye görelilik ve öğretim sürecini planlamadır. Okuma çemberi yönteminin katılımcıların mesleki gelişimi olumlu yönde etkilediği, öğrenciye uygun okuma süreci gerçekleştirilebilmesini ve sınıf içi uygulamaların etkili bir şekilde planlanmasını sağladığı sonucuna ulaşılmıştır.

Öneriler


Okul öncesi eğitimcilerin resimli hikâye kitaplarını daha detaylı inceleyip anlamaları için daha fazla araştırma yapılması önerilmektedir. Bu çalışmada okuma çemberi yöntemi kullanılmıştır. Ancak okuma çemberi yöntemi dışında farklılaştırılmış öğretim için farklı stratejiler kullanan eğitimcilerle araştırma yapılması önerilmektedir. Okul öncesi eğitimcilerin eleştirel düşüncelerini ve derinlemesine değerlendirmeler yapmalarını sağlayacak eğitim almaları için hizmet içi eğitim faaliyetleri önerilmektedir. Son olarak okul öncesi eğitimcilerin okullarında farklı okuma yöntemlerini kullanarak resimli hikâye kitaplarını öğrenmeleri ve bu kitaplardan yararlanmaları için uygulamalı atölye çalışmaları, akademik çalışmaların yapılması önerilmektedir.



<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

A Review of Classroom Teachers' Perceptions of Art and Aesthetic Field Competency with Respect to Different Variables in Their Classroom Practices

 Selma Aslantaş, Assoc. Prof. Dr, Corresponding Author
Hatay Mustafa Kemal University, Türkiye
selma.aslantas@mku.edu.tr
Orcid ID: 0000-0003-3386-8095

Article Type: Research Article
Received Date: 26.05.2023
Accepted Date: 19.11.2023
Published Date: 30.11.2023

Plagiarism: This article has been reviewed by at least two referees and scanned via a plagiarism software
Doi: 10.29329/tayjournal.2023.610.14

Citation: Aslantaş, S. (2023). A review of classroom teachers' perceptions of art and aesthetic field competency with respect to different variables in their classroom practices. *Türk Akademik Yayınlar Dergisi (TAY Journal)*, 7(3), 1046-1069.

Abstract

The purpose of the current study is to examine the competency perceptions of classroom teachers with respect to different variables (district centre or village, age and seniority in the profession), both in general and in terms of dimensions (knowledge, application, aesthetic perspective) in the fields of art and aesthetics in classroom practices. The study, based on a descriptive survey model, was conducted with 222 classroom teachers serving in Hatay Reyhanlı district in the fall semester of the 2022-2023 academic year. "Art and Aesthetic Field Competency Scale" has been used for the collection of study data. Data are presented as percentage and frequency values. For comparisons based on gender and place of residence, a parametric technique, namely t-test for independent groups, was used, and for comparisons based on age and seniority, one-way analysis of variance [ANOVA] was used. Based on the findings, it was concluded that there are a number of self-perceived competence dimensions in the field of art and aesthetics among teachers. ANOVA results showed that there was a significant difference between the groups in the application dimension, but there was no significant difference in the knowledge, aesthetics and total dimensions. It was observed that the scores in the application dimension differed statistically significantly according to age. Tukey test was performed to determine the source of differences. As a result of this test, it was concluded that classroom teachers between the ages of 23-29 included more art and aesthetic practices in their lessons than classroom teachers aged 40 and over.

Keywords: Art, aesthetics, art education, classroom teacher.

Introduction

The foundations of the values and sensitivities of the individuals who make up the social structure are laid in the family during childhood. It then continues in the school environment. Raising happy, peaceful individuals with spiritual and physical integrity to ensure the positive continuation of society in all areas of life is one of the most important goals and reasons for existence of schools. It is very important to raise individuals who are academically successful, have national-universal values, and have advanced artistic and aesthetic aspects. School programs target this. Examining the primary education program reveals that national and universal values and the development of individuals in terms of art and aesthetics are some of the targets (Ministry of National Education [MoNE], 2018). The formation and development of aesthetic and artistic feelings in children and their transformation into a lifestyle is possible with education given at the right time and environment. Raising people who have advanced artistic and aesthetic aspects, are artistically conscious, and sensitive to their environment is possible with proficient and well-trained teachers in these subjects (Akdemir, 2012; Kırıçoğlu, 2019; Okan Akin, 2006; Tuna, 2007). Arnheim (2009) states that art is a part of culture and therefore necessary for the equipment of every educated person. Therefore, he states that educators should question whether all parts of culture are necessary for society. When looked at in this context, the necessity and importance of programs including art and aesthetics education for teacher education and training in the programs of teacher training institutions is clearly seen. As stated by Kırıçoğlu (2009); Kumral and Buyurgan (2012); Sevim et al. (2012), raising individuals who have advanced artistic and aesthetic aspects and who are sensitive to art is possible if the teachers who will educate them are well trained and they overcome themselves in these matters. Knowledge and competency in art and aesthetic matters are not something that individuals are born with. Artistic and aesthetic development, which begins in the family environment at birth, continues at school. Art and aesthetics education enables the individual to create a satisfying and beautiful life in emotional and social dimensions by increasing the individual's artistic abilities to the highest level through processes such as giving the individual artistic and aesthetic sensitivity, creating and maintaining artistic taste in the individual. It approaches

holistically to a person. In this way, it creates an educational environment that includes cognitive and affective domains (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2005).

It is important to raise children as individuals with developed artistic and aesthetic sensitivities and to integrate them into society. Therefore, the role of classroom teachers is very important in this regard. Classroom teachers have a very important place in the child's art and aesthetic education. As in the acquisition of other values, students are influenced by their teachers in the formation and development of aesthetic and artistic values and perspectives. Students are affected by teachers' artistic-aesthetic practices and all kinds of attitudes and movements such as posture, speech, attitude and clothing. Although teachers have a lot of influence on students, sometimes they are not aware of this process. From the perspective of daily education processes, classrooms are seen as a place where all kinds of positive character traits are formed, reinforced, modelled and implemented in children. While this makes the role of classroom teachers more important, it also shows that they need to be aware (Can & Yıldırım, 2019; Çetiner Öner, 2019; Özdemir Balakoğlu & Erol, 2021; Sevim et al., 2012).

Art and Aesthetic Field Competence in Classroom Teachers

Art is the expression or reflection of the understanding of beauty in the works created by human beings. In other words, art is the ability or skill to create impulse or motivation to create sufficient, satisfying aesthetic experiences in humans (Sözen & Tanyeli, 2022). While understanding and valuing the beauty in works of art is related to the cultural values of the society, aesthetic experience can be seen in every aspect of life. The transition of beauty from external values to aesthetic values is an important requirement for the aesthetic process (Özdemir Balakoğlu & Erol, 2021). The concept of aesthetics deals with the effects of beauty on the human mind and senses. It is a branch of philosophy that attempts to answer the question of what beauty is (Turani, 2022; Sözen & Tanyeli, 2022; San, 2019). Aesthetics is determined by, but not limited to, art, artistic expressions, the qualities of a thing or object, its features and the elements that make up that object (Özdemir Balakoğlu & Erol, 2021; Can & Yıldırım, 2019; Çetiner Öner, 2019; Sevim et al. 2012). For this reason, any object or object in a person's natural environment can gain aesthetic value. It is seen that aesthetics is related to sensory perceptions and everything that can be perceived sensually constitutes the subject and field of aesthetics. Any object that reaches the senses and could leave an impact can be considered aesthetic (Özdemir Balakoğlu & Erol, 2021; Can & Yıldırım, 2019). Aesthetic values and judgments can be determined by the qualities and characteristics of an object within the scope of art and its artistic expressions but cannot be limited to these. Considering that all kinds of objects around a person can gain an aesthetic value, aesthetic values or judgments cannot be limited only to the artistic dimension and can gain aesthetic value with different features (Buyurgan & Buyurgan, 2020; Özdemir Balakoğlu & Erol, 2021; San, 2010). According to Can and Yıldırım (2019), aesthetic value emerges with the beautification of pleasure or emotional experiences.

It is important for teachers to plan and implement aesthetic education in their lessons, lesson activities that develop aesthetic concepts and aesthetic literacy and raise individuals with aesthetic consciousness (Özdemir Balakoğlu & Erol, 2021; İstanbul Kültür ve Sanat Vakfı [İKSŞV], 2014). It gains special importance, especially when the developmental levels of children in primary education are considered. Educational programs implemented in primary school grades 1 to 4 were examined. It seems that these programs target the characteristics that children should have in order to be raised with art and aesthetics. It is seen that art criticism and aesthetics are chosen as one of the learning areas in

the programs and they include achievements that will enable children to form and develop art and aesthetic value judgments. The program focuses on three basic learning areas. Visual communication and formatting, cultural heritage, art criticism and aesthetics (MoNE, 2018). The importance of classroom teachers having some qualifications in teaching children the art and aesthetic values included in primary education curricula emerges. The influence of classroom teachers is of great importance in the development of artistic and aesthetic values of the child, who encounters the school environment with the values he receives from his family. In this context, the extent to which classroom teachers include art and aesthetic dimensions in their classroom practices or activities, their level of consciousness, awareness and competency levels are of particular importance. In the report of MoNE Teacher Training and Education General Directorate published in 2008, it is stated that "since classroom teachers are obliged to teach more than one course, they must be at the level of competencies based on multi-disciplinary and interdisciplinary understanding" (Narrated by Sungurtekin & Çakır İlhan, 2015, p. 56). Considering the competency of classroom teachers based on interdisciplinary understanding, it is seen that it also includes art and aesthetic perspectives and application processes.

European Commission [EC], (2013) defines teacher competency as; "a complex combination of knowledge, skills, understanding, values, attitudes, and desire that leads to effective, embodied human action in a particular field" (Narrated by Özsoy, 2022, p. 188). It is based on the standards required to be a competent teacher at national and international levels, awareness of the responsibility of teaching, and continuous and sustainable professional development. In this sense, attention is drawn to the importance of studies on teacher education, competencies and standards. Ministry of National Education (MoNE) defines the teaching profession's general competencies as; "The knowledge, skills and attitudes that teachers must have in order to fulfil the teaching profession effectively and efficiently" (MoNE, 2017, p.4). Achieving the planned goals in every field of education is related to the qualifications and competencies of the teachers who direct this process. Six competency areas have been determined by MNE. These are: "personal and professional values - professional development, knowing the student, learning and teaching process, monitoring and evaluating learning and development, school, family and community relations, program and content knowledge" (Narrated by Özsoy, 2022, pp. 190-191). Teachers' competency areas are of great importance in the cultural, artistic and aesthetic development of students. One of the aims of the curriculum is to ensure that students who complete primary school become individuals who are oriented towards living a healthy life by acquiring social skills and aesthetic sensitivity in accordance with their development levels and individuality and using them effectively in their lives (MoNE, 2018). In the implementation dimension of these goals and objectives, the importance of the teaching profession and the competency levels of teachers attract more attention. Art and aesthetic education are a process that begins with the birth of the child and continues in different ways at all levels of education from pre-school. Primary education constitutes a very important dimension of this process (Buyurgan & Buyurgan, 2020). After family members, the children's role models are their teachers. Especially classroom teachers, who are taken as role models by children, have a direct impact on students, from their lesson practices in art and aesthetic dimensions to their speech, attitude and behaviour. Their responsibilities are great and important in raising children both inside and outside the classroom. In this context, it includes many important factors such as the way classroom teachers are trained, their practice and professional competencies. Practicing the teaching profession is an art in itself and therefore teachers need to be good role models. In this context, classroom teachers can be good role models for students in different dimensions by gaining some competencies in the field of art

and aesthetics education. Knowledge alone is not a sufficient condition to be a good teacher. It should not be forgotten that teaching has an artistic aspect (Genç, 2007; Tezcan, 1998; Sungurtekin & Çakır İlhan 2015). Providing adequate art and aesthetics education to primary school students is possible with well-trained classroom teachers. The primary education period is of great importance. Therefore, today, practice covering art and aesthetic education is possible with qualified classroom teachers who are trained to a high standard in terms of knowledge and different skills (Hatipoğlu Kara, 2022). Art education within qualified, high-standard education and the aesthetics and art dimensions within this education constitute an important area for teachers. Especially in the higher education process, providing competencies to teacher candidates through theoretical and applied studies is of particular importance. This requirement is important in terms of the training that teacher candidates should receive before starting the profession (Karaca, 2003; Çakır İlhan, 2003; Sungurtekin & Çakır İlhan, 2015).

The literature has been examined and it is seen that the studies are directly related to the art and aesthetic dimensions or within the scope of different teacher competency areas. Açıkgöz (2020) examined the artistic leadership of classroom teachers, Akyıldız, (2020) examined the self-competency perceptions of preschool teachers in gaining art and aesthetic values, and Akyıldız (2016) examined the competency perceptions of classroom teachers regarding the art and aesthetic field in terms of some variables. Albayrak (2015), There is a relationship between the professional values of primary school teachers in the aesthetic dimension and teacher competencies. Aydın & Ünsal (2022) examined this relationship, according to the opinions of teachers and parents, and the reasons why classroom teachers are preferred in terms of values, including aesthetic values. Ceylan (2008) compared the perspectives of students who received visual arts education at the 10th grade level of secondary school and those who did not, on the aesthetics of the environment they live in. Çiftçioğlu Şenkaya (2021) examined the problems encountered by classroom teachers in primary school visual arts classes according to teachers' opinions. Hacıömeroğlu and Şahin (2011) examined classroom teacher candidates' perception of special field competency, including art and aesthetic dimensions, about their mentor teachers. Dolapçioğlu et al. (2019) examined primary school teachers' views on aesthetics and creativity practices in social studies classes. Francis (2020) examined the aesthetic perceptions of primary school teachers. Kuşdemir Kayıran and Özyurt (2020) examined the status of classroom teachers in gaining special field competency according to their teaching education and professional experience. Liang, W. and Yu Y. (2021) examined the development of teachers' artistic achievements according to the status quo in contemporary aesthetics education. Özdemir Balakoğlu and Erol (2021) examined prospective teachers' evaluations of sensory perception development through aesthetic object choices. Miralay and Eğitimci (2019) investigated the aesthetic perceptions of art educators at the higher education level in painting classes and their impact on learners. Sungurtekin and Çakır İlhan (2015) examined classroom teacher "Art and Aesthetics" competencies in the context of music education competencies in line with the opinions of the instructors. Yılmaz Arıkan and Şirin (2020), on the other hand, examined the perspectives of subject teachers working in primary schools on art education. Serhatlıoğlu and Kalo (2022) examined classroom teachers' views on 21st century learning and teaching skills. Yazıcı et al. (2016) examined the opinions of preschool teachers regarding art, and Yılmaz and Şahan (2016) investigated the determination of prospective teachers' views on the need for art education. These studies were conducted in different dates, ages, education levels, disciplines, geographies and cultures. A limited number of studies have been found regarding classroom teachers' perceptions of art and

aesthetics, directly examining art and aesthetic dimensions in a wide range of dimensions, from comprehensive practice to knowledge, from seniority to age. At this point, it is considered important to examine this research in terms of knowledge, practice and aesthetic view of classroom teachers' artistic and aesthetic perceptions, as well as variables such as age, years in the profession, and geography of residence.

Purpose of the Study

The purpose of the study is to examine the competency perceptions of classroom teachers towards art and aesthetic dimensions (knowledge, application, aesthetic perspective) in classroom practices with different variables (district centre or village, age and years in the profession).

In this context, answers to the following questions were sought.

1. What is the level of competency perception of 1st grade teachers regarding the dimension of having knowledge about art and aesthetics?
2. What is the level of competency perceptions of classroom teachers regarding the practical dimension of art and aesthetics?
3. What is the perception of classroom teachers towards aesthetic perspectives in their classroom practices?
4. What is the general level of competency perception of classroom teachers in the field of art and aesthetics?
5. Do grade teachers' perceptions of art and aesthetic field competencies change according to the following?
 - a. Gender,
 - b. Where they work (district centre or village),
 - c. Age,
 - d. Years in profession?

Method

In this research, the descriptive survey model, which is a quantitative research approach, was used. Survey models are research approaches that aim to describe a past or present situation as it exists. The individual or object that is the subject of the research is tried to be defined within its own conditions and as it is. No effort is made to change or influence the variables in any way (Büyüköztürk et al., 2013). A general screening model was applied in this research. General screening models are made on the entire universe or a group, or a sample taken from it, to reach a general judgment about the universe in a universe consisting of many elements. Single or relational scans can be made with general screening models (Büyüköztürk et al., 2013; Karasar, 2012).

Study Group

The study group of the research consisted of a total of 222 classroom teachers working in 50 primary schools affiliated with the Ministry of National Education (17 centres and 33 villages) located in the centre and villages of Reyhanlı district of Hatay. The study group was made up of 114 women and

107 men. One person did not specify. At the same time, according to age ranges, 108 people were in the 23-29 age range, 70 people were in the 30-39 age range, and 43 people were in the 40 and over age range, while one person did not specify. In the research, "*Art and Aesthetic Field Competency Scale*" was applied to the classroom teachers in the study group in the fall semester of the 2022-2023 academic year.

Data Collection Tool

Art and Aesthetic Field Competency Scale

In this study, the "*Art and Aesthetic Field Competency Scale*" developed by Akyıldız (2016) was used as the data collection tool. The author's permission was taken in this regard. The overall reliability of the scale was calculated using the Cronbach Alpha Reliability coefficient, Spearman-Brown correlation coefficient and Guttman split-half reliability formula. The Cronbach Alpha reliability coefficient of the scale was found to be 0.88, the Spearman-Brown correlation coefficient was 0.79, and the Guttman split-half value was 0.789. The Cronbach Alpha value of the scale was calculated as 0.79 for the first half, consisting of the first 6 items, and 0.85 for the second half, consisting of the last 5 items. The reliability coefficient (Correlation Between Forms) of one half of the test was calculated as 0.652. As a result of these calculations, it was decided that the scale was reliable. Factor analysis was performed and it was determined that the items were collected in three sub-dimensions. These dimensions are named "*Having Knowledge*", "*Practising*" and "*Aesthetic View*" (Akyıldız, 2016, p. 4). In the study conducted to determine the reliability of the scale in this research, the Cronbach's alpha internal consistency coefficients of the scale were calculated as 0.706 for the knowledge dimension, 0.626 for the application dimension, 0.852 for the aesthetic view dimension and 0.875 for the entire scale.

Data Analysis

During the data analysis process, the data set was first examined, and empty data was detected. Little MCAR test was performed to determine whether the empty data were randomly distributed. Since these test results were insignificant ($X^2=15.239$; $df=30$; $p=.988$) and the number of participants leaving any item blank was less than 2%, blank data was assigned using the expectation maximization method (Graham, 2009). After the data set was ready for analysis, kurtosis and skewness coefficients were examined. In the dimensions of knowledge (skewness=-.435; kurtosis=.167), application (skewness=-.055; kurtosis=-.160), aesthetic view (skewness=-.394; kurtosis=.164) and the total scale (skewness=-.202; kurtosis = -.018) kurtosis and skewness coefficients were in the range of ± 2 . For this reason, parametric techniques were used to analyse the data (George & Mallery, 2016). Accordingly, percentage and frequency values were calculated in the presentation of classroom teachers' general competency levels regarding art and aesthetics. In comparisons based on gender and place of residence, t-test was used for groups independent of parametric techniques, and one-way analysis of variance [ANOVA] was used in comparisons based on age and seniority. SPSS 25.0 package program was used to analyse the data and the findings are presented in the form of tables.

Ethical Permits of Research

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation is Hatay Mustafa Kemal University Presidency of Social and Human Sciences Scientific Research and Publication Ethics Committee.

Date of ethical review decision= 30.06.2022

Ethics assessment document issue number= E-21817443-050.99-184617-09

Findings

This section includes findings that will answer the questions of the research.

Classroom Teachers' Perceptions Regarding Art and Aesthetic Field Competencies

With the purpose of determining the general competency perception levels of classroom teachers regarding art and aesthetics, the scores they received from the art and aesthetic competency scale were classified according to their competence perception levels and frequency and percentage distributions were calculated. The findings are presented in Table 1.

Table 1: *Art and aesthetic field competency perception levels of classroom teachers*

	Having Knowledge f (%)	Practise f (%)	Aesthetic View f (%)	Total f (%)
Very insufficient	2 (%0,9)	3 (%1,4)	4 (%1,8)	0 (%0)
Insufficient	12 (%5,4)	36 (%16,2)	12 (%5,4)	15 (%6,8)
Partially sufficient	75 (%33,8)	89 (%40,1)	47 (%21,2)	77 (%34,7)
Sufficient	71 (%32,0)	73 (%32,9)	103 (%46,4)	101 (%45,5)
Very sufficient	62 (%27,9)	21 (%9,5)	56 (%25,2)	29 (%13,1)

According to Table-1, in the ***dimension of having knowledge***, a small portion of classroom teachers perceive themselves as very insufficient (0.9%), while a slightly higher rate perceives their knowledge as insufficient (5.4%). While the majority of the teachers perceive their knowledge as partially sufficient (33.8%), a significant portion of them perceive themselves as sufficient (32.0%) and very sufficient (27.9%).

In the ***practise dimension***, a small percentage (1.4%) of classroom teachers stated that their application adequacy perception was at a very insufficient level, while 16.2% stated that it was at an insufficient level. While nearly half of the teachers evaluated their perception of competence as partially sufficient (40.1%), a similar percentage (32.9%) evaluated themselves as sufficient. A smaller group expressed their perception of the practice at a very sufficient level (9.5%).

In the ***aesthetic perspective dimension***, the rates of teachers who perceive themselves as very insufficient (1.8%) or insufficient (5.4%) are quite low. While a significant proportion of teachers perceive their perspective as partially sufficient (21.2%), a significant proportion of teachers perceive themselves as sufficient (46.4%). Approximately one quarter of the teachers stated that they were at a very sufficient level (25.2%) in terms of aesthetics.

In the ***total score*** category, there are no teachers in the "very insufficient" category. The majority of primary school teachers perceive themselves as partially sufficient (34.7%) or sufficient (45.5%). A lower percentage of teachers (13.1%) stated that they were at a very sufficient level. When the results are evaluated in general, although there are small differences according to the dimensions, it is possible to claim that most classroom teachers perceive themselves as partially sufficient or sufficient.

Classroom Teachers' Perceptions of Art and Aesthetic Field Competency According to Gender

With the purpose of comparing the scores obtained by classroom teachers from the dimensions and total of the Art and Aesthetics Competency Scale according to their gender, a t-test was conducted for independent groups. The findings are presented in Table 2.

Table 2: T-test analysis results of classroom teachers' perceptions of art and aesthetic field competency for independent groups according to gender

	Gender	N	\bar{X}	ss	sd	t	*p
Information	Female	114	3,73	,71	219	,305	,761
	Male	107	3,70	,76			
Practise	Female	114	3,22	,62	219	-,416	,678
	Male	107	3,26	,66			
Aesthetic View	Female	114	3,75	,77	219	,261	,794
	Male	107	3,73	,70			
Total	Female	114	3,55	,59	219	,057	,955
	Male	107	3,55	,62			

*p<.05

According to Table-2, the scores obtained by classroom teachers from knowledge dimension ($t_{(219)} = 0.305$, $p = 0.761$), practise dimension ($t_{(219)} = -0,416$, $p = 0,678$), aesthetic view dimension ($t_{(219)} = 0,261$, $p =$) and whole scale ($t_{(219)} = 0.057$, $p = 0.955$) do not differ significantly as per gender. Accordingly, it can be said that male and female teachers have similar levels of art and aesthetic competency perceptions.

Perceptions Of Art and Aesthetic Field Competency Of Classroom Teachers According to Where They Live.

To compare the scores obtained by classroom teachers from the dimensions and total of the Art and Aesthetics Competency Scale according to where they live, a t test was conducted for independent groups. The findings are presented in Table 3.

Table 3: T-test analysis results for independent groups of classroom teachers' perceptions of art and aesthetic field competition according to where they live.

	Location	N	\bar{X}	Ss	sd	t	*p
Knowledge	District	132	3,77	,73	220	1,313	,191
	Village	90	3,64	,72			
Practise	District	132	3,26	,65	220	,546	,585
	Village	90	3,21	,61			
Aesthetic	District	132	3,73	,69	220	-,136	,892
	Village	90	3,75	,79			
Total	District	132	3,57	,60	220	,578	,564
	Village	90	3,52	,62			

*p<.05

According to Tablo-3, the scores obtained by classroom teachers from knowledge dimension ($t_{(220)} = 1.313$, $p = 0.191$), practise dimension ($t_{(220)} = 0.546$, $p = 0.585$), aesthetic view dimension ($t_{(220)} = -0.136$, $p = 0.892$) and whole scale ($t_{(220)} = 0.578$, $p = 0.564$) do not differ significantly as per their location. Accordingly, it can be said that teachers living in the district centre or village have similar levels of artistic and aesthetic competency perception.

Classroom Teachers' Perceptions of Art and Aesthetic Field Competency According to Their Ages

ANOVA was conducted to compare the scores obtained by classroom teachers from the dimensions and total of the Art and Aesthetics Competency Scale according to their ages. The findings obtained are presented in Table 4.

Table 4: ANOVA results of classroom teachers' perceptions of art and aesthetic field competition according to their ages

		Sum of Squares	Sd	Average of Squares	F	*p
Knowledge	Intergroup	1,027	2	,513	,965	,383
	Within Groups	115,948	218	,532		
	Total	116,974	220			
Practise	Intergroup	2,956	2	1,478	3,786	,024*
	Within Groups	85,104	218	,390		
	Total	88,060	220			
Aesthetic	Intergroup	,606	2	,303	,556	,574
	Within Groups	118,877	218	,545		
	Total	119,483	220			
Total	Intergroup	1,312	2	,656	1,808	,166
	Within Groups	79,116	218	,363		
	Total	80,428	220			

*p<.05

According to Tablo-4, the scores obtained by classroom teachers from knowledge dimension ($F_{(2, 218)} = .965, p = 0.383$), aesthetic view dimension ($F_{(2, 218)} = 0.556, p = 0.574$) and whole scale ($F_{(2, 218)} = 1.808, p = 0.166$) do not differ significantly as per their age. However, the scored obtained from practise dimension ($F_{(2, 218)} = 3.786, p = 0.024$) had significant differences as per age. Tukey test was performed to determine the source of differences. It has been determined that classroom teachers between the ages of 23-29 perceive that they include more art and aesthetic practices in their lessons than classroom teachers aged 40 and over.

Perceptions of Art and Aesthetic Field Competency of Classroom Teachers According to Their Professional Seniority

ANOVA was conducted to compare the scores obtained by classroom teachers from the dimensions and total of the Art and Aesthetics Competency Scale according to their professional seniority. The findings are presented in Table 5.

Table 5. ANOVA results of classroom teachers' perceptions of art and aesthetic field competition according to seniority in the profession

		Sum of Squares	Sd	Average of Squares	F	*p
Knowledge	Intergroup	1,235	4	,309	,567	,687
	Within Groups	114,379	210	,545		
	Total	115,614	214			
Practise	Intergroup	2,005	4	,501	1,257	,288
	Within Groups	83,727	210	,399		
	Total	85,731	214			
Aesthetic	Intergroup	1,794	4	,448	,814	,518
	Within Groups	115,723	210	,551		
	Total	117,517	214			
Total	Intergroup	,731	4	,183	,489	,744
	Within Groups	78,549	210	,374		
	Total	79,280	214			

*p<.05

According to Tablo-5, the scores obtained by classroom teachers from knowledge dimension ($F_{(4, 210)} = .567, p = 0.687$), practise dimension ($F_{(4, 210)} = 1.257, p = 0.288$), aesthetic view dimension ($F_{(4, 210)} = 0.814, p = 0.518$) and whole scale ($F_{(4, 210)} = 0.489, p = 0.744$) do not differ significantly as per their professional seniority. Based on this, it can be said that classroom teachers with different seniority have similar perception of art and aesthetic competency.

Discussion and Conclusion

The following conclusions were reached based on the findings obtained in line with the general purpose of the research.

Classroom Teachers' Perceptions of Art and Aesthetic Field Competence;

In the dimension of knowledge, it was concluded that they perceived themselves as mostly partially sufficient, sufficient and very sufficient, from very sufficient to insufficient, and slightly at very insufficient and insufficient levels. ***In the practice dimension***, from very sufficient to very insufficient, it was concluded that they perceived themselves as partially sufficient, sufficient and very sufficient, and that those who perceived insufficient had a slightly higher level than those who perceived very sufficient, and that they perceived themselves as very insufficient, albeit at a very low level. While a small proportion of classroom teachers perceive their competency in the practical dimension as very insufficient, a higher proportion perceive it as insufficient. While a significant portion of teachers perceive their competency as partially sufficient, they perceive themselves as sufficient. A smaller group perceives themselves as very sufficient in terms of practice. ***In the aesthetic perspective dimension***, from very sufficient to insufficient, it has been concluded that nearly half of the classroom teachers perceive themselves as sufficient, a quarter of them perceive themselves as partially sufficient, and very sufficient, even though it is a very low rate, and very insufficient. In the aesthetic perspective dimension, it is seen that the proportion of teachers who perceive themselves as very insufficient or insufficient is quite low. While a significant proportion of teachers perceive their perspective as partially sufficient, a significant proportion perceive themselves as sufficient. Approximately one quarter of the teachers stated that they were at a very sufficient level in terms of aesthetics. In general, in all sub-dimensions, there are a limited number of classroom teachers who consider themselves insufficient or very insufficient in their perception of the fields of art and aesthetics. ***In the total scores category***, the majority of teachers perceive themselves as partially sufficient or sufficient, with no teachers in the "very insufficient" category. A lower percentage of teachers stated that they were at a very sufficient level. When the results are evaluated in general, although there are small differences according to the dimensions, it can be said that the majority of classroom teachers perceive themselves as partially sufficient or sufficient.

Various conclusions were reached based on the findings obtained in terms of the variables discussed in the study. Results were obtained according ***to gender***, in the knowledge dimension, in the application dimension, in the aesthetic view dimension and in the total scale. From these results, it was determined that there was no statistically significant difference according to gender. According to these results, it can be said that male and female teachers have similar levels of art and aesthetic competency perception. ***According to where they live***, results were obtained in the knowledge dimension, application dimension, aesthetic perspective dimension and the total scale. It was observed that there was no statistically significant difference in the results obtained. In this context, it can be said that

teachers living in the district centre or village have similar levels of artistic and aesthetic competency perception. **According to age**, results were obtained in the knowledge dimension, aesthetic perspective dimension, application dimension and the total scale. In the results obtained, it was seen that there was no statistically significant difference in the knowledge dimension, aesthetic view dimension and the total of the scale, while there was a statistically significant difference in the application dimension according to age. Tukey test was performed to determine the source of differences. It has been concluded that classroom teachers between the ages of 23-29 have the perception that they include more art and aesthetic practices in their lessons than classroom teachers aged 40 and over.

According to their professional seniority, results were obtained in the knowledge dimension, application dimension, aesthetic perspective dimension and the total of the scale. The results obtained showed that there was no statistically significant difference between classroom teachers according to their professional seniority. According to this result, it can be said that classroom teachers with different seniority have similar perceptions of art and aesthetic competency. When the results are evaluated in general, although there are small differences according to the dimensions, it can be said that the majority of classroom teachers perceive themselves as partially sufficient or sufficient.

The results were evaluated overall. The results were evaluated overall. It was determined that there was a statistically significant difference in the evaluation made according to age in the Practice dimension, but there was no significant statistical difference between the scores of the other dimensions. It was concluded that the difference in the application dimension showed a significant difference in the results of classroom teachers aged 23-29 compared to teachers aged 40 and over. This result may suggest that the significant difference depending on age ranges may be due to different reasons. It brings to mind the idea that all kinds of activities in the artistic-aesthetic fields carried out in the classroom environment can be associated with age-related performances. In the study conducted by Sağlamçubukçu (2019), classroom management skills were examined. It has been concluded that classroom teachers between the ages of 31-40 are more effective in providing effective communication with students, creating a learning environment suitable for the purpose of teaching, organizing motivation-enhancing activities, attracting the student's attention and ensuring their active participation in the lesson, and managing activities using appropriate methods and techniques. In the study conducted by Güneş (2016), it was determined that the significant difference between the age variable and the sub-dimensions of classroom management skills such as planning, behaviour and time management, motivation and learning environment was in favour of the 41-50 age groups. In their studies, İlgar (2007), Özgan et al. (2011), Yılmaz (2011) and Sağlamçubukçu (2019) found a significant difference between the age variable and classroom management skills.

In a study conducted by Hacıömeroğlu and Şahin (2011), the perceptions of prospective teachers regarding eight specific field competencies of classroom teachers working in practice schools were evaluated. In the study, it was concluded that "art and aesthetics and physical education and security" were "sufficient", while other perceptions were "completely sufficient". Considering these results, they support the result of this research. The results of this study showed that classroom teachers perceived themselves as sufficient in art and aesthetic dimensions. In the study conducted by Aydın and Ünsal (2022), the reasons why classroom teachers are preferred by prospective teachers and parents were examined in terms of different variables. In the research, different preference results were reached in personal, academic, professional and social competency and skill areas. The results obtained at the end

of the study were examined. It is striking and thought-provoking that the artistic and aesthetic dimension is not seen as one of the reasons for preference of classroom teachers. In this research, the result that classroom teachers perceive themselves as sufficient in the art and aesthetic competency levels and that there is no difference between the variables other than the age factor in the application dimension can be interpreted as the classroom teachers perceive themselves as sufficient in the art and aesthetic dimensions of knowledge, aesthetic view and application in classroom activities. On the other hand, a study was conducted by Akdemir (2012) to determine the most important values of classroom teachers in the Social Studies Curriculum, their perceptions and opinions about values, and the activities they implement in the classroom. In this study, it was concluded that the value they attach most importance to is "fairness" and the value they attach least importance to is "aesthetics". According to this result, it may be thought that there are different reasons why aesthetic value is given the least importance. In the program of the Council of Higher Education (2023), the Teaching of Visual Arts Course is taught to classroom teacher candidates as a theoretical course for three hours a week in the final year. Considering the in-class practice studies for primary school grades 1-4, it is a thought-provoking and important issue for prospective teachers whether this course will be sufficient for the practical dimension in their future professional lives. As Sungurtekin and Çakır İlhan (2015) stated, there are different problems related to art and aesthetic practices in the classroom teacher training program make it difficult for teacher candidates to gain the necessary competencies. Considering the importance of the primary education period, it is of great importance to train qualified classroom teachers in terms of features such as knowledge, skills and attitudes in the field of art education (İlhan, 2003). It is important for the teaching profession to prepare competencies in the field of art education within the framework of national competencies and to implement practices at the higher education level to train classroom teachers who win these competencies. In the process of training qualified teachers, competencies must be provided to teacher candidates through theoretical and applied studies (Karaca, 2003; Sungurtekin & Çakır İlhan, 2015). Such an education and training process will have a positive impact on the process in many ways. It is seen that competencies were created under the title of "Art and Aesthetics" in the general competency draft of the teaching profession prepared by the Ministry of National Education (2004) (İlhan, 2005).

The education provided for the formation, development and lifelong continuation of artistic and aesthetic views is not only the subject of a specific field. Individuals can live a happier, more productive life with art and aesthetic education and practices given in the right way and at the appropriate time. It is important to consider and examine the concepts of art and aesthetics, which are frequently encountered from primary education to higher education, at every level of education. Art and aesthetics are subjects that students will receive education at all levels from primary education to higher education institutions. Rather than a special field or an area that a special group of students will benefit from, they are areas where students from all fields and all classes will receive education. Educators who work or will work at all levels and fields of education, from primary education to higher education, are very effective in creating a perspective and attitude towards art and aesthetics, and in interpreting and conveying the meaning of art and aesthetics in the right place and way in daily life (Sevim et al., 2012). In addition, the physical and aesthetic features of the school environment contribute positively to the motivation of teachers and students. This increases the excitement of the teachers and transfers the energy of the work environment to the students (Can & Yıldırım, 2019).

Within the scope of art and aesthetic education, aesthetic perception, aesthetic concern and taste are both individual and social. One of the problems brought by urbanization is that the aesthetic concern of individuals is not sufficiently developed. The individual, whose sensitivity will increase with the increase in the level of aesthetic concern and appreciation, will also be disturbed by the disorder and ugliness in his environment. From this perspective, lack of aesthetic appreciation emerges as a social problem as well as an individual one. A quality and effective art education can be considered as the most important tool to solve this problem. Individuals use aesthetic tastes and perceptions at almost every moment of life, from their personal behaviour to clothing, from their view of the environment they live in to arranging that environment. Therefore, individuals' aesthetic taste and aesthetic perception ability should be developed through an education process starting from an early age (Tuna, 2007). In the study conducted by Ocak Karabay and Bilir Seyhan (2018), it was seen that it is very important for children to receive education in the early period in a way that the connections they establish with art and aesthetics will contribute to the creation of interest in art and the development of important skills related to art and aesthetics. In this context, the importance of studies aimed at training classroom teachers in terms of art and aesthetics at a broad and sufficient level is seen. Children's contact with art at an early age will contribute to the creation of a lifelong interest in art and will bring individuals with high levels of aesthetic appreciation into society. In this way, art and aesthetic values will continue to expand from the individual to the society.

Recommendations

This research was conducted with a limited number of classroom teachers in a district in Turkey. In the future, it can be done on a larger scale, in different geographies, and by reaching more classroom teachers. Such research can lead to broader results and provide a broader assessment of classroom teachers' perceptions of art and aesthetic dimensions. The importance of primary education in the upbringing of children cannot be ignored. Therefore, it is considered important to conduct different research in terms of training sufficient and qualified classroom teachers in terms of characteristics such as knowledge, skills and attitudes towards competency perceptions in art and aesthetic dimensions. This research was conducted with classroom teachers working in primary education. Different research can be conducted to determine the art and aesthetic perceptions of branch teachers working in different branches in secondary education or depending on the school they graduated from. Such studies, which are carried out on a large scale with teachers at all levels of education, are considered important in raising the individuals who will form the society with the artistic and aesthetic dimensions, and on the way to becoming a more productive and happy society.

References

- Açıkgöz, A. (2020). *Sınıf öğretmenlerinin sanatsal liderliği* [Artistic leadership of classroom teacher]. (Tez No. 642648). [Master Thesis, Kocaeli University], National Thesis Center.
- Albayrak, F. T. (2015). *İlkokul öğretmenlerinin mesleki değerleri ile öğretmen yetkinlikleri arasındaki ilişki Erzurum ili örneği* [The relationship between the professional values and teacher competencies of primary school teachers: Erzurum province sample]. (Tez No. 381646). [Master Thesis, Atatürk University], National Thesis Center.
- Akdemir, S. (2012). *Sınıf öğretmenlerinin sosyal bilgiler programındaki değerlerle ilgili görüşleri ve bunların kazandırılmasına ilişkin uygulamaları* [Primary school teachers' opinions about the values in social sciences programme and their practices for having them acquired]. (Tez No. 311818). [Master Thesis, Necmettin Erbakan University], National Thesis Center.
- Akyıldız, S. (2020). Okul öncesi öğretmenlerinin sanat ve estetik değerleri kazandırma öz yeterlik algılarının incelenmesi [Examining preschool teachers' self-competency perceptions in helping students acquire artistic and aesthetic values]. *Journal of Values Education*, 18(39), 209-234.
- Akyıldız, S. (2016). Sınıf öğretmenlerinin sanat ve estetik alanla ilgili yeterlik algılarının bazı değişkenler açısından incelenmesi [Investigating classroom teachers' perceptions about art and aesthetic field competencies on the basis of some variables]. *Dicle University Journal of Ziya Gökalp Faculty of Education*, (27), 71-82.
- Arnheim, R. (2009). *Görsel düşünme* [Visual thinking]. (R. Ögdül, Trans.). Metis
- Aydın, S., & Ünsal, S. (2022). Öğretmen ve veli görüşlerine göre sınıf öğretmenlerinin tercih edilme nedenleri [Reasons for preference of classroom teachers according to the opinions of teachers and parents]. *Ankara University Journal of Faculty of Educational Sciences*, 55(1), 183-217
- Buyurgan, S., & Buyurgan, U. (2020). *Sanat eğitimi ve öğretimi. Her eğitim kademesine yönelik* [Art education and training. For all educational levels]. (6th ed.). Pegem.
- Büyüköztürk, Ş., Akgün, Ö. E., Karadeniz, Ş., Demirel, F., & Kılıç, E. (2013). *Bilimsel araştırma yöntemleri* [Scientific research methods]. Pegem.
- Can, N., & Yıldırım, N. (2019). Öğretmenlik mesleği ve estetik [Teaching profession and aesthetics]. In (G. Bedir, & V. Yar Yıldırım Eds.), *Öğretmenlik mesleğinin sanatsal değişkenleri* [Artistic variables of the teaching profession]. (1st ed., pp. 43-70). Pegem.
- Ceylan, G. (2008). *Ortaöğretim 10. sınıf düzeyinde görsel sanatlar eğitimi alan ve almayan öğrencilerin yaşadıkları çevrenin estetiğine bakış açılarının karşılaştırılması* [The comparison of students' aspects of perception towards the environment's aesthetics they live in of those who have taken the art education and not on the level of 10th grade in high school]. (Tez No. 227845). [Master Thesis, Gazi University], National Thesis Center.
- Çakır İlhan, A. (2003). Sınıf öğretmeni yetiştirme programları ve sanat eğitimi [Training programs for classroom teachers and art education]. *Ankara University Journal of Faculty of Educational Sciences (JFES)*, 36(1), 13-24.
- Çetiner Önal, A. (2019). Fiziksel estetik; duruş ve öğretmen mesleği. In (G. Bedir & V. Yar Yıldırım, Eds.), *Öğretmenlik mesleğinin sanatsal değişkenleri* [Artistic variables of the teaching profession]. (1st ed., pp. 71-89). Pegem
- Çiftçioğlu Şenkaya, İ., (2021). *Sınıf öğretmenlerinin ilkokul görsel sanatlar derslerinde karşılaştıkları sorunlar ve öğretmen görüşlerine göre değerlendirilmesi (Bursa ili örneği)* [Problems encountered by classroom teachers in primary school visual arts classes and assessment according to teachers' views (Bursa province example)]. (Tez No. 675663). [Master Thesis, Uludağ University], National Thesis Center.
- Dolapçioğlu, S., Gürkan, B., & Karakuş, M. (2019). Aesthetics and aesthetic creativity in social studies. *Pegem Journal of Education and Instruction*, 9(3), 913-944.
- Francis, H. D. (2020). *Qualitative study on the aesthetic perceptions of in-service elementary school teachers* (Thesis number: 769). [Master Thesis, Wayne State University]. Access of date: 19.11.2023 https://digitalcommons.wayne.edu/oa_theses/769
- Genç, S. Z. (2007). Öğrenci algılarına göre ideal bir öğretim elemanında bulunması gereken özellikler [Characteristics that an ideal instructor should have, according to student perceptions]. *Millî Eğitim Dergisi*, 173, 210-218.
- George, D., & Mallery, P. (2016). *IBM SPSS statistics 23 step by step: A simple guide and reference*. Routledge.

- Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology*, 60, 549-576.
- Güneş, (2016). *Sınıf öğretmenlerinin sınıf yönetim becerileri, teknoloji kullanımları ve öz yeterlilik inançları arasındaki ilişki* [The relationship between classroom teachers' classroom management skills, technology use and self competency beliefs]. (Tez No. 450126). [Doctoral dissertation, Gazi University]. National Thesis Center.
- Hacıömeroğlu, G., & Şahin, Ç. (2011). Sınıf öğretmeni adaylarının uygulama öğretmenleri hakkındaki özel alan yeterlikleri algısı [Elementary preservice teachers' perceptions of their cooperating teachers' special field competency]. *Hatay Mustafa Kemal University Social Sciences Institute Journal*, 8(15), 473-486.
- İstanbul Kültür Sanat Vakfı [İKSUV] (December, 2014). *Türkiye'de sanat eğitimi (yeniden) düşünmek* [Rethinking art education in Turkey]. Access date of: 22.11.2022 https://www.iksv.org/i/content/230_1_SanatEgitimi_2014.pdf
- İlgar, İ. (2002). *İlköğretim öğretmenlerinin sınıf yönetimi becerileri üzerine bir araştırma* [A research classroom management skills of primary school teachers]. (Tez No. 219751). [Doctoral dissertation, İstanbul University], National Thesis Center.
- Kırıçoğlu, O. T. (2019). *Çocukluktan gençliğe sanatsal gelişme: Ressam çocuktan sanatçı gence* [Artistic development from childhood to youth: From artist child to artist youth]. (1st ed.). Art Series. Utopia.
- Kırıçoğlu, O. T. (2009). *Sanat, kültür, yaratıcılık. Görsel sanatlar ve kültür eğitimi-öğretimi* [Art, culture, creativity. Visual arts and culture education-teaching]. (8th ed.). Pegem.
- Kumral, Ç., & Buyurgan, S. (2012). Sanat eğitimi öğrencilerinin estetik gelişimleri için öneriler [Proposals for aesthetic development of school students in anatolian fine art high schools]. *Journal of European Education*, 2(2), 1-16.
- Kuşdemir Kayıran, B., & Özyurt, M. (2020). Sınıf öğretmenlerinin özel alan yeterliklerini kazanma durumlarının öğretmenlik eğitimlerine ve meslekî deneyimlerine göre incelenmesi [An analysis of elementary school teachers acquisition of special field competencies as to teaching training and professional experience]. *Kalem International Journal of Education and Human Sciences*, 10(1), 337-363.
- Liang, W., & Yu Y. (2021). Research on the improvement of teachers' artistic accomplishment based on the status quo of contemporary aesthetic education. *Journal of Contemporary Educational Research*, 5(12), 93-96.
- Hatipoğlu Kara, P. (2022). *Sınıf öğretmenlerinin sınıf yönetimi becerilerinin bazı kişisel değişkenlere göre incelenmesi* [Classroom teachers' classroom management skills investigation according to some personal variables], (Non-Thesis Master's Project, Pamukkale University), Access of date: 22.12.2022 <https://gcris.pau.edu.tr/bitstream/11499/39015/1/P%C4%B1>
- Karasar, N. (2012). *Bilimsel araştırma yöntemleri* [Scientific research methods] (24th ed.). Nobel
- Karaca, E. (2003). *Öğretmen adaylarının ölçme ve değerlendirme yeterliklerine ilişkin algıları* [Perceptions towards measurement and evaluation competencies of teacher candidates]. (Tez No. 137559). [Doctoral dissertation, Ankara University], National Thesis Center.
- Kumral, Ç., & Buyurgan, S. (2012). Sanat eğitimi öğrencilerinin estetik gelişimleri için öneriler [Proposals for aesthetic development of school students in anatolian fine art high schools]. *Journal of European Education*, [S.l.], 2(2), 1-16.
- Okan Akın, N. (2006). *İlköğretim görsel sanatlar eğitiminde estetik öğretimi* [Aesthetic teaching in visual art education at primary school]. (Tez No. 211231). [Doctoral dissertation, Gazi University], National Thesis Center.
- Ocak Karabay, Ş., & Bilir Seyhan, G. (2018). "Sanatsal açıdan donanımlı" okul öncesi eğitim sınıfında bir pilot uygulama örneği [A pilot study in an "art equipped" preschool classroom]. *Ege Journal of Education*, 19(1), 19-33.
- Özdemir Balakoğlu, M., & Erol, M. (2021). Öğretmen adaylarının duyuşsal algı gelişimini estetik obje seçimleri üzerinden değerlendirme [Evaluating the sensory perception development of prospective teachers based on aesthetic object selections]. *International Art and Art Education Magazine*, 4(7), 328-344.
- Özgan, H., Yiğit, C., Aydın, Z., & Küllük, M. C. (2011). Analysis and comparison of primary school teachers' perceptions about classroom management. *Gaziantep University Journal of Social Sciences*, 10(1), 615-635.
- Özsoy, V. (2022). *Görsel sanatlar öğretim programları ve öğretmen yeterlikleri* [Visual arts curriculum and teacher competencies]. Pegem.

- Miralay, F., & Egitmen, Z. (2019). Aesthetic perceptions of art educators in higher education level at art classes and their effect on learners. *Cypriot Journal of Educational Science*, 14(2), 352-360
- Ministry of National Education [MoNE]. (2017). *Öğretmenlik mesleği genel yeterlikleri* [General competencies for teaching profession]. Öğretmen yetiştirme ve Geliştirme Genel Müdürlüğü. Access of date: 15.11.2022 https://oygm.meb.gov.tr/dosyalar/StPrg/Ogretmenlik_Meslegi_Genel_Yeterlikleri.pdf
- Ministry of National Education [MoNE]. (2018). *İlköğretim öğretim programı* [Primary education curriculum]. Türkiye Cumhuriyeti Millî Eğitim Bakanlığı. Access of date: 19.12.2023 <http://mufredat.meb.gov.tr/Programlar.aspx>
- San, İ. (2019). *Sanat ve eğitim. Yaratıcılık temel sanat kuramları sanat eleştirisi yaklaşımları* [Art and education. Creativity basic art theories art criticism approaches]. (5th ed.). Utopia.
- San, İ. (2010). *Sanat ve eğitim kuramları* [Theories of art and education]. (3rd ed.). Utopia.
- Sağlamçubukçu, F. (2019). *Sınıf öğretmenlerinin sınıf yönetim becerileri ile iş doyum düzeyleri arasındaki ilişki* [The relationship between classroom management skills and job satisfaction levels of classroom teachers']. (Tez No. 568681). [Master Thesis, Gazi University], National Thesis Centre.
- Sevim, O., Hisarcıklılar, E., & Feyzioğlu, N. (2012). Bir estetik duyuş analizi [An analysis of aesthetic feeling]. *Journal of Atatürk University Graduate School of Social Sciences*, 16(3), 41-57.
- Serhatlıoğlu B., & Kalo F. (2022). Sınıf öğretmenlerinin 21. yüzyıl öğrenen ve öğretene becerilerine ilişkin görüşleri [Classroom teachers' views on 21st century learner and teacher skills]. In (G. Gürsoy & M. Yiğit, Eds.), *Eğitim araştırmaları. Nicel, nitel ve karma yaklaşımlar*. Livre de Lyon. Access of date: 19.12.2022 https://bookchapter.org/kitaplar/Egitim_Arastirmalari_.pdf
- Sungurtekin, Ş., & Çakır İlhan, A. (2015). Müzik eğitimi yeterlikleri bağlamında sınıf öğretmeni "Sanat ve Estetik" yeterliklerinin öğretim elemanlarının görüşleri doğrultusunda değerlendirilmesi [Evaluation of classroom teacher "Art and Aesthetics" competencies in the context of music education competencies in line with the opinions of instructors]. *Journal of Uludağ University Faculty of Education*, 28(1), 53-73.
- Sözen M., & Tanyeli, U. (2022). *Sanat kavram ve terimleri sözlüğü* [Dictionary of art concepts and terms]. (22nd ed.). Remzi.
- Tezcan, M. (1998). Küreselleşmenin eğitimsel boyutu [Educational dimension of globalization]. *Education and Science*, 22(108), 53-55.
- Tuna, S. (2007). The teaching of art criticism in the primary school in relation to the development of aesthetics perception and taste. *Ankara University Journal of Faculty of Educational Sciences (JFES)*, 40(1), 121-133.
- Turani, A. (2022). *Sanat terimleri sözlüğü* [Dictionary of art terms]. (22nd ed.). Remzi
- United Nations Educational, Scientific and Cultural Organization [UNESCO]. (2005). *Living values education, united nations educational*. Scientific and Cultural Organization 2005.
- Yazıcı, E., Baydar, I., Y., & Pınarcık, Ö. (2016). Okul öncesi öğretmenlerinin sanata ilişkin görüşlerinin incelenmesi [Examination of preschool teachers' opinions on art]. *e-International Journal of Educational Research*, 7(3), 74-88.
- Yılmaz Arıkan, E. N., & Şirin N. (2020). İlköğretim okullarında görev yapan branş öğretmenlerinin sanat eğitime bakış açıları [Perspectives of subject teachers working in primary schools on art education]. *Ulakbilge - Journal of Social Sciences*, 45 2020), 123-132.
- Yılmaz, O., & Şahan, G. (2016). Öğretmen adaylarının sanat eğitimi ihtiyacına yönelik görüşlerinin belirlenmesi [Determining the opinions of teacher candidates regarding the need for art education]. *Abant İzzet Baysal University Faculty of Education Journal*, 16(2), 717-729.
- Yılmaz, K. (2011). İlköğretim okulu öğretmenlerinin sınıf yönetimi tarzları ile demokratik değerlere ilişkin görüşleri arasındaki ilişki [The relationship between primary school teachers' classroom management styles and their views on democratic values]. *Journal of Values Education*, 9(21), 147-170.
- Yolcu, E. (2022). *Sanat eğitimi kuramları ve yöntemleri* [Art education theories and methods]. (5th ed.). Pegem.
- Higher Education Institution. [YÖK]. (2023). *Yeni öğretmen yetiştirme lisans programları* [New teacher training undergraduate programs]. Access of date 23.12.2023 <https://www.yok.gov.tr/kurumsal/idari-birimler/egitim-ogretim-dairesi/yeni-ogretmen-yetistirme-lisans-programlari>

BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 100%



Genişletilmiş Türkçe Özet

<http://www.tayjournal.com>

<https://dergipark.org.tr/tr/pub/tayjournal>

Sınıf Öğretmenlerinin Sınıf İçi Uygulamalarında Sanat ve Estetik Alan Yeterlik Algılarının Farklı Değişkenler Açısından İncelenmesi

Giriş

Sanat ve estetik yönleri gelişmiş, sanat bilincine sahip, çevresine duyarlı bireylerin yetiştirilmesi bu konularda yetkin ve iyi yetişmiş öğretmenlerle mümkündür (Akdemir, 2012; Kırıçoğlu, 2019; Okan Akın, 2006; Tuna, 2007). Arnheim (2009) sanatın, kültürün bir parçası olduğu ve dolayısıyla her eğitilmiş insanın donanımı için gerekli olduğu bundan dolayı da kültürün tüm parçalarının toplum için gerekli olup olmadığını eğitimcilerin sorgulaması gerektiğini ifade etmektedir. Öğretmen yetiştiren kurumların programlarında öğretmen eğitimi ve yetiştirmeye yönelik sanat ve estetik eğitiminin de içinde olduğu programların gerekliliği ve önemi açık şekilde görülmektedir. Sanat ve estetik konulardaki birikim ve yeterlik bireylerin doğuştan kendiliğinden getirdikleri bir durum değildir. Sanat ve estetik eğitimi, bireye sanat ve estetik duyarlık kazandırma, kişide sanat zevki oluşturma ve sürdürme gibi süreçler ile bireyin sanatsal yetilerini üst düzeye ulaştırarak duygusal ve sosyal boyutta doyumlu ve güzel bir yaşamı oluşturmayı sağlar Birleşmiş Milletler Eğitim, Bilim ve Kültür Örgütü [UNESCO] (2005). Çocukların sanatsal ve estetik duyarlılıkları gelişmiş bireyler olarak yetiştirilmesi ve topluma kazandırılmasında sınıf öğretmenlerinin rolü önemli. Sınıflar günlük eğitim süreçleri açısından bakıldığında çocuklarda her türlü olumlu karakter özelliklerinin oluştuğu, pekiştirildiği, modellendiği ve uygulandığı bir mekân olarak görülmektedir. Bu durum sınıf öğretmenlerinin rolünü daha önemli hale getirmektedir (Can & Yıldırım, 2019; Çetiner Öner, 2019; Özdemir Balakoğlu & Erol, 2021; Sevim vd., 2012). Öğretmenlerin derslerinde estetik eğitimi, estetik kavram ve estetik okuryazarlığı geliştiren ve estetik bilince sahip bireyleri yetiştirecek ders etkinliklerini planlayarak uygulamaları önemlidir (Özdemir Balakoğlu & Erol, 2021; İstanbul Kültür ve Sanat Vakfı [İKSV], 2014). İlköğretim sürecindeki çocukların gelişim düzeyleri düşünüldüğünde bu durum ayrı bir önem kazanmaktadır. İlköğretim 1-4 sınıflarda uygulanan eğitim-öğretim programları incelendiğinde; çocukların sanat ve estetik

boyutlarıyla yetişmeleri yönünde sahip olmaları gereken özelliklerin hedeflendiği görülmektedir (Milli Eğitim Bakanlığı [MEB], 2018). Sanat ve estetik değerlerin çocuklara kazandırılması yönünde sınıf öğretmenlerinin sınıf içi uygulamaları veya etkinliklerinde sanat ve estetik boyutlara ne ölçüde yer verdikleri, bilinç, farkındalık durumları ile yeterlik düzeyleri ayrı önem taşımaktadır. İlkokulu tamamlayan öğrencilerin gelişim düzeylerine ve bireyselliğine uygun olarak toplumsal ve sosyal becerileri ile estetik duyarlılığı kazanarak yaşamlarında etkin bir şekilde kullanarak sağlıklı hayat yaşamaya yönelik bireyler olmalarını sağlamak öğretim programının amaçlarından biridir (MEB, 2018). Bu amaç kapsamında düşünüldüğünde, uygulama boyutunda öğretmenlik mesleğinin önemi ve öğretmenlerin yeterlik düzeyleri daha çok dikkati çekmektedir. Genç, (2007) ve Tezcan, (1998) ifade ettikleri gibi sadece bilgi iyi bir öğretmen olabilmek için yeterli koşul değildir, öğretmenliğin bir sanat yönünün olduğu da unutulmamalıdır. İlköğretim döneminin önemi düşünüldüğünde; günümüzde sanat ve estetik eğitimi kapsayan uygulama, bilgi ve farklı beceriler açısından yüksek standartta yetişmiş, nitelikli sınıf öğretmenlerinin önemi görülmektedir (Hatipoğlu Kara, 2022).

Alan yazın incelendiğine; yapılan araştırmaların, doğrudan sanat ve estetik boyutları ya da farklı öğretmen yeterlik alanları kapsamı içinde sanat ve estetik boyutlar ile ilişkili çalışmalar olduğu görülmektedir.(Açıkgöz ,2020; Akyıldız, 2020; Akyıldız, 2016; Albayrak, 2015; Aydın & Ünsal, 2022; Ceylan, 2008; Çiftçioğlu Şenkaya 2021; Hacıömeroğlu & Şahin, 2011; Dolapçioğlu vd., 2019; Francis, 2020; Kuşdemir Kayıran ve Özyurt, 2020; Liang, W. , & Yu Y., 2021; Özdemir Balakoğlu ve Erol, 2021: Miralay & Eğitimci, 2019; Sungurtekin & Çakır İlhan, 2015; Yılmaz Arıkan & Şirin, 2020; Serhatlıoğlu & Kalo, 2022; Yazıcı vd., 2016; Yılmaz & Şahan, 2016). Bu araştırmanın sınıf öğretmenlerinin sanatsal ve estetik algılarına yönelik bilgi, uygulama ve estetik bakış ile yaş, meslekteki yıl, yaşanan coğrafya gibi değişkenler yönünden incelenmesi önemli görülmektedir. Sınıf öğretmenlerinin sınıf içi uygulamalarda sanat ve estetik boyutlarına (bilgi sahibi olma, uygulama, estetik bakış açısı) yönelik yeterlik algılarının farklı değişkenler ile (ilçe merkezi veya köy, yaş ve meslekteki yıl) incelenmesi çalışmanın amacını oluşturmaktadır. Bu kapsamda; Sınıf öğretmenlerinin, sanat ve estetik konusunda *bilgi sahibi olma boyutuna yönelik* yeterlik algıları ne düzeydedir? Sınıf öğretmenlerinin, sanat ve estetik konusunda *uygulama boyutuna yönelik* yeterlik algıları ne düzeydedir? Sınıf öğretmenlerinin, sınıf içi uygulamalarında *estetik bakış açılarına* yönelik algıları ne düzeydedir? Sınıf öğretmenlerinin sanat ve estetik alanında yeterlik algıları genel olarak ne düzeydedir? Sınıf öğretmenlerinin, sanat ve estetik alan yeterliklerine yönelik algıları; cinsiyete, görev yaptıkları yere (ilçe merkezi veya köy), yaşa ve meslekteki yıla göre farklılık göstermekte midir? Bu sorulara cevap aranmıştır.

Yöntem

Bu çalışmada nicel araştırma yaklaşımı içerisinde betimsel tarama modelinden yararlanılmıştır. Hatay'ın Reyhanlı ilçesinde 50 (17 merkez ve 33 köy) devlet ilkokulunda görev yapan toplam 222 sınıf öğretmenine çalışma grubu olarak, Akyıldız (2016) tarafından geliştirilen "*Sanat ve Estetik Alan Yeterlik Ölçeği*" 2022-2023 eğitim-öğretim yılı güz döneminde uygulanmıştır. Ölçeğin Cronbach Alpha güvenirlik kat sayısı 0.88, Spearman-Brown korelasyon katsayısı 0.79 ve Guttman split-half değeri ise 0.789'dir. Ölçek "*Bilgi Sahip Olma*", "*Uygulama Yapma*" ve "*Estetik Bakış*" olarak üç boyuttan oluşmaktadır (Akyıldız, 2016). Bu çalışmada ölçeğin güvenirliğinin belirlenmesine yönelik yapılan çalışmada, ölçeğin Cronbach alfa iç tutarlık katsayıları bilgi sahibi olma boyutu için, 0,706, uygulama boyutu için, 0.626, estetik bakış boyutu için, 0.852 ve ölçeğin tümü için, 0.875 olarak hesaplanmıştır.

Verilerin analizi sürecinde ilk olarak veri seti incelenmiş ve boş veriler tespit edilmiştir. Boş verilerin rastgele bir şekilde dağılıp dağılmadığının belirlenmesi amacıyla yapılan Little MCAR testi sonuçlarının anlamsız ($X^2=15,239$; $df=30$; $p=,988$) ve herhangi bir maddede boş bırakan katılımcı sayısının %2'den az olması nedeniyle maksimum olabilirlik (expectation maximization) yöntemi kullanılarak boş verilere atama yapılmıştır (Graham, 2009). Veri seti analize hazır hale getirildikten sonra basıklık ve çarpıklık katsayıları incelenmiştir. Bilgi (çarpıklık=-,435; basıklık= ,167), uygulama (çarpıklık=-,055; basıklık= -,160), estetik bakış (çarpıklık=-,394; basıklık= ,164) boyutlarında ve ölçeğin toplamında (çarpıklık=-,202; basıklık= -,018) basıklık ve çarpıklık katsayıları ± 2 aralığında olduğu için verilerin analizinde parametrik teknikler kullanılmıştır (George & Mallery, 2016). Buna göre, sınıf öğretmenlerinin sanat ve estetiğe ilişkin genel yeterlik düzeylerinin sunumunda yüzde ve frekans değerleri hesaplanmıştır. Cinsiyete ve yaşanan yere göre karşılaştırmalarda parametrik tekniklerden bağımsız gruplar için t testi, yaşa ve kıdeme göre yapılan karşılaştırmalarda ise tek yönlü varyans analizi [ANOVA] kullanılmıştır. Verilerin analizinde SPSS 25.0 paket programı kullanılmış olup, bulgular tablolar şeklinde sunulmuştur.

Bulgular

Sınıf Öğretmenlerinin Sanat ve Estetik Alan Yeterliklerine İlişkin Algıları: Öğretmenlerin ölçekten aldıkları puanlar yeterlik algı düzeylerine göre sınıflandırılarak frekans ve yüzde dağılımları hesaplanmıştır. *Bilgi sahibi olma boyutunda*, sınıf öğretmenlerinin küçük bir kısmı kendilerini çok yetersiz olarak algıerken (%0,9), biraz daha yüksek bir oran ise bilgilerini yetersiz olarak algıladığı (%5,4) görülmektedir. Öğretmenlerin çoğunluğu bilgilerini kısmen yeterli (%33,8) olarak algıerken, önemli bir kısmı kendilerini yeterli (%32,0) ve (%27,9) çok yeterli olarak algılamaktadır. *Uygulama boyutunda*, küçük bir orandaki (%1,4) sınıf öğretmeni uygulama yeterliklerinin çok yetersiz düzeyde olduğunu algıerken, (%16,2)'si yetersiz düzeyde olduğunu algılamaktadır. Öğretmenlerin yarısına yakını yeterliliklerini kısmen yeterli (%40,1) olarak algıerken, benzer bir yüzde (%32,9) kendini yeterli olarak algılamaktadır. Daha küçük bir grup, uygulama açısından çok yeterli düzeyde (%9,5) ifade etmiştir. *Estetik bakış boyutunda*, kendini çok yetersiz (%1,8) veya yetersiz (%5,4) olarak algılayan öğretmenlerin oranlarının oldukça düşük olduğu görülmektedir. Önemli bir orandaki öğretmen bakış açısını kısmen yeterli (%21,2) olarak algıerken, önemli bir orandaki öğretmen (%46,4) kendini yeterli algılamaktadır. Öğretmenlerin yaklaşık olarak dörtte biri kendinin estetik açıdan çok yeterli düzeyde (%25,2) olduğunu algılamaktadır. *Toplam puanlar* incelendiğinde, "*çok yetersiz*" kategorisinde herhangi bir öğretmenin olmadığı görülmektedir. İlkokul öğretmenlerinin çoğunluğu kendilerini kısmen yeterli (%34,7) veya yeterli (%45,5) olarak algılamaktadır. Daha düşük bir orandaki (%13,1) öğretmen, çok yeterli düzeyde olduklarını ifade etmiştir. Sonuçlar genel olarak değerlendirildiğinde, boyutlara göre küçük farklılıklar olmakla birlikte, sınıf öğretmenlerinin çoğunluğunun kendisini kısmen yeterli veya yeterli olarak algıladıkları söylenebilir.

Sınıf öğretmenlerinin cinsiyete göre sanat ve estetik alan yeterlik algıları: Öğretmenlerin ölçeğin boyutlarından ve toplamından elde ettikleri puanların cinsiyetlerine göre karşılaştırılması için bağımsız gruplar için t testi yapılmıştır. Sınıf öğretmenlerinin bilgi boyutundan ($t_{(219)} = 0.305$, $p = 0.761$), uygulama boyutundan ($t_{(219)} = -0,416$, $p = 0,678$), estetik bakış boyutundan ($t_{(219)} = 0,261$, $p =$) ve ölçeğin toplamından ($t_{(219)} = 0.057$, $p = 0.955$) elde ettikleri puanların cinsiyetlerine göre istatistiksel açıdan anlamlı bir biçimde farklılaşmadığı görülmektedir. Buna göre kadın ve erkek öğretmenlerinin benzer düzeylerde sanat ve estetik yeterlik algılarına sahip olduğu söylenebilir. *Sınıf öğretmenlerinin*

yaşadıkları yere göre sanat ve estetik alan yeterlik algıları: Öğretmenlerin ölçeğin boyutlarından ve toplamından elde ettikleri puanların yaşadıkları yere göre karşılaştırılması amacıyla bağımsız gruplar için t testi yapılmıştır. Sınıf öğretmenlerinin bilgi boyutundan ($t_{(220)} = 1.313$, $p = 0.191$), uygulama boyutundan ($t_{(220)} = 0.546$, $p = 0.585$), estetik bakış boyutundan ($t_{(220)} = -0.136$, $p = 0.892$) ve ölçeğin toplamından ($t_{(220)} = 0.578$, $p = 0.564$) elde ettikleri puanların yaşadıkları yere göre istatistiksel açıdan anlamlı bir biçimde farklılaşmadığı görülmektedir. Buna göre ilçe merkezinde veya köyde yaşayan sınıf öğretmenlerinin benzer düzeylerde sanat ve estetik yeterlik algısına sahip oldukları söylenebilir. *Sınıf öğretmenlerinin yaşlarına göre sanat ve estetik alan yeterlik algıları:* Öğretmenlerinin ölçeğin boyutlarından ve toplamından elde ettikleri puanların yaşlara göre karşılaştırılması amacıyla ANOVA yapılmıştır. Sınıf öğretmenlerinin bilgi boyutundan ($F_{(2, 218)} = .965$, $p = 0.383$), estetik bakış boyutundan ($F_{(2, 218)} = 0.556$, $p = 0.574$) ve ölçeğin toplamından ($F_{(2, 218)} = 1.808$, $p = 0.166$) elde ettikleri puanların yaşlara göre istatistiksel açıdan anlamlı bir biçimde farklılaşmadığı görülmektedir. Bununla birlikte uygulama boyutundan ($F_{(2, 218)} = 3.786$, $p = 0.024$) elde ettikleri puanların yaşa göre istatistiksel açıdan anlamlı bir biçimde farklılaştığı görülmüştür. Farkların kaynağını belirlemek üzere yapılan Tukey testi sonucunda, 23-29 yaş aralığındaki sınıf öğretmenlerinin 40 yaş ve üzeri sınıf öğretmenlerine göre derslerinde daha çok sanat ve estetik uygulamalarına yer verdiği bulunmuştur. *Sınıf öğretmenlerinin mesleki kıdemlerine göre sanat ve estetik alan yeterlik algıları:* Öğretmenlerin ölçeğin boyutlarından ve toplamından elde ettikleri puanların mesleki kıdemlerine göre karşılaştırılması amacıyla ANOVA yapılmıştır. Sınıf öğretmenlerinin bilgi boyutundan ($F_{(4, 210)} = .567$, $p = 0.687$), uygulama boyutundan ($F_{(4, 210)} = 1.257$, $p = 0.288$), estetik bakış boyutundan ($F_{(4, 210)} = 0.814$, $p = 0.518$) ve ölçeğin toplamından ($F_{(4, 210)} = 0.489$, $p = 0.744$) elde ettikleri puanların mesleki kıdemlerine göre istatistiksel açıdan anlamlı bir biçimde farklılaşmadığı görülmektedir. Buna göre farklı kıdemlere sahip sınıf öğretmenlerinin benzer sanat ve estetik yeterlilik algısına sahip oldukları söylenebilir.

Tartışma ve Sonuç

Sınıf öğretmenlerinin sanat ve estetik alan yeterlik algıları: bilgi sahibi olma boyutunda, kendilerini, çok yeterliden yetersize doğru bakıldığında daha çok kısmen yeterli, yeterli ve çok yeterli algıladıkları az da olsa çok yetersiz ve yetersiz düzeyde algıladıkları sonucuna ulaşılmıştır. *Uygulama boyutunda,* çok yeterliden çok yetersize doğru bakıldığında, daha çok kısmen yeterli, yeterli ve çok yeterli algıladıkları, yetersiz algılayanların çok yeterli algılayanlara göre düzeyinin biraz yüksek olduğu çok düşük düzeyde de olsa çok yetersiz algıladıkları sonucuna ulaşılmıştır. *Estetik bakış boyutunda,* çok yeterliden yetersize doğru bakıldığında, sınıf öğretmenlerinin yarıya yakınının yeterli, dörtte bir oranı ile kısmen yeterli bu orandan daha yüksek olarak çok yeterli algıladıkları çok düşük bir oran da olsa yetersiz ve çok yetersiz düzeyde algıladıkları sonucuna ulaşılmıştır. *Toplam puanlar incelendiğinde,* "çok yetersiz" kategorisinde herhangi bir öğretmenin olmadığı öğretmenlerin çoğunluğu kendilerini kısmen yeterli veya yeterli olarak algıladığı değerlendirilmiştir. Daha düşük bir orandaki öğretmen, çok yeterli düzeyde algıladıklarını ifade etmiştir. Sonuçlar genel olarak değerlendirildiğinde, boyutlara göre küçük farklılıklar olmakla birlikte, sınıf öğretmenlerinin çoğunluğunun kendisini kısmen yeterli veya yeterli olarak algıladığı sonucu söylenebilir.

Cinsiyete göre, bilgi boyutunda, uygulama boyutunda, estetik bakış boyutunda ve ölçeğin toplamında sonuçlara ulaşılmıştır. Bu sonuçlardan istatistiksel açıdan cinsiyete göre anlamlı bir farklılığın olmadığı sonucu tespit edilmiştir. Bu sonuçlara göre kadın ve erkek öğretmenlerin benzer düzeylerde sanat ve estetik yeterlik algısına sahip olduğu söylenebilir. *Yaşadıkları yere göre,* bilgi

boyutunda, uygulama boyutunda, estetik bakış boyutunda ve ölçeğin toplamında sonuçlarına ulaşılmıştır. Ulaşılan sonuçlarda istatistiksel olarak anlamlı bir farklılığın olmadığı görülmüştür. Bu kapsamda ilçe merkezinde veya köyde yaşayan öğretmenlerin benzer düzeylerde sanat ve estetik yeterlik algısına sahip olduğu söylenebilir. *Yaşa göre*, bilgi boyutunda, estetik bakış boyutunda, uygulama boyutunda ve ölçeğin toplamında sonuçlarına ulaşılmıştır. Elde edilen sonuçlarda bilgi boyutu, estetik bakış boyutu ve ölçeğin toplamında istatistiksel açıdan anlamlı bir farklılık olmadığı görülürken uygulama boyutunda, yaşa göre istatistiksel açıdan anlamlı bir biçimde farklılaştığı görülmüştür. Farkların kaynağını belirlemek üzere yapılan Tukey testi sonucunda, 23-29 yaş aralığındaki sınıf öğretmenlerinin 40 yaş ve üzeri sınıf öğretmenlerine göre derslerinde daha çok sanat ve estetik uygulamalarına yer verdiği şeklinde algıya sahip oldukları sonucuna ulaşılmıştır. *Mesleki kıdemlerine göre*, bilgi boyutunda, uygulama boyutunda, estetik bakış boyutundan ve ölçeğin toplamında sonuçlara ulaşılmıştır. Elde edilen sonuçlarda sınıf öğretmenlerinin mesleki kıdemlerine göre istatistiksel açıdan anlamlı bir biçimde farklılaşmadığı sonucuna ulaşılmıştır. Bu sonuca göre farklı kıdemlere sahip sınıf öğretmenlerinin benzer sanat ve estetik yeterlilik algılarına sahip oldukları söylenebilir. Sonuçlar genel olarak değerlendirildiğinde, boyutlara göre küçük farklılıklar olmakla birlikte, sınıf öğretmenlerinin çoğunluğunun kendisini kısmen yeterli veya yeterli olarak algıladığı sonucu söylenebilir.

Sonuçlar genel olarak değerlendirildiğinde, uygulama boyutunda yaşa göre yapılan değerlendirmede istatistiksel olarak anlamlı farklılığın olduğu ancak diğer boyutların puanları arasında anlamlı bir istatistiksel farklılığın olmadığı tespit edilmiştir. Uygulama boyutundaki farklılığın 23-29 yaş aralığındaki sınıf öğretmenlerinin sonuçlarında 40 yaş ve üzeri öğretmenlere göre anlamlı farklılık gösterdiği sonucuna ulaşılmıştır. Bu sonuç yaş aralıklarına bağlı anlamlı farklılığın değişik sebeplerden olabileceğini düşündürebilir. Sınıf ortamında yapılan sanatsal-estetik alanlarında içinde olduğu her türlü aktivite ve etkinlikler yaşa bağlı performanslarla ilişkilendirilebilir düşüncesini akla getirmektedir. Sağlamçubukçu (2019) çalışmasında sınıf yönetimi becerilerinden, öğrencilerle etkili iletişim sağlamada, öğretimin amacına uygun öğrenme ortamı oluşturmada, motivasyonu artırıcı etkinlikler düzenlemede, öğrencinin derse dikkatini çekerek aktif katılımını sağlamada ve uygun yöntem ve teknikleri kullanarak etkinlikleri yönetmede 31-40 yaş arasındaki sınıf öğretmenlerinin daha etkin oldukları sonucuna ulaşmıştır. Güneş (2016) çalışmasında ise yaş değişkeni ile sınıf yönetimi becerileri alt boyutlarından planlama, davranış ve zaman yönetimi, motivasyon ve öğrenme ortamı arasındaki anlamlı farklılığın 41-50 yaş grupları lehine olduğu tespit edilmiştir. İlgar (2007), Özgan vd., (2011), Yılmaz (2011) ve Sağlamçubukçu, (2019) araştırmalarında, yaş değişkeni ile sınıf yönetimi becerileri arasında anlamlı bir fark tespit etmişlerdir.

Hacıömeroğlu ve Şahin'in (2011) öğretmen adaylarının uygulama okullarında görev yapan sınıf öğretmenlerinin sekiz özel alan yeterliğine ilişkin algılarını değerlendirdikleri çalışmada "sanat ve estetik ve beden eğitimi ve güvenlik" "yeterli" iken diğer algılara ilişkin "tamamen yeterli" olduğu sonucuna ulaşılmıştır. Bu sonuçlara bakıldığında bu araştırmanın sonucunu destekler şekildedir. Bu çalışmanın sonuçlarında da sınıf öğretmenlerinin kendilerini sanat ve estetik boyutlarda yeterli algıladıkları görülmüştür. Aydın ve Ünsal (2022) tarafından yapılan çalışmada ise öğretmen adayları ve veliler tarafından sınıf öğretmenlerinin tercih edilme nedenleri farklı değişkenler açısından incelenmiştir. Araştırmada kişisel, akademik, mesleki ve sosyal yeterlik ve beceri alanlarında farklı tercih edilme sonuçlarına ulaşılmıştır. Sonuçlar incelendiğinde sınıf öğretmenlerinin sanatsal ve estetik boyutun tercih sebeplerinden biri olarak görülmediği dikkat çekici ve düşündürücüdür. Bu araştırmada

sınıf öğretmenlerinin sanat ve estetik yeterlik düzeylerinde kendilerini yeterli algıladıkları ve değişkenler arasında uygulama boyutu yaş faktörü dışında bir farkın olmadığı sonucu sınıf öğretmenlerinin sınıf içi etkinliklerde sanat ve estetik boyutlarında bilgi, estetik bakış ve uygulama boyutlarında kendilerini yeterli algıladıkları şeklinde yorumlanabilir. Diğer taraftan Akdemir (2012) tarafından sınıf öğretmenlerinin Sosyal Bilgiler Öğretim Programında yer alan en önem verdikleri değerleri, değerlere ilişkin algıları, görüşleri ve sınıfta uyguladıkları etkinlikleri belirlemek için yaptığı çalışmada en önem verdikleri değer “adil olma” en az önem verdikleri değer de “estetik” değeri olduğu sonucuna ulaşılmıştır. Bu sonca bakıldığında estetik değere en az önem verilmesinin farklı sebepleri olduğu düşüncesini oluşturabilir. Yüksek Öğretim Kurumu’nun [YÖK] (2023) programında son sınıfta sınıf öğretmeni adaylarına haftada üç saat teorik bir ders olarak Görsel Sanatların Öğretimi Dersi okutulmaktadır. İlköğretim 1-4 arası sınıflar için sınıf içi uygulama çalışmaları düşünüldüğünde, öğretmen adayları için gelecekte meslek yaşamlarında uygulama boyutu için bu dersin yeterli olup olmayacağı düşündürücü ve önemli bir durumdur. Sungurtekin ve Çakır İlhan’ın (2015) da ifade ettikleri gibi sınıf öğretmeni yetiştirme programında sanat ve estetik uygulamalara yönelik farklı sorunların öğretmen adaylarına gerekli yeterlikleri kazandırmayı güçleştirdiği görülebilir. İlköğretim döneminin önemi düşünüldüğünde sanat eğitimi alanında bilgi, beceri ve tutum gibi özellikler açısından nitelikli sınıf öğretmenlerinin yetiştirilmesi büyük önem taşımaktadır (İlhan, 2003). Ulusal yeterlikler çerçevesinde sanat eğitimi alanında yeterliklerin hazırlanması ve bu yeterlikleri kazanan sınıf öğretmenlerinin yetiştirilmesi için yükseköğretim düzeyinde uygulamaların hayata geçirilmesi, öğretmenlik mesleği açısından önemlidir. Nitelikli öğretmen yetiştirme sürecinde, kuramsal ve uygulamalı çalışmalar aracılığıyla yeterliklerin öğretmen adaylarına kazandırılması gerekmektedir (Karaca, 2003; Sungurtekin, Ş. & Çakır İlhan, A. 2015). Böyle bir eğitim-öğretim süreci birçok yönden sürece olumlu yansıyacaktır. Bu kapsamlarda bakıldığında sınıf öğretmenlerinin sanat ve estetik yönlerden geniş boyutta ve yeterli düzeyde yetişmelerine yönelik yapılan çalışmaların önemi görülmektedir. Çocukların erken yaşlarda sanatla kuracakları iletişim yaşam boyu devam edebilecek sanata duyulacak ilginin oluşturulmasına katkı sağlarken estetik beğeni düzeyleri yüksek bireyleri topluma kazandıracaktır. Bu şekilde sanat ve estetik değerler bireyden topluma doğru genişleyerek devam edecektir.

Öneriler

Bu araştırma, bir ilçenin kısıtlı sayıda sınıf öğretmeni ile birlikte yapılmıştır. Bu yönüyle bakıldığında daha geniş kapsamda farklı coğrafyalarda ve daha fazla sayıda sınıf öğretmenine ulaşılarak yapılabilir. Böyle bir araştırma daha geniş sonuçlara götürmek suretiyle sınıf öğretmenlerinin sanat ve estetik boyutlarına yönelik algılarının tespitine yönelik daha geniş çerçevede durum tespitine ulaştırabilir. Çocukların yetişmesinde ilköğretim döneminin önemi düşünüldüğünde; sanat ve estetik boyutlarında yeterlik algılarına yönelik bilgi, beceri ve tutum gibi özellikler açısından yeterli ve nitelikli sınıf öğretmenleri yetiştirmek yönünden farklı araştırmaların yapılması önemli görülmektedir. Bu araştırma ilköğretimde görev yapan sınıf öğretmenleri ile yapılmıştır, orta öğretimde farklı branşlarda görev yapan branş öğretmenlerinin sanat ve estetik algılarının tespitine yönelik araştırmalar yapılabilir.