İÇİNDEKİLER / CONTENTS

ISSN : 2146-3638
E-ISSN : 2619-9068

Uluslararası Eğitim Programları ve Öğretim Çalışmaları Dergisi / International Journal of Curriculum and Instructional Studies Cilt/Volume: 15 Sayı/Issue: 2

2009 EPÖDER EĞİTİM PROGRAMLARI VE ÖĞRETİM DERNEĞİ
TURKISH CURRICULUM AND INSTRUCTION ASSOCIATION

ULUSLARARASI EĞİTİM PROGRAMLARI VE ÖĞRETİM ÇALIŞMALARI DERGİSİ

International Journal of Curriculum and Instructional Studies

CİLT/VOLUME: 15 SAYI/ISSUE: 2 ARALIK/DECEMBER 2025 ISSN: 2146-3638 E-ISSN: 2619-9068

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CİLT / VOLUME: 15 - SAYI / ISSUE: 2 ARALIK / DECEMBER 2025

INTERNATIONAL JOURNAL OF CURRICULUM AND INSTRUCTIONAL STUDIES (IJOCIS)
[ULUSLARARASI EĞİTİM PROGRAMLARI VE ÖĞRETİM ÇALIŞMALARI DERGİSİ]

Cover Design

Pegem Academy

Kapak Tasarımı

Pegem Akademi

Publication/Basım

Ay-bay Kırtasiye İnşaat Gıda Pazarlama ve

Ticaret Limited Şirketi

Çetin Emeç Bulvarı 1314. Cadde No:37A-B

Ankara/Türkiye

Indexing

This journal is indexed by ERIC, ULAKBIM TR Dizin, ERIHPLUS, EBSCO Central & Eastern European Academic Source, Akademia Sosyal Bilimleri Index (ASOS), Idealonline and Scientific Indexing Services (SIS).

Taranılan Veritabanları

Bu dergi ERIC, ULAKBIM TR Dizin, ERIHPLUS, EBSCO Central & Eastern European Academic Source, Akademia Sosyal Bilimleri Index (ASOS), Idealonline ve Scientific Indexing Services (SIS) tarafından dizinlenmektedir.

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ijocisjournal@gmail.com

ISSN: 2146-3638; E-ISSN: 2619-9068

INTERNATIONAL JOURNAL OF CURRICULUM AND INSTRUCTIONAL STUDIES (IJOCIS)

[ULUSLARARASI EĞİTİM PROGRAMLARI VE ÖĞRETİM ÇALIŞMALARI DERGİSİ]

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CONTENTS / İÇİNDEKİLER	Pages

From the Editor-in-Chief

International Journal of Curriculum and Instructional Studies (IJOCIS) transitions between editorial teams occasionally. Prof. Dr. Aslıhan Selcen Bingöl served as the Editor in Chief until the early Autumn of this year, and then I took over this role. I thank Prof. Dr. Aslıhan Selcen Bingöl for her dedicated work in leading the Editorial Team in publishing the latest issues of the Journal.

I met with the Editorial Team online several times and face to face during the International IJOCIS Congress in Magusa in October this year. Our priority was to assemble an Editorial Team that represents diversity of research interests and methodologies that collectively promote the scientific contribution of the journal further. The Editorial Team now consists of 8 editors. The International Editorial Board representing different countries and regions is growing. We also broadened our team of peer reviewers who support us in our goal to publish high quality research in IJOCIS.

An initial task of the Editorial Team in these meetings was to refine the IJOCIS' aims and scope, clarify manuscript consideration criteria and submission guidelines further, and standardize the manuscript review processes. We simplified the submission process for the authors to spend less time with formal requirements and focus more on the quality of the content in their submissions. I am happy to announce that we have shortened the manuscript assessment and publication process considerably thanks to standardization of our review processes and clarification of the review and publication processes further. All researchers who are interested in publishing in IJOCIS should know that all the submissions will receive a timely and quality assessment. With this, once again, I invite all researchers in the field of Curriculum and Instruction to submit their articles to IJOCIS.

This 2nd issue in 2025 published articles that focused on studies on a wide range of topics and in diverse contexts and contributed to development of scientific knowledge in the field. I would like to congratulate all the authors who contributed to this issue, and thank the reviewers who spent their valuable time to assess and improve submissions, the editorial team for their devoted time and effort to lead the manuscript review processes, and the language and production team for their final touches on the manuscripts and the production of this issue of our journal. We will continue to work with researchers and the journal team to publish further high-quality scientific research in the field of Curriculum and Instruction.

With my best regards.

Prof. Dr. Ali YILDIRIM (University of Gothenburg)

Editor-in-Chief

Baş Editörden

Uluslararası Eğitim Programları ve Öğretim Çalışmaları Dergisinin (IJOCIS) Editör Ekibinde zaman zaman değişiklikler yaşanmaktadır. Prof. Dr. Aslıhan Selcen Bingöl, bu yılın sonbahar döneminin başına kadar Baş Editör olarak görev yaptı. Sonraki dönemde bu görevi ben devraldım. Prof. Dr. Aslıhan Selcen Bingöl'e, Derginin son sayılarının yayınlanmasında Editör Ekibine liderlik ettiği için teşekkür ederim.

Editör Ekibi ile geçtiğimiz aylarda birkaç kez çevrimiçi ve bu yılın Ekim ayında Magosa'da düzenlenen Uluslararası Eğitim Programları ve Öğretim Çalışmaları Kongresinde yüz yüze toplantılar yaptık. Önceliğimiz, derginin bilimsel alanyazına katkısını üst seviyelere çıkaran ve çeşitli araştırma alanları ve yöntemlerini temsil eden bir Editör Ekibi oluşturmaktı. Ekip şu anda 8 Editörden oluşmaktadır. Farklı ülkeleri temsil eden Uluslararası Editörler Kurulundaki üye sayımız da arttı. Ayrıca, IJOCIS'te nitelikli araştırmalar yayınlama hedefimiz doğrultusunda bizi destek olan hakem listemizi de genişlettik.

Bu toplantılarda Editör Ekibi'nin ilk hedefi, Derginin amaçlarını ve kapsamını gözden geçirmek, makale değerlendirme ölçütlerini ve makale gönderme yönergelerini daha açık ve makale inceleme süreçlerini standart hale getirmek oldu. Başvuru sürecini basitleştirdik; böylece yazarlar biçimsel konulara daha az ve makale içeriğinine daha fazla zaman ayırma fırsatı buldular. İnceleme ve yayın süreçlerimizin standartlaştırılması ve daha açık hale getirilmesi ile makale değerlendirme ve yayın sürecini önemli ölçüde kısalttığımızı memnuniyetle belirtmek istiyorum. Dergimize makale göndermeyi hedefleyen araştırmacılar, tüm başvurularının zamanında ve nitelikli bir değerlendirmeye tabi tutulacağınından emin olabilirler. Bu nedenle bir kez daha, Eğitim Programları ve Öğretim alanındaki tüm araştırmacıları, yazdıkları makaleleri değerlendirilmek üzere IJOCIS'e göndermeye davet ediyorum.

2025 yılının bu ikinci sayısı, geniş bir konu yelpazesinde ve çeşitli bağlamlarda araştırmalara odaklanan makalelere yer vermekte ve alanda bilimsel bilginin gelişimine önemli katkılar sunmaktadır. Bu sayıya makaleleri yayınlanan tüm yazarları tebrik ediyor ve dergiye gelen makale başvurularını değerlendirmek ve geliştirmek için değerli zamanlarını harcayan hakemlere, makale inceleme sürecinde harcadıkları zaman ve çaba için Editör ekibine ve makalelerin yayınlanması sürecinde kısa zamanda nitelikli bir iş çıkaran Dil ve Dizgi ekibine teşekkür etmek istiyorum. Eğitim Programları ve Öğretim alanında daha fazla yüksek nitelikli bilimsel araştırma yayınlamak için araştırmaçılar ve dergi ekibiyle birlikte çalışmaya devam edeceğiz.

Saygılarımla,

Prof. Dr. Ali YILDIRIM (Göteborg Üniversitesi)

Baş Editör

International Journal of Curriculum and Instructional Studies

15(*2*), 2025, 77-103

www.ijocis.com

Remedial Curriculum in Primary Schools: A Case Study on Teacher Perceptions and Experiences

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Keywords

Remedial curriculum
Primary education
CIPP model
Primary school teacher

Article Details:

Research Article

Received : 20-09-2025
Accepted : 01-12-2025
Published : 31-12-2025

DOI:10.31704/ijocis.1786959

Abstract

This study aims to conduct a comprehensive analysis of the Remedial Curriculum in Primary Schools (RCPS) in state primary schools with varying socio-economic characteristics, based on teachers' perceptions and experiences. In order to systematically examine the multidimensional structure and implementation dynamics of the RCPS, the CIPP (Context, Input, Process, Product) curriculum evaluation model developed by Stufflebeam was adopted as the conceptual framework for this study. This framework guided the fundamental questions of the research and enabled an in-depth examination of the different dimensions of the curriculum based on teachers' views. The research was conducted using the case study method, one of the qualitative research designs. Data were collected using a semi-structured interview form prepared by the researchers and examined through content analysis. It was determined that the RCPS contributed to the development of students' Turkish and mathematics skills, increased their self-confidence, enhanced their participation in classes, and led to an improvement in their overall academic achievement levels. However, it was also determined that materials are insufficient, parental support is lacking, and the program's schedule causes students to experience fatigue and absenteeism issues. In light of these findings, recommendations such as making the program's schedule more flexible, increasing parent awareness efforts, enriching the material content, integrating game-based activities into the curriculum, developing standardized measurement tools, and strengthening guidance support for teachers will further increase the effectiveness of the RCPS.

To cite this article: Aydın, S., & Özyurt, M. (2025). Remedial curriculum in primary schools: A case study on teacher perceptions and experiences. *International Journal of Curriculum and Instructional Studies, 15*(2), 77-103. https://doi.org/10.31704/1786959

Introduction

The evaluation of education systems is increasingly being approached from a comparative perspective. Today, countries have gradually started to compare the developments in their education systems using qualitative data rather than quantitative data. For example, the schooling rate between developed and less developed countries in the world has almost disappeared (The World Bank, 2018). Although school enrollment rates are considered an indicator of success for educational administrators, today's educational approach necessitates focusing on the skills and competencies that children acquire at school (United Nations, 2018). In many countries, individuals may attend school for years but graduate without basic skills. According to the World Bank (2024) Report, only 31% of children in middle-income and lower-middle-income countries can understand the text they read. In addition, among 15-year-olds, proficiency rates in math, reading, and science stand at about 50% in middle-income countries, 30% in lower-middle-income countries, and 80% in upper-middle-income countries. Globally, only 58% of students achieved minimum reading proficiency between 2015 and 2019, and recent evaluations indicate a notable drop in math and reading performance across many countries (United Nations, 2024). Interventions in such situations are usually implemented through the implementation of supportive curricula to improve the academic achievement of students who lag behind their peers in basic skills and experience various disadvantages. In terms of scope, projects, curricula or educational policies that aim to provide competence in basic literacy and numeracy, and pave the way for the development of advanced skills and behaviors are implemented (Demeuse et al., 2012). Supportive practices in education generally include elements such as increasing access to school for students, providing necessary learning materials, and improving the quality of the process with competent and experienced teachers. In addition, prominent practices include providing students with additional tutoring and supplementary education opportunities. In many countries, initiatives to prevent academic failure are supported by central governments and there are legal regulations on such supportive practices in many countries around the world (Schlicht et al., 2010).

In Türkiye, the main efforts carried out by the Ministry of National Education (MoNE) to ensure equality of opportunity in education are shaped around the main themes of increasing access to resources, eliminating learning deficits, reducing achievement and opportunity differences among schools, and increasing schooling rates, and there is a quantitative improvement in these issues (Gençoğlu, 2019). International assessments reveal that there are differences between students in terms of academic achievement in Türkiye (Taş et al., 2016). Although Türkiye has significantly reduced the percentage of students lacking basic skills since 2003, these rates still remain above the OECD average (MoNE, 2019). For this purpose, intervention systems such as remedial, supportive, and compensatory programs are recommended to reduce low academic achievement across regions and among students (Gür et al., 2018). Based on this situation, in order to overcome learning deficiencies in literacy and basic mathematics skills in early grades in Türkiye, the Remedial Curriculum in Primary Schools (RCPS) was developed.

Remedial Curriculum in Primary Schools (RCPS) and CIPP Model

RCPS is a support program designed for students who do not have special education needs or diagnoses, who are in the third grade of primary school and who have not been able to

acquire the learning objectives in the Turkish and mathematics curricula for various reasons in the past years. This curriculum is implemented for students who have difficulty in reaching the learning objectives set within the framework of the RCPS (MoNE, 2024).

The curriculum is structured into modules that progress from simple to complex and is implemented based on the principle of progressive learning. It consists of a total of six modules, three modules each for Turkish and mathematics courses. Within the scope of this curriculum, students are offered 10 hours of additional support education per week, up to a maximum of 160 hours. The inclusion of students in the program, as well as the determination of their starting module, is guided by the Student Identification Tool (SIT), which comprises open-ended and short-response questions in the disciplines of Turkish and mathematics.

Based on the results of the SIT, once it is determined from which module students will begin, whether in Turkish, mathematics, or both, groups of no more than ten students are formed by the RCPS school committee, and the instructional process is initiated accordingly. After the completing the modules, students are assessed with measurement tools developed by teachers to determine whether they have achieved the intended learning outcomes of the curriculum (MoNE, 2022).

Within the scope of the curriculum, a variety of resources have been developed for students, teachers, and school administrators. These resources include documents such as the Turkish Activity Book, Turkish Guidebook, Mathematics Activity Book, e-School RCPS Module User Guide, Implementation Guide and Psychosocial Support Guide. All materials developed have been made publicly accessible through the official website of the MoNE at https://iyep.meb.gov.tr/ .

The continuous improvement of the quality of RCPS and the preservation of its dynamic structure depend on the systematic monitoring and transparent sharing of data on students' progress. This necessitates the regular conduct of scientifically based monitoring and evaluation processes. For this reason, there is a need for a systematic evaluation process to determine whether RCPS has achieved its goals (TEDMEM, 2023). In this context, curriculum evaluation studies are necessary for updating the implemented curricula. Curriculum evaluation is the process of determining the effectiveness of a curriculum and providing feedback for necessary modifications (Demirel, 2017). This process involves a series of systematic steps; however, it does not follow a single, uniform procedure. There are many different curriculum evaluation approaches in the literature. Each evaluation approach and model offers different contributions to the field of curriculum evaluation with its own characteristics and usage patterns (McNamara et al., 1999). This study is based on the CIPP model developed by Stufflebeam for curriculum evaluation, which consists of four basic dimensions (Context, Input, Process, Product). The context dimension of the CIPP model involves analyzing the current situation in order to understand the extent to which the curriculum meets the needs (Stufflebeam et al., 2000) and defining the characteristics of the environment in which the curriculum operates (Ornstein & Hunkins, 2018). At the input dimension, the adequacy and appropriateness of the strategies planned to achieve the learning objectives, as well as the allocated resources (such as materials and stakeholders), are critically examined (Yüksel & Sağlam, 2014). Process dimension, which focuses on the implementation phase of the curriculum, aims to determine how the activities are carried out in practice, the compatibility between the planned and the actual, and the problems or obstacles encountered during

implementation (Demirel, 2017). Finally, in the product dimension, the general and specific results that emerge upon completion of the curriculum are evaluated both in terms of whether the planned goals were achieved and unexpected effects (Ornstein & Hunkins, 2018).

As with all curricula, it can be stated that RCPS, which is developed based on disadvantaged students, should be continuously evaluated and improved. Several studies in the literature (Aydın & Yakar, 2020; Balantekin, 2020; Dilekçi, 2019; Erkan et al., 2024; Gençoğlu, 2019; Kırnık et al., 2019; Kozikoğlu & Tosun, 2020; Özdoğru, 2022; Toptaş & Karaca, 2019) have focused on evaluating the effectiveness of the RCPS based on the perspectives of students, teachers, and parents. However, the lack of utilization of curriculum evaluation models in assessing the RCPS in these studies leads to both theoretical and systematic deficiencies. Therefore, examining RCPS within the framework of comprehensive and systematic evaluation approaches has emerged as an important requirement for both educators and researchers. To address this gap, this study has adopted the CIPP model, which uses a systems approach, as a robust conceptual framework. This framework has been used to facilitate a more comprehensive and systematic investigation centered on the research questions. By structuring the research around four dimensions. Context, Input, Process, and Product, this study aims to facilitate a holistic analysis of RCPS and thereby overcome the systematic limitations observed in previous research.

Aim and Significance of the Study

The aim of this study is to conduct a comprehensive and detailed analysis of RCPS in line with teachers' perceptions and experiences, in accordance with Stufflebeam's CIPP Model. Unlike existing RCPS studies, this research examines the curriculum not solely with an outcome (product) focus but rather with a systematic (Context, Input, Process, Product) approach, thanks to the CIPP model. Most importantly, by identifying the practical experiences and challenges faced by teachers, who play a key role in the success of the curriculum, the research findings are expected to provide guidance for educators working in primary schools. Furthermore, this study has the potential to present the strengths and weaknesses of the RCPS along with their underlying causes, thereby offering concrete and data-driven recommendations to policymakers within the MoNE for its revision and improvement. In line with the general purpose and importance of the research, the following questions were answered:

1. What are the primary school teachers' views on the aims, strengths, and weaknesses of RCPS, and its relevance to student needs? (Context assessment)

2. What are the primary school teachers' views regarding student readiness levels, lesson durations, the adequacy of the school's physical facilities, and the recommended assessment and evaluation methods within RCPS? (Input assessment)

3. What are the primary school teachers' views regarding the methods and techniques used in the teaching-learning process, the problems encountered and solutions found during the program's implementation, and the guidance, coordination, and supervision provided throughout the process of RCPS? (Process assessment)

4. What are the primary school teachers' views on the SIT evaluation, the attainment levels of basic skills (reading, comprehension, writing and four basic operations) in Turkish and

Mathematics, and the difference in students' overall achievement through RCPS? (Product assessment)

Method

This section presents information regarding research design, study group, data collection instrument, data collection process, and data analysis.

Research Design

This study, which examines primary school teachers' perceptions and experiences regarding the RCPS within the framework of the CIPP model, has been designed using a qualitative approach. Qualitative research can be defined as a research in which data collection techniques such as interviews, observations and document analysis are used, and which involves the examination of experiences, actions and texts (Patton, 2018). This type of research can also be described as research that is sensitive to the natural environment, where the researcher has a participatory role, perceptions are revealed, the research design can be flexible, and qualitative data are presented with an inductive and holistic approach (Yıldırım & Şimşek, 2018). The research design was determined as a case study. Case study is a research design used to clarify this interaction in cases where events cannot be considered separately from their context and the relationship between them can sometimes be unclear (Gay et al., 2009). Woodside (2010) explains case studies by dividing them into three categories. These are theory building and testing, storytelling or picture drawing, and evaluation-oriented case studies. In the study, Stufflebeam's CIPP model has been used as a comprehensive and systematic analytical framework. The model has been used to reveal teachers' perceptions and experiences regarding the functioning and outputs of the RCPS in a structured manner.

Study Group

The study group for this study consisted of 16 primary school teachers who worked in public primary schools in the Onikişubat and Dulkadiroğlu districts of Kahramanmaraş province during the 2024-2025 academic year and were assigned to the RCPS. Participants were selected using the maximum variation sampling technique, a purposive sampling method.

In this study, maximum diversity was ensured by including teachers with various seniorities and those working in schools providing education to socio-economically diverse students. In accordance with research ethics, in order to protect the confidentiality of the participants, codes such as P1, P2, ... P16 were used instead of their names. Demographic information of the participants is presented in Table 1.

Table 1

Demographic Information of the Teachers in the Study

Participants	*Gender*	*Professional seniority*	*Education level*	*Title*	*Place of duty*
P1	Female	21 years	Bachelor's degree	Senior teacher	Onikişubat
P2	Female	20 years	Bachelor's degree	Senior teacher	Onikişubat
P3	Male	40 years	Bachelor's degree	Senior teacher	Onikişubat
P4	Female	6 years	Bachelor's degree	Teacher	Onikişubat

Table 1(*Continued*)

P5	Male	28 years	Bachelor's degree	Senior teacher	Onikişubat
P6	Male	31 years	Bachelor's degree	Senior teacher	Onikişubat
P7	Female	25 years	Bachelor's degree	Senior teacher	Onikişubat
P8	Male	39 years	Bachelor's degree	Senior teacher	Onikişubat
P9	Male	7 years	Bachelor's degree	Teacher	Onikişubat
P10	Male	28 years	Bachelor's degree	Senior teacher	Onikişubat
P11	Female	31 years	Bachelor's degree	Senior teacher	Dulkadiroğlu
P12	Female	14 years	Bachelor's degree	Expert teacher	Dulkadiroğlu
P13	Male	24 years	Bachelor's degree	Senior teacher	Dulkadiroğlu
P14	Male	18 years	Bachelor's degree	Expert teacher	Dulkadiroğlu
P15	Male	16 years	Bachelor's degree	Expert teacher	Dulkadiroğlu
P16	Male	24 years	Master's degree	Senior teacher	Dulkadiroğlu

As presented in Table 1 ten of the teachers participated in the study were male and six were female. Six of the participants had 21-30 years of seniority, four had 31-40 years of seniority, four had 11-20 years of seniority, and two had 5-10 years of seniority. Fifteen of the participants have a bachelor's degree, one has a master's degree. According to the experiences of the teachers, the titles of eleven participants were senior teachers, three were expert teachers, and two were teachers. Finally, ten of the participants work in Onikişubat district and six of them work in Dulkadiroğlu district.

Data Collection Tool

In this study, data were collected through the "Semi-structured Interview Form" developed by the researchers. As a first step in the preparation of the form, a question pool was created by reviewing the relevant literature and a draft form was created by structuring these questions according to the four dimensions of the CIPP model. The draft form was submitted to the review of two experienced primary school teachers, a language expert and two academicians from the field of curriculum and instruction. The form, which was revised in line with the feedback from the experts, has been structured with a total of 12 questions, three questions for each dimension. In order to test the suitability of the form for use, pilot interviews were conducted with two primary school teachers who had previously implemented the RCPS; in these interviews, the adequacy, clarity and comprehensibility of the questions in the form in evaluating the RCPS were tested. As a result of the positive feedback received from the pilot study, the interview form was finalized to be used in the research.

Data Collection Process

The data collection process of the study was completed within a two-week period in May 2024-2025 academic year after obtaining the necessary official permissions from Kahramanmaraş Provincial Directorate of National Education. In this process, the researchers visited the schools where the primary school teachers included in the study group were

working, presented the necessary permission documents to the school administrators and requested an appointment for the interview. Interviews were conducted with the teachers whose schedules were available, at the locations they specified and usually on the day of the appointment. At the beginning of each interview, the purpose of the study was explained to the participants and they were asked to fill out the "Informed Consent Form". The participant was informed that his/her answers and identity would be kept confidential and that codes such as P1, P2...P16 would be used to analyze the data. During the interview, the researchers recorded the teachers' responses simultaneously. At the end of the interview, which lasted an average of 40 minutes, the recorded responses were read to the teacher for confirmation, and finally, the participant was thanked for his/her valuable contribution to the research.

Data Analysis

The data obtained in this study were analyzed through content analysis. Content analysis, which aims to reveal the meaning of textual data, is an interpretation method that includes the steps of systematically classifying, coding and identifying recurring themes or patterns (Hsieh & Shannon, 2005). The Maxqda-11 was used to analyze the data. Maxqda-11 is data analysis software that enables researchers to analyze and visually present different types of qualitative data (Marjaei et al., 2019). In this study, the data were analyzed using the inductive method and a conceptual framework was created on the basis of the codes that emerged. In the analysis process, first, two researchers independently analyzed the entire data set from beginning to end. Then, the data texts were divided into meaningful parts and codes were derived. The codes were analyzed to reveal themes, and these codes and themes were presented and interpreted in an organized manner. Due to the nature of content analysis, the inductive analysis method (Patton, 2018), which focuses on findings that are derived from the data, was applied. Throughout the process, studies were conducted on the validity and reliability of the research.

In this study, meticulous efforts were made to ensure validity and reliability. As emphasized by Merriam (2018), care was taken to conduct the research in accordance with ethical principles, and all necessary permissions were obtained from the relevant institutions before starting the study. In addition, within the framework of Lincoln and Guba's (1985) criteria for qualitative research, studies were conducted on credibility, transferability, consistency and conformability. In order to strengthen credibility, detailed information about all stages of the research and participants was presented, and the findings were presented to the expert opinion, and confirmation was obtained from the participants. As stated by Creswell (2017), presenting detailed information in research increases the reader's confidence in the findings. To ensure transferability, participant statements (direct quotations) that strongly reflect the main idea of each theme were included, a method recommended by Creswell (2017). The findings have been presented using visual representations, with particular attention paid to employing clear and accessible language for the readers. The consistency between research data and research results is explained by the concept of consistency in qualitative research (Merriam, 2018; Yıldırım & Şimşek, 2018). In addition, Creswell (2017) considers it necessary for more than one researcher to code independently and to analyze the extent of agreement between the codes obtained in order to increase the reliability of the findings in qualitative research. To ensure the reliability of the coding process, the researchers first coded the data independently. Then, Miles and Huberman's (1994) agreement formula was used to determine the level of agreement between the coders. As a result of this calculation, a high agreement rate of 0.90

was obtained. The fact that the obtained result exceeds the reliability threshold of 0.70 indicates that the coding is reliable. As Silverman (2005) also noted, based on the importance of reaching a common decision in cases where there are coding differences, codes on which researchers disagreed were discussed and consensus was reached to determine their final form. In this study, in order to ensure verifiability, the data obtained and the procedures carried out were digitally archived as recommended by Creswell (2017) and organized in a manner that is open to audit when necessary.

Findings

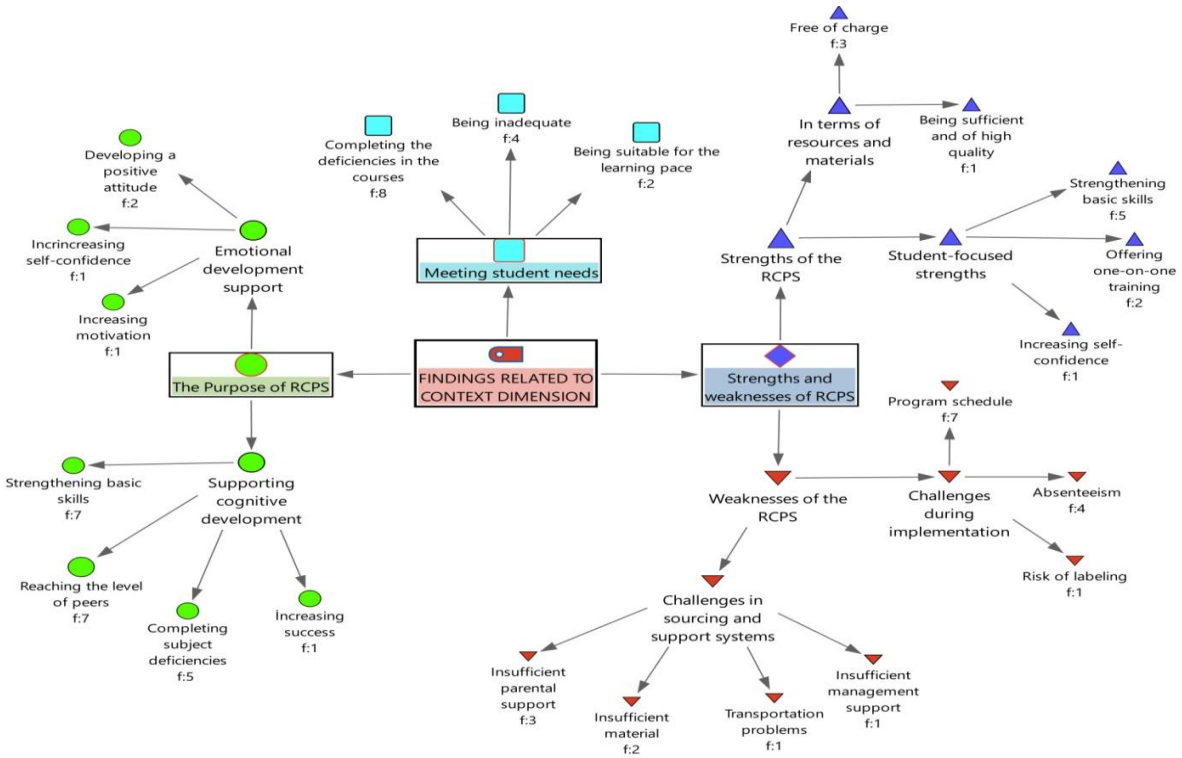
The findings obtained through the examination of RCPS based on teacher views within the framework of the context, input, process, and product dimensions of the CIPP model are presented under four main headings. While presenting the findings, the themes and codes developed within the framework of content analysis were supported by quotations from participant responses, as suggested by Yıldırım and Şimşek (2018).

Context Dimension

Participants' perceptions of RCPS within the context dimension of the CIPP Model were analyzed based on their responses to three questions. In this context, the questions asked to the participants were: "What is the most important purpose of RCPS according to you?", "To what extent do you think the content of RCPS meets the needs of students?" and "What are the strengths and weaknesses of RCPS?" The data obtained were categorized under three themes: The purpose of RCPS, meeting student needs and the strengths and weaknesses of RCPS. The findings are presented in Figure 1.

Figure 1

Findings Related to Context Dimension



When Figure 1 is analyzed, two sub-themes emerge under the theme of the purpose of RCPS: supporting cognitive development and supporting affective development. In the sub-theme of supporting cognitive development, the participants most frequently expressed the purpose of RCPS as strengthening basic skills (Turkish and mathematics), bringing them to the same level as their peers, and completing their subject deficiencies. For example, while P1 expressed strengthening basic skills (Turkish and mathematics) as "*Identifying students who cannot learn the learning objectives determined in Turkish and mathematics courses, who cannot reach the adequate level within the specified period of time, and preparing the determined students in Turkish and mathematics courses*"; P3 stated as "*Raising students who are below the grade level (Turkish and mathematics) in terms of knowledge and learning objectives.*" Another code expressed by participants in this sub-theme is that the RCPS ensures students reach the same level as their peers. P11 stated, "*To educate students who are not at grade level by reinforcing them. To enable them to reach the grade level*", while P8 stated his views as "*To bring the students who are behind in Turkish and mathematics courses to the level of their peers*". In the sub-theme of supporting affective development created in this theme, the codes for developing a positive attitude towards school, increasing the self-confidence and motivation of the student were obtained. Participants expressed their views on the codes of developing positive attitudes, increasing self-confidence and motivation with the statements such as P6 "*To make their perspectives on school positive by enabling them to comprehend the basic subjects in the RCPS course*", P9 "*...To prevent possible adaptation problems that may arise in the current group or in the next educational levels due to academic failure, to raise individuals who are open to communication, learning and self-confident*", P11 "*...to show that not everyone in society is at the same level of learning and that their deficiencies can be completed.*"

In the theme of RCPS's meeting the needs of students, the most frequently repeated code is that RCPS eliminates the deficiencies in basic courses (Turkish and mathematics). Participant opinions regarding this code are as follows: P14 *"It enables the acquisition of essential knowledge required in Turkish and mathematics courses,"* and P16 "*The literacy and mathematical skills prepared for RCPS students encompass the learning objectives and knowledge that we aim to instill in students starting from the beginning of first grade. Students acquire these fundamental skills and knowledge in accordance with their individual capacities.* In addition, some participants believe that RCPS is incomplete and inadequate in meeting the needs of students. For example, P15 stated that "*RCPS does not meet the needs of students very clearly,*" and P8 stated that "*I do not think that the content of RCPS meets the needs of students sufficiently.*"

When the codes related to the theme of RCPS's strengths and weaknesses are analyzed, it is seen that providing free textbooks stands out as one of the strengths of RCPS. Related to this, P12 made a statement as "*Providing free textbooks for RCPS*". In addition, providing one-to-one education is another strength of RCPS. P14 expressed his opinion on this code as "*It proves to be beneficial for motivated students, as it allows for more opportunities for one-on-one interaction.*" The schedule of the program and insufficient parental support are seen as the weaknesses of RCPS by the participants. Regarding the schedule of the program, P6 said, "*The child goes to school five days a week and to the RCPS course at the end of the week. As such, the child starts to get very bored. Over time, child gets bored.*" P12 said, "*Scheduling the program beyond regular school hours causes students to be less consistent in attendance*" and P16 said, "*The program starts towards the end of October. It can start earlier.*" Regarding insufficient

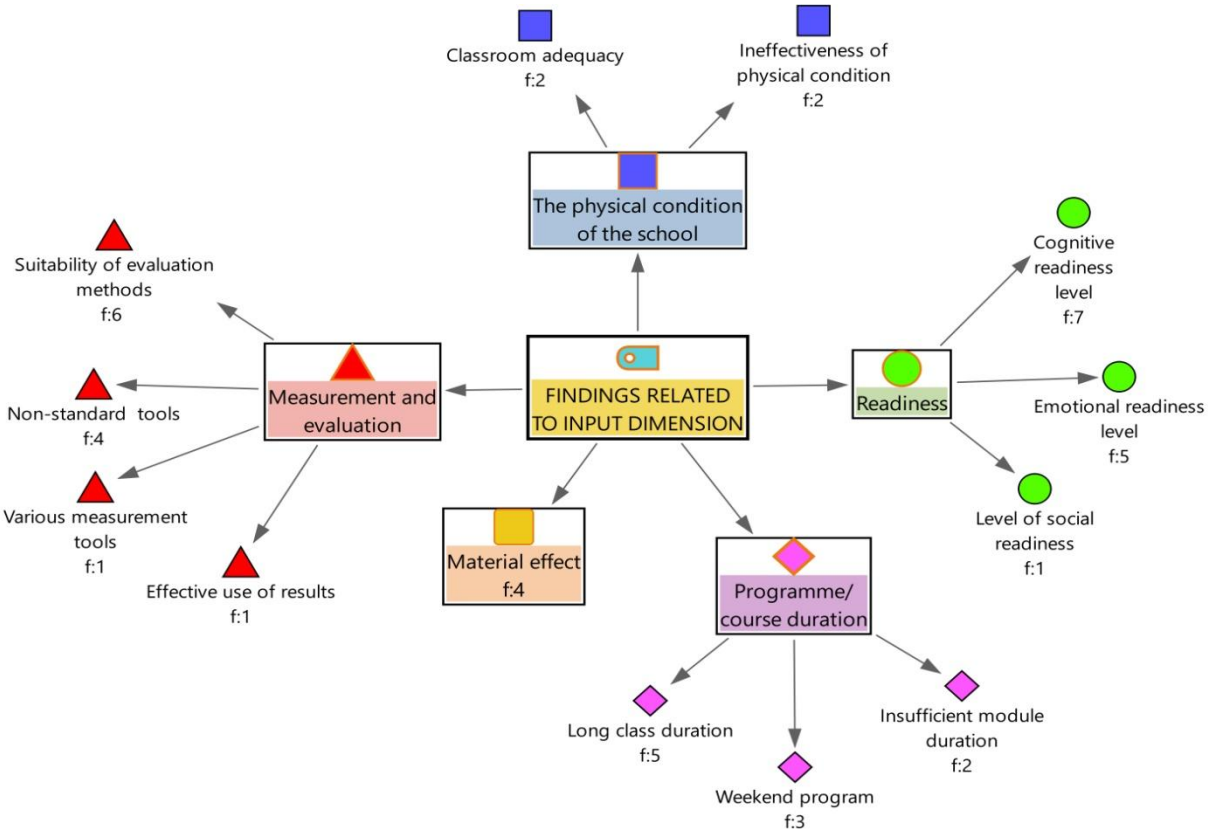
parental support, P10 stated "*Failure is more prominent because there is no parental support.*" and P5 stated "*Parental indifference*".

Input Dimension

Within the framework of the input dimension of the CIPP Model, the participants' views on the curriculum were examined according to their answers to three questions and five different themes were formed as a result of this examination. In this context, the participants were asked the following questions: "What do you think about the students' readiness levels for the curriculum?", "How do the lesson durations, materials and the physical condition of the school affect the functioning of the curriculum?" and "Are the measurement and evaluation methods proposed in RCPS effective and useful?" The findings obtained from the analysis of the answers to these questions were grouped under the themes of "Readiness", "Physical condition of the school", "Program/course duration", "Material effect" and "Assessment and evaluation". The findings are presented in Figure 2.

Figure 2

Findings Related to Input Dimension



When Figure 2 is examined, it is seen that the theme of readiness consists of cognitive, affective and social readiness codes. Cognitive readiness is the most frequently repeated code. While P12 expressed his view on this code as "*Since they are 3rd grade students, their level of readiness is quite appropriate*", P9 said, "*From a cognitive perspective, students have cognitive gap that hinders the consolidation of newly introduced knowledge, resulting in a lack of long-term retention...*" and revealed the inadequacy of students' cognitive readiness levels. In terms of affective readiness, P6 expressed the view that the students were ready with the statement

"...they know that they are participating in this course because they are academically behind their peers. But this situation does not create a psychological weakness in children. Children actively participate in the lessons." P11, who was of the view that the students were not affective ready for the implementation of the program, stated that "*...but they were anxious at first. They thought they were lazy.*"

Regarding the adequacy of the physical condition of the classrooms in the theme of the physical condition of the school, P2 stated that "*...the fact that the classroom was quiet, bright and spacious had a positive effect on the lessons*", while P16 stated that, "*The physical condition of the classroom does not have any effect*" suggesting that the classrooms did not significantly affect the curriculum implementation process.

In the "material effect" theme regarding the impact of materials on the functioning of the curriculum, the participants stated that the quality of the materials was low. While P2 stated *"Incomplete and uniform materials cause them not to pay enough attention*", similarly, P11 stated "*The materials were very simple and suitable for the first module.*"

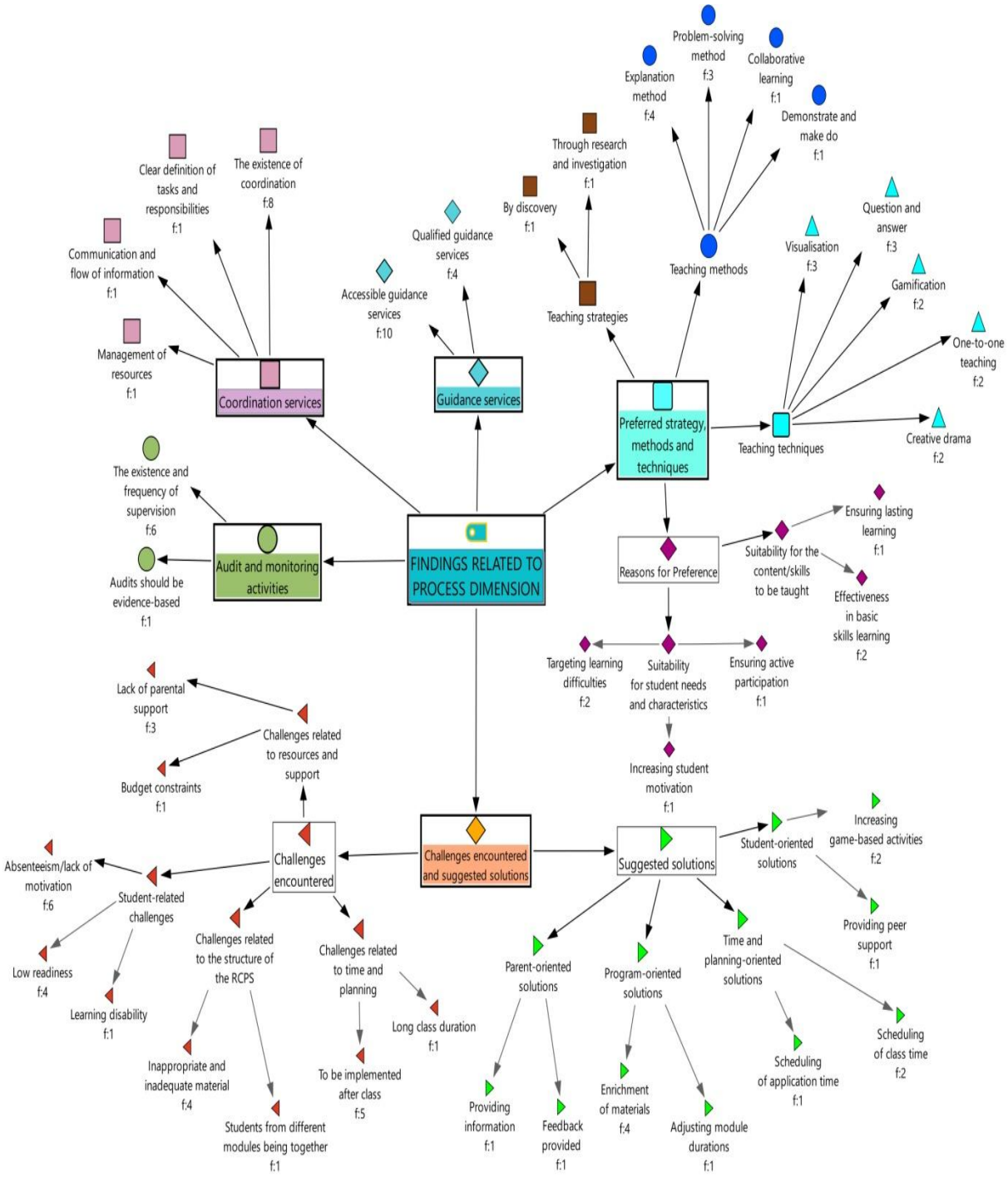
In the measurement and evaluation theme created from the last question asked to the participants in the context dimension, P6 regarding the appropriateness of the curriculum's measurement and evaluation methods said, "*The measurement and evaluation methods proposed in RCPS are very effective. It identifies new acquisitions of students. The improvements seen in students are observed.*" In this theme, P16 expressed her view about the lack of a standard in the measurement methods of the RCPS with the following statement: "*We create our own measurement and evaluation criteria in the module completion process. It would be good if the measurement tools to be used in the process and at the end of the process were standardized and ready...*"

Process Dimension

In the process dimension, the participants' responses to three questions were analyzed and five main themes were identified as a result of this analysis. In this dimension, the participants were asked; "Which methods and techniques did you use while implementing RCPS? What are your reasons for preferring these methods and techniques?", "What difficulties did you encounter while implementing RCPS? What are your suggestions for overcoming these difficulties?" and "What are your views about the guidance, coordination and supervision duties of the school during the implementation of RCPS?" The themes of "Preferred strategies, methods, and techniques", "Challenges and solutions", "Guidance services", "Coordination services" and "Audit and monitoring activities" were obtained from the views of the participants and these themes are shown in Figure 3.

Figure 3

Findings Related to Process Dimension



When Figure 3 is analyzed, it is seen that the participants frequently preferred invention and inquiry strategies in RCPS learning-teaching processes. P15, who expressed her views about both strategies, said, "*Learning through invention and research-study. The student can find the subject under the guidance of the teacher and can learn better through research and examination and it becomes permanent...*" In the themes of teaching methods and techniques, the participants expressed their views with short answers such as "*lecture, problem solving,*

cooperative learning, demonstration, visualization, question-answer, gamification and one-to-one teaching."

Participant views regarding the code 'targeting learning difficulties,' situated within the sub-theme of reasons for preference, based on the question about why these strategies and techniques were selected, are presented by P4 as "*I paid attention to visualization. Because the learning levels of the students participating in the RCPS were effective in choosing these methods.*" while P2 said "*My students had problems such as 'not being able to read fluently', 'not being able to understand what they read' and so on. Thinking that making it more fun with game-based learning motivated them, I organized the 'reading-comprehension' activities accordingly. I used the question-answer method to get quick feedback.*" While teaching the lessons, P11 stated that *"... I used these methods to help children motivate themselves, to show them that they are self-confident, valuable, and not lazy."* and P9 stated that "*...because I thought that these methods would make students an effective, interactive student model in the lesson.*"

In the process dimension, sub-themes related to the challenges encountered by the participants while implementing the RCPS; related to resources and support, time and planning, student-related, and challenges related to the structure of the RCPS were created. While P2 of the participants expressed the difficulties they experienced related to the lack of parental support as "*Since families do not participate and support this process, the implementation is insufficient.*", P5 made an explanation as "*Families are not interested...*" and P16 expressed their views as "*...Family support is already absent.*" Students' absenteeism was expressed as the most common difficulty encountered by the participants in this theme. The opinions that can be referenced to this code are P1 "*The course had positive effects for the students who came continuously without absenteeism. The biggest problem experienced during the implementation process was that the students disrupted the course.*" While P7 said, "*Students are absent a lot. I had problems with attendance.*" Among the participants who saw the materials as inadequate and inappropriate, P16 said, "*I think that the students did not benefit from the RCPS at an adequate level due to the lack of teaching materials.*" While P11 said, "*...the resource sent was only suitable for the first module. There should be separate resources for each module.*" P2 explained the difficulties caused by the implementation of the RCPS outside of class hours as "*Since it is implemented outside of class hours, it can cause fatigue and distraction in the teacher and students.*" and P6 supported this code with the statement "*We did a five-hour course on Saturday and Sunday...seven days a week is boring for children.*"

Participants offered parent-oriented, program-oriented, time and planning-oriented and student-oriented solutions to the difficulties they encountered during the process. In the code of informing parents about the RCPS, P7 said, "*Parent information activities are insufficient. Interviews should be held with parents only for RCPS.*" Regarding the code of enriching the materials, P15 said, "*There is a great shortage of materials in RCPS. The books are not current. Additional resources that will not bore students and make the lesson more fun can be used.*" P15 suggested a solution for enriching the materials. For the code of reviewing the lesson duration among the solution suggestions for time and planning, P4 said, "*It would have been enough to make the lesson duration 35 minutes. Since the students also came at the weekend, the long lesson time was a bit difficult.*" P3's opinion "*Games and activities that motivate students should be applied in RCPS studies, and activities that will make them happy should be done.*" draws attention to the code that game-based activities should be increased.

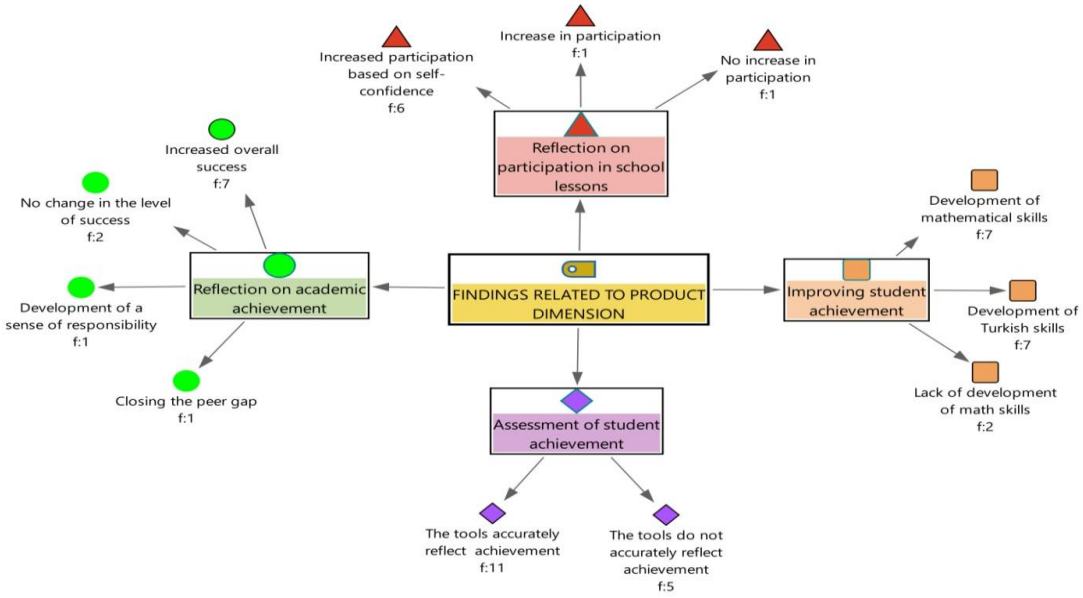
Within the themes that emerged from the final question posed to participants regarding the process dimension, participant P14 stated, "*The guidance service should maintain continuous communication with families to support students in study techniques and establish a home study routine.*" Similarly, P9 expressed, "*Throughout the RCPS, the guidance and coordination units worked in harmony with us, providing support both cognitively and emotionally.*" These statements reflect participants' views on the theme guidance services. Within the theme of coordination services, the participants stated that the school administration "*provided the necessary coordination.*" P15 differs from the other participants with her opinion that "*I don't think there is very good coordination. Some more work can be done on this issue.*" In the theme of supervision and monitoring activities, P1 expressed his satisfaction with the existence and frequency of supervision services by stating that "*... the required services of supervision tasks were implemented in place and on time.*" Within the scope of this code, other participants used similar expressions. However, P5 stated "*We are in dialog with other teachers in the school. There is less supervision.*" He presented a different perspective on the issue.

Product Dimension

In the final dimension, the product dimension, four themes were developed by analyzing participants' responses to three questions. At the product dimension, the participants were asked the following questions: "What are your thoughts about the level of students' achievement of basic skills in Turkish and mathematics courses at the end of the RCPS?", "What are your thoughts about whether the SIT applied in RCPS accurately reflects student achievement?", "Did you observe any difference in the participation of students attending RCPS in their own classes or in their general achievement after the program? Can you explain?" questions were asked. The themes of "Improving student achievement", "Evaluation of student achievement", "Reflection on participation in school lessons" and "Reflection on academic achievement" were generated from the views of the participants and are shown in Figure 4.

Figure 4

Findings Related to Product Dimension



When Figure 4 is examined, the participants reported that at the end of the program, improvement was observed in students' Turkish and mathematics skills. In this respect, P15's opinion "*At the end of the program, an increase was observed in the students who attended this program in 'reading, writing, comprehension' in the Turkish lesson and 'four operations etc.' in the mathematics lesson.*" and P6's similar opinion "*At the end of the program, significant improvements were recorded in the fields of reading, comprehension, expression and writing in the Turkish lesson. In the mathematics course, they made important gains in four-operation skills.*" The opinions support the code obtained. However, within the scope of this theme, P11 said, "*The level of four–operation skills in Mathematics could not be raised to the desired level, especially for the 1st module...*" stated that the mathematics skills of the students did not reach the desired level by the end of the program.

Among the participants who thought that the SIT developed during the RCPS process accurately reflected the students' achievements, P11 said, "*The questions seemed too simple to some students. The evaluation could be done differently. I don't think it's an accurate reflection.*" While P8 expressed a different opinion about SIT, saying, "*I don't think it reflects accurately. I don't think SIT is a realistic assessment of children.*"

At the end of the program, in parallel with the increase in students' self-confidence, the increase in their participation in the lessons was stated by P7 as "*Their participation in the lessons increased. I saw that their self-confidence increased and they became more courageous.*" P3 stated that "*Students participating in RCPS are happier because they develop self-confidence in participating in activities in their own classes and reach the level of their friends in terms of achievement.*" P6 "*...there are significant improvements in their general achievement. I think that the RCPS course is very useful.*" and P15 "*I observed an increase in the general success in reading, writing and four-operation skills in mathematics.*" They emphasized that RCPS increased the general success levels of students. Two of the participants stated that they did not observe a significant increase in students' achievement levels at the end of the RCPS process. P9's statement that "*I did not observe their participation in the lessons or their general success*" supports the code reached.

Discussion

Curricula guide the educational process by structuring the learning outcomes that students are expected to achieve in cognitive, affective and psychomotor domains under the guidance of teachers. The systematic analysis of existing curricula is a critical process for assessing whether these curricula achieve their intended goals, their effectiveness and applicability, and for identifying deficiencies in content and implementation (MoNE, 2020). In line with this perspective, this study systematically addresses RCPS within the framework of Stufflebeam's CIPP Model to reveal primary school teachers' perceptions and experiences regarding RCPS. In the context dimension, the participants believe that RCPS contributes to the development of students in cognitive and affective domains. In addition to this, they consider it among the most important goals of RCPS to support students' learning in Turkish and mathematics lessons and to bring them to the same level as their peers. Considering that 600 million children globally lack minimum proficiency in reading and math skills (United Nations Children's Fund [UNICEF], 2024), the main starting point of RCPS is to monitor these students in Türkiye and provide the necessary support. In this respect, it may be inferred that the participants are well

acquainted with the underlying philosophy of the RCPS regarding its contributions to students. In this dimension, participants consider the provision of free textbooks and the opportunity for one-on-one instruction as among the strengths of the RCPS. MoNE has implemented the 'Free Textbook Distribution Project' since 2003, providing primary school students with free access to textbooks (Bayrakçı, 2005). Within this framework, the free provision of RCPS materials has been viewed favorably by teachers as means of fostering educational equity. Additionally, textbooks developed in accordance with the RCPS curriculum have served as a primary instructional resource for teachers (İşeri, 2007). Another finding of the study reveals that participants consider one-on-one instruction with RCPS students to be one of the program's major strengths, as it contributes to the development of students' skills in Turkish and mathematics. This aligns with Carey and Grant's (2015) findings, which emphasize the benefits of individualized teaching in fostering stronger student–teacher relationships and tailoring lessons to individual needs. On the other hand, issues such as scheduling, absenteeism, limited parental involvement, and insufficient content in instructional materials were perceived as weaknesses. Notably, participants expressed divergent views regarding the suitability of the program's implementation schedule. The RCPS program was conducted in some schools after regular weekday classes and in others on weekends. During weekday sessions, teachers noted that students struggled with attention and motivation due to end-of-day fatigue. Conversely, weekend implementations led to signs of weariness and increased absenteeism as the program progressed. These findings align with previous research on RCPS, which similarly reported participant concerns regarding the schedule of the program (Aydın & Yakar, 2020; Özdoğru, 2022). Absenteeism, closely linked to the schedule of the program, is consistently cited in the literature as one of the most pressing challenges (Bozbayındır & Kara, 2017; Canpolat & Köçer, 2017; Dilekçi, 2019; Göksu & Gülcü, 2016; Kırnık et al., 2019; Ünsal & Korkmaz, 2016). Excessive absenteeism among RCPS program participants not only hinders individual learning progress but also undermines the overall effectiveness of the program. This issue stands out as a major obstacle to achieving the curriculum's intended outcomes. Supporting this, Altınkurt (2008) found a negative relationship between unexcused absenteeism and academic achievement, underscoring the importance of identifying the root causes of absenteeism as a first step toward its prevention. Another key finding of the study highlights the limited involvement of parents, essential stakeholders in the implementation process, in both the program itself and their children's education. This finding is consistent with previous research (Güney & Yaman, 2022; Gürol & Gül, 2021; Kırnık et al., 2019; Özdemir & Taşkın, 2024), which underscores the necessity of strong school, family, student collaboration for academic success. Parental involvement enhances students' adjustment to school life and supports teachers' instructional efforts. As noted by Kılıç and Gündüz (2021), students whose parents are actively involved and consistently supportive tend to perform better academically. Therefore, parental roles in the educational process are vital, and active participation in RCPS practices is both necessary and expected. Participants identified the insufficient quality of instructional materials as another weakness of the RCPS. Supporting this view, Güney and Yaman (2022) found that the texts and activities in RCPS student workbooks require further enrichment in terms of both design and content, and that assessment tasks should be better aligned with the learning objectives. These findings are consistent with the results of the present study.

In the input dimension, which constitutes the second dimension of the CIPP model, some participants stated that the students were not cognitively ready. The target group of the RCPS

consists of third-grade students who, due to various reasons, have not acquired certain learning outcomes of the curriculum (MoNE, 2024). In light of this information, it is quite natural that these students may lack cognitive readiness. To ensure optimal benefit from the program, the guidance component should extend beyond students and parents to include comprehensive orientation and training for teachers as well. This would significantly improve the overall effectiveness of the program. Another finding of the study, as indicated under the code of affective readiness, is that students experience anxiety about being labeled as "unsuccessful". Anxiety in children has been associated with social-emotional challenges and diminished academic performance (Donovan & Spence, 2000). From this perspective, enhancing students' psychological well-being can be expected to positively influence the outcomes of the RCPS. In the input dimension, the adequacy of the physical learning environment and the extended duration of lessons emerged as other notable findings. These results align with existing literature, which highlights that environmental factors such as; class size, spatial organization, equipment availability, noise, air quality, temperature regulation, lighting, and cleanliness significantly contribute to students' academic performance, motivation, social interaction, physical and emotional well-being, and their sense of responsibility toward family and society (Şensoy & Sağöz, 2015). Participants stated that the extended duration of lessons negatively affected the functioning of the program. This perception may stem from the observation that students' interest, attention, and curiosity declined when the program was implemented after regular school hours. However, considering that students who begin RCPS at Module 1 level often have very limited literacy skills, and that one-on-one instruction and skill-based activities are time-consuming, such concerns may not be entirely valid for this particular group. Supporting this interpretation, Çaycı's (2018) study found that 88% of participants advocated for extended lesson durations in first-grade classrooms, reinforcing the need for extending instructional time for this group of students.

Another finding related to the input dimension is that participants found the assessment and evaluation methods recommended in line with the RCPS student activity books and the RCPS guideline to be appropriate. In particular, the study by Güney and Yaman (2022) also supports this, as participants in their research stated that the assessment and evaluation activities included in the student activity books for Turkish and mathematics learning outcomes were effective, suitable for students, and played an important role. A further finding within the theme of assessment and evaluation is the lack of standardization in measurement tools. Although the SIT, administered before the start of the implementation of RCPS to identify students' preparedness level, is implemented at the national level, the measurement tools used during the module transition process are often prepared by teachers themselves. These tools are typically sourced from online platforms, and their validity and reliability are not established. Similarly, the challenge posed by the absence of a standardized assessment tool during the module transition process was also highlighted in the findings of Güder et al. (2023). Furthermore, the Student Assessment Tool (SAT), administered at the end of the RCPS process, was last implemented by the MoNE during the 2021–2022 academic year. Its discontinuation in subsequent years has made it difficult to determine the national-level outcomes of the RCPS program. According to Tyler, curriculum evaluation consists of activities designed to determine the degree of achievement of goals (Demirel, 2017). In this regard, both the module transition practices and the assessment and evaluation activities conducted at the end of the RCPS program can be considered aligned with Tyler's goal-oriented approach to curriculum

evaluation. Implementing the SAT during the initial years of the program to determine its outcomes at the national level corresponds to Tyler's stage of "comparing the obtained data with the predetermined objectives." This approach is believed to provide decision-makers with a substantial dataset for informed decision-making.

In the third dimension of the CIPP model, process dimension, it was observed that participants employed methods such as direct instruction and problem-solving, along with techniques like question-and-answer and visualization in RCPS lessons. Participants cited reasons for choosing these methods and techniques, including their suitability for addressing learning difficulties and their alignment with the core skill instruction required in Turkish and mathematics courses. The study also found that due to students' low academic levels, the need to capture attention, and the desire for quick responses, these approaches were considered effective in achieving learning objectives in Turkish and mathematics. Similarly, Sarıdoğan's (2019) study revealed that participants frequently used direct instruction and question-and-answer techniques during the RCPS lessons, and their reasons for doing so were consistent with the findings of this research. Additionally, Avlukyarı (2019) recommended that beyond these methods, teachers should incorporate techniques that allow students to express mathematical concepts in diverse ways.

The study also revealed that participants were generally satisfied with the guidance, coordination, and supervision efforts during the RCPS process. The collaborative work of the school principal, the vice principal, the primary school teacher, and the guidance counselor within RCPS was found to contribute positively to instructional processes. This cooperation among staff members holistically supports students' academic, social, emotional, and career development. Among the findings under the theme of challenges encountered, issues such as insufficient parental support, student absenteeism, inadequacy and unsuitability of instructional materials, and the RCPS implementation schedule were identified. Numerous studies in the literature have shown that participants face similar challenges (Aydın & Yakar, 2020; Erdinç, 2022; Güder et al., 2023; Gürol & Gül, 2021; Kırnık et al., 2019; Özdoğru, 2022; Sarıdoğan, 2019; Ünsal & Korkmaz, 2016). In the study, participants proposed solutions to these challenges, such as increasing game-based activities, adjusting the RCPS implementation schedule to align with school conditions, enriching instructional materials, and enhancing communication with parents about the RCPS program. It is expected that providing academic support alongside enjoyable game-based activities to students enrolled in RCPS program will socially and emotionally motivate them. Moreover, organizing meetings with parents during the RCPS process to inform them about topics such as creating a conducive study environment, establishing effective family communication, adopting healthy communication practices, and demonstrating appropriate parenting attitudes and behaviors would contribute positively to the RCPS. Such guidance would enable parents to take an active role in their children's educational lives and make the best use of their parenting skills (Hoover-Dempsey & Sandler, 1995).

In the product dimension, it was observed that there was a significant improvement in the Turkish and mathematics skills of the students who participated in the RCPS program. This progress was found to enhance students' self-confidence, increase their classroom participation, and ultimately lead to higher levels of overall academic achievement, marking one of the key findings of the study. The results of previous research in the literature also

support the conclusion that RCPS program contributes to improved academic performance (Aydın & Yakar, 2020; Dilekçi, 2019; Gençoğlu, 2019; Gürol & Gül, 2021; Kaçar & Uz, 2019). Among these findings, the increase in self-confidence among students who, for various reasons, had not sufficiently acquired the expected competencies compared to their peers helps prevent the development of a sense of "learned helplessness." This, in turn, positively influences their future educational experiences and helps reduce the risk of potential school dropout (Ateş, 2020; Dekkers & Claasen, 2001; Hock et al., 2001; Kartal & Ballı, 2020).

Conclusion and Implications

When the research findings are interpreted from a holistic perspective, RCPS is seen as a successful curriculum in enhancing students' Turkish and mathematics skills, and consequently, their self-confidence. However, the RCPS's effectiveness is limited by several challenges, including student fatigue and absenteeism due to the schedule of implementation, insufficient parental support, deficiencies in the content of instructional materials, and particularly, the lack of standardized assessment tools during module enriched instructional materials to boost student motivation; establishing systematic communication strategies to strengthen parental collaboration and support; adjusting implementation schedules flexibly according to the specific conditions of each school; providing informative training for teachers; and reintroducing valid and reliable standardized assessment tools to measure the learning outcomes.

Author Contributions

Sami Aydın: Literature review, data collection, data analysis, writing original draft, validation and interpretation.

Melike Özyurt: Conceptualization, methodology, data analysis, writing original draft, review and editing, validation and interpretation.

Declarations

Ethical Approval and Informed Consent

This study was approved by Gaziantep University Institutional Ethical Review Board. All procedures in this study were conducted in accordance with Gaziantep University Institutional Review Board's approved protocols. Written informed consent was obtained from the participants for their anonymized information to be published in this article.

Supplemental Material

There are no supplemental materials for this article.

Disclosure of AI Use

DeepL Translate and Copilot were used to translate some sections of this article from Turkish to English.

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Uluslararası Eğitim Programları ve Öğretim ÇalışmalarıDergisi
15(*2*), 2025, 77-103
www.ijocis.com

TÜRKÇE GENİŞ ÖZET

İlkokullarda Yetiştirme Programı: Öğretmen Algı ve Deneyimlerine İlişkin Bir Durum Çalışması

Giriş

Eğitim sistemlerinin değerlendirilmesinde, okullulaşma oranları gibi nicel verilerden (The World Bank, 2018) ziyade öğrencilerin edindiği becerilere odaklanan nitel bir anlayış öne çıkmaktadır (United Nations, 2018). Nitekim Dünya Bankası Raporu (2024), düşük ve orta gelirli ülkelerdeki çocukların büyük bir kısmının okuduğunu anlama gibi temel becerilerden yoksun olduğunu, Birleşmiş Milletler'in (United Nations, 2024) son değerlendirmeleri ise birçok ülkede matematik ve okuma puanlarında düşüş yaşandığını ortaya koymaktadır.

Türkiye'de de eğitimde fırsat eşitliği adına nicel iyileşmeler görülse de (Gençoğlu, 2019), uluslararası değerlendirmeler öğrenciler arası başarı farklarının sürdüğünü göstermektedir (Taş vd., 2016). Türkiye'de temel becerilerde yetersiz öğrenci oranı, önceki yıllara göre azalmış olsa da bu oran hâlâ OECD ortalamasının üzerindedir (MEB, 2019). Bu bağlamda geliştirilen İlkokullarda Yetiştirme Programı (İYEP), üçüncü sınıf öğrencilerinin temel Türkçe ve matematik eksiklerini gidermeyi hedeflemektedir.

Alanyazındaki bazı çalışmalarda da (Aydın ve Yakar, 2020; Balantekin, 2020; Dilekçi, 2019; Erkan vd., 2024; Gençoğlu, 2019; Kırnık vd., 2019; Özdoğru, 2022; Toptaş ve Karaca, 2019) öğrenci, öğretmen ve veli görüşleri çerçevesinde İYEP programının etkililiğinin incelendiği görülmektedir. Bu araştırmada ise İYEP'in sistematik bir model temele alınarak öğretmen algıları ve deneyimleri üzerinden incelenmesi amaçlanmıştır. Bu kapsamda programın çok boyutlu yapısını ve uygulama dinamiklerini sistematik biçimde incelemek için Stufflebeam tarafından geliştirilen CIPP (Bağlam, Girdi, Süreç, Ürün) modelinden yararlanılmıştır. Bu model, araştırmanın temel sorularına yön vermiş ve öğretmen görüşlerine dayalı olarak programın farklı boyutlarının derinlemesine incelenmesini mümkün kılmıştır.

Yöntem

İYEP'in CIPP modelinden yararlanılarak öğretmen görüşlerine göre incelendiği bu araştırma, nitel bir yaklaşımla durum çalışması olarak desenlenmiştir. Araştırmanın çalışma grubu, 2024-2025 eğitim-öğretim yılında Kahramanmaraş'ın Onikişubat ve Dulkadiroğlu ilçelerinde görev yapan ve maksimum çeşitlilik örnekleme tekniğiyle seçilen gönüllü 16 sınıf öğretmeninden oluşmaktadır.

Veriler, araştırmacılar tarafından CIPP modeli bağlam, girdi, süreç ve çıktı boyutları çerçevesinde geliştirilen, uzman görüşleri ve pilot uygulama ile geçerliliği test edilmiş yarı

yapılandırılmış görüşme formu aracılığıyla toplanmıştır. Elde edilen veriler, tümevarımsal bir yaklaşımla içerik analizine tabi tutulmuştur. Araştırmanın geçerlik ve güvenirliğini sağlamak amacıyla katılımcı teyidi, uzman görüşü gibi yöntemler kullanılmış ve araştırmacılar tarafından birbirinden bağımsız yapılan kodlamalar arasındaki Miles ve Huberman (1994) uyum indeksi incelenmiştir.

Bulgular

İYEP'in öğretmen görüşleri doğrultusunda CIPP program değerlendirme modelinin dört bileşeni çerçevesinde incelenmesi ile elde edilen bulgular bağlam, girdi, süreç ve ürün olmak üzere dört boyutta sunulmaktadır. Katılımcılar bağlam boyutuna ilişkin, İYEP'in bilişsel ve duyuşsal gelişime katkı sağladığını ve öğrencileri temel derslerde akran seviyesine getirmeyi önemli bir amaç olarak gördüğünü belirtmişlerdir. Katılımcılar ayrıca, ücretsiz ders kitaplarının dağıtımı ve öğrencilerle bire bir eğitim imkânını İYEP'in güçlü yönleri olarak nitelendirmişlerdir. Buna karşın; uygulama zamanındaki belirsizlikler, öğrenci devamsızlıkları, veli desteğinin yetersizliği ve materyal niteliğine ilişkin sorunlar katılımcılar tarafından programın zayıf yönleri arasında sıralanmıştır.

Girdi boyutunda, katılımcıların programa dair en belirgin eleştirisi eğitim materyallerine yöneliktir. Katılımcılar, materyallerin niteliğinin düşük, tek tip ve yetersiz olduğunu ifade etmişlerdir. Ayrıca, öğrencilerin programa hazırbulunuşluk düzeyleri hakkında farklı görüşler mevcutken, ölçme ve değerlendirme yöntemlerinde bir standart olmaması da bu boyutta belirtilen bir diğer eksikliktir.

Süreç boyutunda, programın uygulanması sırasında karşılaşılan zorluklar öne çıkmaktadır. Öğretmenlerin çeşitli öğrenci merkezli yöntemler kullanmasına rağmen, veli desteğinin olmaması, öğrencilerin sürekli devamsızlık yapması ve programın uygulama zamanının yarattığı yorgunluk, uygulamanın önündeki en büyük engeller olarak belirtilmiştir.

Ürün boyutunda ise katılımcıların çoğu, İYEP'in öğrencilerin akademik becerilerini, öz güvenlerini ve derslere katılımlarını artırmada başarılı olduğu görüşündedir. Ancak bazı katılımcılar bu gelişimin istenen düzeyde olmadığını ve kullanılan standart olmayan ölçme araçlarının başarıyı doğru yansıtmadığını dile getirmişlerdir.

Tartışma

Bağlam boyutunda katılımcılar, İYEP'in öğrencilerin bilişsel ve duyuşsal gelişimlerine katkı sağladığını, onları akranlarıyla aynı seviyeye getirmeyi amaçladığını belirtmişlerdir. Öğrencilere ücretsiz kitap dağıtımı ve bire bir eğitim imkânı güçlü yönler arasında görülmüştür. Bu sonuç diğer araştırma sonuçları ile örtüşmektedir (Bayrakçı, 2005; İşeri, 2007). Nitekim Carey ve Grant (2015) da bire bir eğitimin öğrenci-öğretmen ilişkisini güçlendirdiğini ortaya koymuştur. Ancak uygulanma zamanı, devamsızlık, veli desteği eksikliği ve materyallerin yetersizliği programın zayıf yönleri olarak belirtilmiştir. Ayrıca velilerin sürece ilgisizliği, öğrenci başarısını olumsuz etkileyen önemli bir unsur olarak öne çıkmaktadır. Alanyazındaki diğer araştırma sonuçları da çalışmanın bu bulgularını destekler niteliktedir (Altınkurt, 2008; Bozbayındır ve Kara, 2017; Kılıç ve Gündüz, 2021).

Girdi boyutunda katılımcılar öğrencilerin bilişsel olarak yeterince hazır olmadıklarını, özellikle başarısız olarak etiketlenme kaygısı taşıdıklarını ifade etmişlerdir. Bu sonuç Donovan ve Spence (2000) tarafından da tespit edilmiştir. Fiziksel ortamın yeterliliği, ders süresinin uzunluğu ve ölçme-değerlendirme araçlarının standart olmayışı da katılımcıların dile getirdiği diğer unsurlardır. Alanyazında da fiziksel çevre koşullarının öğrencilerin akademik ve sosyal gelişiminde kritik öneme sahip olduğu vurgulanmaktadır (Şensoy ve Sağöz, 2015). Öte yandan ölçme değerlendirmede standart araçların olmaması, programın güvenilirliğini sınırlamaktadır (Güder vd., 2023).

Süreç boyutunda katılımcılar öğretim yöntemi olarak daha çok anlatım, soru-cevap ve problem çözmeyi kullandıklarını belirtmişlerdir. Bu yöntemlerin öğrencilerin düşük akademik seviyelerine ve temel beceri kazandırma ihtiyacına uygun olduğu belirtilmiştir (Sarıdoğan, 2019). Bu boyutta karşılaşılan başlıca sorunlar; veli desteği eksikliği, devamsızlık, materyal yetersizliği ve uygulama zamanıdır. Bu sonuçların alanyazındaki araştırma sonuçlarıyla benzerlik gösterdiği söylenebilir (Aydın ve Yakar, 2020; Erdinç, 2022). Çözüm önerileri arasında ise oyun temelli etkinliklerin artırılması, materyallerin zenginleştirilmesi ve veli iletişiminin güçlendirilmesi yer almaktadır. Hoover-Dempsey ve Sandler (1995) ebeveynlerin bilinçlendirilmesinin sürece katkı sağlayacağı vurgulanmıştır.

Ürün boyutunda ise öğrencilerin Türkçe ve matematik becerilerinde belirgin gelişmeler kaydedildiği, öz güvenlerinin arttığı ve akademik başarılarının yükseldiği görülmüştür (Hock vd., 2001). Alanyazında da İYEP'in öğrenci başarısını artırdığına dair bulgular araştırma sonuçlarını desteklemektedir (Aydın ve Yakar, 2020; Gençoğlu, 2019). Ayrıca programın öğrenilmiş çaresizlik duygusunu önlediği ve olası okul terklerini engellediği de belirtilmektedir (Dekkers ve Claasen, 2001).

Sonuç ve Öneriler

Genel olarak değerlendirildiğinde, İYEP öğrencilerin temel becerilerini geliştirmede ve öz güvenlerini artırmada başarılı bir programdır. Ancak devamsızlık, veli ilgisizliği, materyal eksikliği ve ölçme araçlarının standart olmayışı gibi sorunlar programın etkinliğini sınırlamaktadır. Bu sınırlılıkların aşılmasında oyun temelli materyallerin geliştirilmesi, veli iş birliğini artıracak stratejilerin uygulanması, esnek zamanlama yapılması ve güvenilir ölçme araçlarının kullanılması önerilmektedir.

International Journal of Curriculum and Instructional Studies
15(*2*), 2025, 104-131
www.ijocis.com

Augmenting In-Class Learning: The Role of Extracurricular Speaking Programs in EFL Curriculum

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Keywords

Foreign language
ELT curriculum
Extracurricular activities
EFL learners

Article Details:
Research Article

Received : 03-12-2024
Accepted : 11-11-2025
Published : 31-12-2025

DOI: 10.31704/ijocis.15914743

Abstract

Language learners achieve proficiency in the target language through both in-class practice and the application of their linguistic skills in real-world contexts. This process requires them to draw on their creative abilities to use the language meaningfully beyond the classroom. However, foreign language learners often have limited opportunities to practice the target language in environments where their native language predominates. Additionally, it is challenging to monitor and evaluate their language interactions and progress in such external settings. This study aims to explore the experiences of students in an extracurricular speaking program tailored for EFL learners as an intervention out of the school context. The subjects of this study were 30 preparatory-year students who were in the English program in the Faculty of Foreign Languages at a public university in Turkiye. This study implemented an action research design to reflect on a problem in the program. The data was collected through semi-structured interviews, field notes of the instructor, and reflective reports of the group leaders in the extracurricular speaking program. The data was analyzed using a six-step thematic analysis, involving familiarization, coding, theme generation, review, definition, and write-up to systematically identify and interpret recurring patterns across the data. The findings revealed significant improvements in students' speaking performance, academic growth, social interaction, and psychological well-being. These results suggest that integrating similar extracurricular programs into the standard curriculum could enhance student engagement, confidence, and holistic development, while fostering stronger communication skills and bridging the gap between formal education and practical language use.

To cite this article: Demiröz, E. (2025). Augmenting in-class learning: The role of extracurricular speaking programs in EFL curriculum. *International Journal of Curriculum and Instructional Studies, 15*(1), 104-131. https://doi.org/10.31704/15914743

Introduction

Achieving proficiency in a foreign language is a multifaceted process that extends far beyond the limitations of the traditional classroom environment. While structured in-class activities provide foundational linguistic skills, they represent only one aspect of language learning. Fluency, which encompasses not only the ability to understand and produce language but also the capacity to engage in meaningful, contextually appropriate communication, is often realized when learners step outside the controlled environment of the classroom and immerse themselves in authentic, real-world contexts (Lantolf et al., 2014; Lightbown & Spada, 2021; Long,1981).

In these naturalistic settings, learners encounter the language in its most dynamic form, where they are exposed to diverse dialects, colloquial expressions, and cultural nuances that are difficult to fully replicate in a classroom setting. This exposure challenges learners to apply their theoretical knowledge in spontaneous, often unpredictable situations, thereby deepening their understanding and enhancing their communicative competence. Furthermore, practical application in authentic contexts requires learners to navigate the complexities of the target language, such as negotiating meaning, managing miscommunications, and adapting their speech to different social settings. These experiences are crucial for developing a more holistic and flexible use of the language as they compel learners to respond quickly and utilize their linguistic resources in innovative and efficient ways (Richards, 2015).

The pedagogical gap between classroom instruction and real-world application has directed increasing attention to the role of extracurricular activities in foreign language education. Classroom-based instruction alone is often insufficient for equipping learners with the full range of competencies necessary to succeed in a competitive and dynamic world. As emphasized by Said et al. (2021), the integration of extracurricular activities is essential to effectively support and extend the goals of formal education. These activities offer meaningful opportunities to reinforce and expand students' learning by engaging them in diverse communicative experiences beyond the classroom (Lazar, 2018).

Moreover, as proposed by Krashen (1982), affective factors such as stress, anxiety, motivation, attitude, and self-confidence impact language learners' performance. Lowering the affective filters is necessary for a successful language learning experience. By creating a relaxed environment that encourages active involvement, students' anxiety can be alleviated. Extracurricular activities have the potential to create a positive and relaxed environment for students to support and move beyond their learning within the classroom.

Despite the growing interest in extracurricular activities, it is essential to engage in a critical analysis of the implementation of extracurricular programs to foster language learning. Thus, this study aims to explore the experiences of students participating in an extracurricular speaking program designed to take place within and outside the school context. By focusing on students' lived experiences, the study seeks to shed light on how speaking opportunities outside traditional instruction contribute to language development and learner engagement.

Existing studies suggest that extracurricular activities have the potential to influence language learning in diverse and meaningful ways. For example, in a study that explored the implementation of extracurricular educational activities, Khasawneh (2021) volunteered 200

students learning English in public schools in Saudi Arabia. In the study, a descriptive-analytical method was used with a questionnaire administered to the students. The findings revealed statistically significant differences in activity participation based on gender and grade level, with fifth-grade students showing higher levels of engagement.

Similarly, Nguyen (2019) evaluated students' needs and preferences for English extracurricular activities at a university in Vietnam. Using qualitative and quantitative research methods, data were collected through surveys and interviews. A mixed-methods approach, incorporating both qualitative and quantitative techniques, was employed to gather data through surveys and interviews. The results showed that the students expressed a desire to participate in extracurricular activities to enhance their English communication skills. This study points to the importance of the perceived value of practical language use beyond the classroom. In another study, Nimchahi et al. (2019) explored how culture-related extracurricular activities could enhance EFL students' socio-cultural competence. Using both control and experimental groups, the research involved 80 participants who completed pre- and post-tests and questionnaires. The experimental group participated in various activities, including video creation, online chats with native speakers, letter writing, and attending cultural events. The results showed that these activities significantly improved students' language proficiency and socio-cultural awareness. In a related study, Albayrak and Şener (2021) interrogated the relationship between foreign language learning motivation and participation in extracurricular activity programs among English preparatory class students. The findings indicated that students who took part in these activities demonstrated significantly higher motivation and more positive attitudes toward learning English.

Taken together, these studies underscore the pedagogical and affective value of extracurricular activities in language education. They not only provide opportunities for learners to apply language skills in authentic, meaningful ways but also contribute to the development of communicative competence, cultural awareness, and positive learner dispositions, which are dimensions often underrepresented in traditional classroom settings. Therefore, integrating extracurricular activities into language learning environments offers a powerful strategy for fostering more engaged, confident, and proficient language learning experiences.

The integration of extracurricular speaking programs into the educational curriculum poses several questions regarding their effectiveness and impact on student learning. To understand these dynamics, it is essential to investigate both the benefits derived and the subjective experiences of the students involved. Such an investigation will offer insights into how these programs can be optimized to complement traditional language instruction and enhance overall language proficiency. Therefore, this study is structured around the following research questions:

1)What are the experiences of students with the integration of an extracurricular speaking program outside the classroom environment?

2)In what ways do students benefit from the implementation of an extracurricular speaking program outside the classroom environment?

Analyzing students' experiences provides a deeper understanding of their perceptions, providing educators with valuable insights into the challenges, opportunities, and emotions

that students associate with these experiences. Additionally, examining the outcomes that students perceive as a result of their participation in the program is essential for understanding how the program may contribute to the development of communication skills. Together, these research questions aim to offer a comprehensive understanding of the extracurricular speaking program by examining both the process (students' experiences) and the outcomes (perceived benefits). The insights gained from this analysis can inform best practices for integrating extracurricular speaking programs into the foreign language curriculum.

Method

Research Design

Described as research leading to social action (Lewin, 1946), action research enables researchers to both understand and alter practices. Action research involves an iterative and cyclical process of planning, acting, observing, and reflecting (Kemmis, McTaggardt, & Nixon, 2014). This allows the researcher to implement interventions, evaluate their outcomes, and refine practices accordingly. Adopting a collaborative approach that integrates practice with research, this study employed an action research methodology to gain a comprehensive understanding of the research problem. Action research was chosen for the study to deepen the understanding of students' experiences during the implementation of an extracurricular speaking program and to reform practices to enhance students' oral skills.

This study consisted of two main action research cycles, each guided by the stages of Plan–Act–Observe–Reflect as outlined in the action research model developed by Kemmis et al. (2014). The methodology of the study was both action-oriented and reflective, following a cyclical process of planning, implementing actions, and evaluating the outcomes of those actions (Lewin, 1948). In the first cycle, the researcher identified a need for additional speaking practice, which was initially confirmed through a survey conducted at the School of Foreign Languages at a public university. The survey revealed that students required more opportunities to develop their speaking skills, leading the researcher to design an extracurricular speaking program that aimed to address this need. Voluntary participants were invited to join via email, with the first 30 applicants accepted based on their willingness to practice speaking and commitment to attend both school sessions and out-of-class meetings. The program was implemented over several weeks through in-class sessions facilitated by the researcher and out-of-class group meetings coordinated by student group leaders, who observed their peers and documented their insights through reflective reports. Data for this cycle were collected from classroom observations, field notes, and the leaders' reports, which captured patterns of participation, engagement, and communication challenges. Reflection on these findings revealed issues related to group dynamics and uneven participation, prompting the need for revisions before initiating the second cycle.

Building on these reflections, the second cycle began with a revised plan that involved adjustments to group compositions and leader roles to promote more balanced participation and sustained engagement. The updated structure was implemented in both classroom and out-of-class sessions, maintaining the same collaborative and participatory approach. During this phase, the researcher again conducted classroom observations, held ongoing discussions with group members and leaders, and attended out-of-class meetings to monitor the impact

of the changes. The group leaders continued to act as co-researchers, observing their members during sessions and submitting reflective reports that provided valuable insights into group interactions and progress. The reflective phase of this cycle involved analyzing classroom notes and leader reports, which indicated noticeable improvements in student participation, confidence, and collaboration. Overall, the cyclical and reflective process of planning, acting, observing, and reflecting not only enhanced the researcher's understanding of students' experiences but also contributed to the ongoing improvement of the extracurricular speaking program.

As the researcher and the participants worked together in this study, a participatory action research was employed. Participatory action research is a collaborative approach in which researchers and participants collaboratively investigate a problematic situation and implement actions for change (Kemmis & McTaggart, 2005). Unlike traditional research, where participants are often treated as passive subjects, participatory action research emphasizes shared ownership of the research process and outcomes (Reason & Bradbury, 2008). In this study, participatory action research was employed as both the researcher and student group leaders collaboratively implemented and evaluated changes. The leaders acted as co-researchers, observing peers and submitting reflective reports, thus contributing directly to data collection and interpretation.

Procedure

The study was conducted at the beginning of the Spring semester in 2023 at the School of Foreign Languages of a public university in western Turkiye. In the school, English is learned as a foreign language. The school admits students based on their performance in the national university entrance examination. Therefore, the students are from various backgrounds and cultures from all over Turkiye. The extracurricular speaking program, as shown in Appendix 1, started with 30 students whose English proficiency levels ranged from A2 to B2, as defined by the Common European Framework of Reference for Languages (CEFR).

The extracurricular speaking program was designed following a survey that evaluated the effectiveness of language education at the School of Foreign Languages. The results of the survey revealed a significant gap in students' opportunities to practice speaking English in real-world, communicative contexts. In response to this identified need, an extracurricular speaking program was developed to provide structured yet authentic speaking opportunities outside the formal curriculum.

The roadmap of the program was built around the goal of enabling students to speak, listen, and communicate with increasing clarity, accuracy, and effectiveness. The underlying principle was to help learners, with some guidance, apply their language skills in both informal contexts, and, particularly, in familiar situations they might encounter in daily life.

To ensure a clear pedagogical foundation, the program adapted the learning outcomes from the *Functional Skills in English* framework developed by the Northern Council for Further Education (NCFE), a respected UK-based educational charity specializing in vocational and technical learning. The NCFE framework served as a guiding source for aligning the program objectives with recognized standards, tailored to the students' needs and proficiency levels (ranging from A2 to B2). The learning outcomes of the program are shown in Table 1.

Table 1

Learning Outcomes for the Extracurricular Speaking Program

Domain	*Learning outcome*
Cognitive (Lower)	*By the end of the 12-week program, participants were expected to:*
	comprehend and extract key points from short spoken texts, identifying both main ideas and relevant supporting details
	respond to direct and straightforward questions with clarity and relevance
	formulate and deliver clear requests and questions suited to a variety of social and communicative contexts
Domain	*Learning outcome*
Cognitive (Higher)	*By the end of the 12-week program, participants were expected to:*
	adapt speech content and delivery to suit different audiences and purposes, drawing on their understanding of language and context
Domain	*Learning outcome*
Affective (Lower)	*By the end of the 12-week program, participants were expected to:*
	express opinions and feelings on a range of familiar topics
	participate constructively in group discussions, contributing relevant ideas to conversations on familiar topics
	demonstrate active listening by acknowledging, considering, and responding appropriately to different viewpoints, while following turn-taking conventions
Domain	*Learning outcome*
Affective (Higher)	*By the end of the 12-week program, participants were expected to:*
	engage meaningfully in discussions across varied contexts, offering relevant contributions that build on others' ideas.

The procedure of the study on a weekly basis is shown in Table 2. The study lasted for a total of 12 weeks. The first meeting was conducted by the instructor, who also served as the researcher. The first session included an introduction of the instructor and the extracurricular speaking program, a detailed explanation of the program's learning objectives, and an outline of the activities to be conducted throughout the program. An icebreaker activity was also conducted to facilitate interaction among the participants, followed by a decision-making process in which students formed small practice groups (comprising a minimum of four and a maximum of five students) and a selected group leader for each. Six groups were formed, with six group leaders appointed in total.

The program was structured to alternate weekly between instructor-led sessions in the classroom and group meetings conducted independently by students outside of school in various meeting locations designated by each group. The instructor-led sessions were designed using a holistic approach, incorporating a variety of activities tailored to different purposes within the extracurricular speaking program. The program's design also included a metacognitive component, enabling students to plan, track, and assess their own learning processes.

Table 2
Procedure of Study

Week	*Session Type*	*Activity*
1	Instructor-led (in-school)	Program overview, learning objectives, activity outline, icebreaker, group formation (4–5 students each), selection of group leaders (6 total)
2	Student-led (out-of-school)	First group meeting at chosen location; informal discussion
3	Instructor-led (in-school)	Structured speaking & listening activities
4	Student-led (out-of-school)	Group discussion; turn-taking practice
5	Instructor-led (in-school)	Listening comprehension; role-play requests
6	Student-led (out-of-school)	Real-life simulation (e.g., ordering food, giving directions)
7	Instructor-led (in-school)	Guided debates; expressing opinions and feelings
8	Student-led (out-of-school)	Peer question time; Q&A
9	Instructor-led (in-school)	Round-table discussion; presentations
10	Student-led (out-of-school)	Information exchange task
11	Instructor-led (in-school)	Final speaking tasks
12	Student-led (out-of-school)	Reflection & semi-structured interview

During the independent group meetings held outside of school, students engaged in communicative tasks that required the use of functional language relevant to authentic interactions. The functional language focused on expressing opinions, making suggestions, agreeing and disagreeing, giving directions, asking for clarification, making requests, and describing experiences. These communicative functions were chosen to promote fluency, confidence, and pragmatic competence in real-life speaking contexts.

The meeting locations were selected collaboratively by each group based on the communicative goals of their planned tasks and the availability of suitable environments. Commonly chosen locations included cafés, study rooms, and community centers. For instance, cafés were often preferred for tasks involving small talk, whereas outdoor spaces were used for descriptive speaking activities such as giving directions. Study rooms and community centers were selected for more structured tasks, such as group discussions. Each group decided on their meeting locations through discussion, considering convenience, accessibility, and the relevance of the setting to the communicative purpose of the week's activity.

Participants

The study involved 30 first-year undergraduate students in the preparatory program from a public university in Turkiye. The participants consisted of 18 male and 12 female students, with ages ranging from 18 to 20 years. Their departments were Mechanical Engineering, Electronics and Electrical Engineering, English Language teaching, and Translation and Interpreting. They chose to enroll in the program voluntarily although there were specific criteria for joining the program. Those, who joined the program, willingly consented to take part in the study as participants. Consequently, purposeful sampling, a non-probability sampling technique, was

employed to select participants with specific traits or distinctive experiences relevant to the research question, ensuring diverse and meaningful insights (Patton, 2014). Within this strategy, a combination of convenience and criterion sampling strategies was implemented for participant recruitment. Initially, convenience sampling was utilized to select students from the School of Foreign Languages at a public university, as they were the most accessible and willing to participate in both the extracurricular speaking program and the study. Subsequently, criterion sampling was applied to refine the selection, including only students at the B1 and B2 proficiency levels, consistent with the study's objectives. A total of 30 participants volunteered for the extracurricular speaking program, meeting the study's requirements. To maintain confidentiality, pseudonyms were assigned to all participants and consistently used throughout the study.

Table 3

Demographics of the Study Group

Participant	*Participation role*	*Gender*	*Age*	*Department*	*Proficiency level*
Efe	Student	Male	19	ME	B1
Melek	Student	Male	18	ELT	B1
Evrim	Group leader	Male	18	ME	B2
Mehmet	Student	Male	18	ELT	B1
Nil	Group leader	Female	19	ELT	B1
Cansu	Student	Female	18	EEE	B2
Melis	Student	Female	18	TI	B1
Hilal	Student	Female	18	EEE	B2
Deniz	Student	Male	19	EEE	B1
Osman	Student	Male	18	ELT	B2
Toprak	Student	Male	18	TI	B2
Ayşe	Student	Female	19	EEE	B1
Derin	Group leader	Female	18	ELT	B2
Erdem	Student	Male	18	TI	B1
Can	Student	Male	18	TI	B2
Zeynep	Student	Female	19	ME	B2
Emre	Group leader	Male	18	ELT	B1
Selin	Student	Female	18	EEE	B2
Burak	Student	Male	18	ELT	B2
Doruk	Student	Male	18	ME	B1
Onur	Group leader	Male	18	TI	B2
İlayda	Student	Female	18	EEE	B2
Baran	Group leader	Male	20	ELT	B2
Mert	Student	Male	18	ME	B2
Aslı	Student	Female	18	TI	B1
Kerem	Student	Male	18	EEE	B2
Nazlı	Group leader	Female	18	ELT	B2

Table 3 (*Continued*)

Yusuf	Student	Male	18	ELT	B2
Pınar	Student	Female	19	TI	B1
Arda	Student	Male	18	ELT	B2

Note: ELT: English Language teaching, TI: Translation and Interpreting, ME: Mechanical Engineering, EEE: Electronics and Electrical Engineering.

Table 3 indicates that 12 female and 18 male English language learners participated in the study. They were preparatory year students who study English as a foreign language in the Faculty of Foreign Languages at a public university. They were from various departments: Mechanical Engineering (n=5), Electronics and Electrical Engineering (n=7), English Language Teaching (n=11), and Translation and Interpreting (n=7). As part of their department requirements, they were required to study the English language for a year and reach the required language level (B1 for Mechanical Engineering and Electronics and Electrical Engineering department students and B2 for English Language teaching and Translation and Interpreting department students) to start taking courses in their registered programs.

As part of the evaluation process in the Faculty of Foreign Languages, students are assessed via an English proficiency test and placed into classrooms according to their levels at the beginning of the academic year. One group consists of students who begin taking A2 level English lessons and are aimed at the B1 level by the end of the academic year. This group mainly consists of engineering department students, but also a small number of students from various departments. The other group includes students who start with B1 level instruction and are expected to achieve B2 proficiency by the end of the academic year. In this group, there are students only from the departments of English Language Teaching and Translation and Interpreting. These students receive a skill-based language training in which the four core language skills of reading, writing, listening, and speaking are taught as individual lessons along with a language development course that integrates all the skills. Although they all had a four-hour speaking training, these students showed a desire to engage in more speaking practice opportunities. As a result, an extracurricular speaking program was designed to provide more opportunities for students to practice their speaking skills.

Data Collection

The study was initiated at the beginning of the Spring Semester of the 2022-2023 academic year, subsequent to obtaining ethical review board approval. To explore the students' experiences within the extracurricular speaking program, data were collected through three data sources: the instructor's field notes, the group leaders' reflective reports, and semi-structured interviews.

Data Collection Instruments

The Instructor's Field Notes. To comprehensively capture and critically analyze the experiences and insights throughout the extracurricular speaking program, the instructor, as a participant observer, kept a reflective field note right after the sessions for each session with the instructor. The instructor had direct and ongoing interaction with the students during the extracurricular speaking program. These notes included both direct observational notes and inferential reflections, with entries relevant to the research questions. The notes documented the activities undertaken, the challenges encountered, and the instructor's thoughts and

emotions during the sessions. The instructor's field notes offered an insider's perspective on how the students responded to activities in the in-class meetings, how they progressed over time, and the challenges they faced during the program. These notes also provided contextual details about the learning environment, student behavior, and other factors that influence the learning experience.

Group Leaders' Reflective Reports. In addition to the instructor's reflective practice, reflective reports, written by the group leaders to provide deeper insights from their perspective about the out-of-school sessions, were collected. There were six group leaders, selected by their peers from among the six groups of students within the program. They were selected based on their willingness and leadership skills at the end of the first in-school session with the researcher. In the selection, voluntary leadership was the most important issue. These group leaders volunteered to lead their respective groups. Their responsibilities included organizing social media groups for effective communication, coordinating the time and place for meetings outside of class, preparing backup discussion topics, ensuring that only English was spoken during the meetings, and documenting the content of their discussions, meeting locations, meeting durations, as well as their personal reflections on the experiences, including any positive or negative issues encountered before, during, and after the meetings.

The group leaders were instructed to complete guided reflective reports, which provided a structured framework to support deeper and more focused reflection. These reports were designed to prompt group leaders to engage in critical analysis rather than offering purely descriptive accounts, ensuring that reflections remain purposeful and aligned with the purpose of the research. In this study, the guided reports included specific target points such as the details about the attendees of the out-of-school meetings, the time and location, reflections on the meetings, plans for future gatherings, and any other relevant observations while still allowing space for additional comments the leaders wished to share. The group leaders were required to submit their reflections to the instructor on a weekly basis, enabling prompt action on any issues arising from the out-of-classroom interactions. The reflective reports kept by the group leaders reflected the student perspective that they may not openly and immediately express to the instructor. These reports were essential in understanding how students handled learning outside of the school. Their reflections also highlighted the challenges in organizing group meetings, maintaining engagement, fostering communication in English, and maintaining interpersonal dynamics beyond the classroom.

Semi-Structured Interviews. Besides the field notes by the instructor and reflective reports by the group leaders, interviews were crucial to gain an in-depth understanding of the participants' experiences and perspectives in this study. Semi-structured interviews were implemented as they allow for deep exploration of a topic while maintaining enough structure to guide the conversation (Kvale & Brinkmann, 2009). Semi-structured interviews enabled the interviewer to delve deeper into specific areas and explore emergent themes during the conversation, while allowing participants to express their thoughts freely. In this study, semi-structured interviews were conducted at the conclusion of the program, allowing students to critically reflect on their learning experiences. The interviews served as a reflective tool, enabling learners to express themselves and become more conscious of their learning processes through sharing their experiences. They provided an opportunity for students to express their experiences in a more focused and reflective manner than in group settings. They

allowed the researcher to explore the issues that arose in greater detail, revealing a more comprehensive picture of the students' experiences.

A total of 14 students volunteered to participate in the interviews in English sharing their experiences of being part of the extracurricular speaking program. A set of open-ended questions, as shown in Appendix 2, was developed to elicit detailed responses aligned with the research purpose. The interviews were conducted in a quiet, in-person setting, each lasting approximately 30 minutes. With the participants' consent, all interviews were audio-recorded to capture the details during the conversation. The interviews were later transcribed verbatim for thorough analysis.

Data Analysis

The data collected from interviews, field notes, and reports were analyzed using thematic analysis, a method employed to systematically identify, analyze, and report recurring patterns (Braun & Clarke, 2006). A six-step process developed by Braun and Clarke was implemented for thematic analysis: familiarization, coding, generating themes, reviewing themes, defining and naming themes, and writing up. The analysis process began with transcribing audio of interviews and then reading through each data source in the sequence in which they were collected or reported, allowing the researcher to familiarize with the content. Emerging patterns that describe the content were noted during this phase. In the subsequent reading, meaningful segments of data were assigned interpretive codes. These codes were noted in a codebook developed on a computer to systematically organize and manage patterns and themes. Different colors were used for different codes and each participant, to facilitate quick identification. These codes were then grouped under broader pattern codes. Further analysis of these pattern codes was conducted to identify distinct and common themes in alignment with the study's purpose. Then, the data were reviewed again to compare themes for more accurate representations of the data. The next step involved defining themes to explain what is meant by each theme. Finally, themes, their meanings, and how they connect together with excerpts were written.

To ensure the trustworthiness of the study, the researcher established credibility using various strategies such as prolonged engagement, triangulation of data, reflexivity, and peer debriefing as recommended by Lincoln and Guba (1985). More specifically, credibility was established by representing multiple constructions of reality through prolonged engagement (12 weeks) by using multiple data sources (the instructor's field notes, the group leaders' reflective reports, and semi-structured interviews) to cross-check the results and ensure consistency; by engaging in reflexivity to acknowledge and address the researcher's biases and perspectives, supported by field notes taken immediately after each session with the instructor acting as a participant observer and by peer debriefing through consultation with an expert researcher in research and language studies, who reviewed and provided feedback on the study's methodology. The main researcher and the expert researcher discussed the procedures and results, and independently analyzed and coded the data to establish inter-rater reliability. Percentage agreement statistics were calculated to measure inter-rater reliability. The agreement was 0.93. They then compared their analyses, discussed points of agreement and disagreement, and resolved any discrepancies through discussion. This collaboration was complemented by the active involvement of the group leaders, who played a crucial role as research partners. By acting as a bridge to the out-of-class activities, the group leaders

contributed significantly to a deeper understanding of these interactions. Involving individuals from within the group in the research process is particularly important as it allows for the generation of solutions that are more applicable and relevant to the participants, rather than relying solely on external expert recommendations (Carr & Kemmis, 1986). The group leaders helped to clarify the data collected through their reflective reports. To ensure the reliability of the study, consistency was maintained through triangulation of the data and findings, creating an audit trail, and cross-checking codes with an external auditor.

The researcher presented a sample of the data to the external auditor, familiarized him with the coding system, and discussed her interpretations of the data. The two researchers then compared their analyses, discussing and resolving any differences through collaborative discussion. Neutrality was achieved by ensuring that the findings genuinely reflected the participants' perspectives, free from any biases of the researchers. Finally, transferability was facilitated by providing rich, detailed descriptions of the setting and events, enabling readers to assess the applicability of the findings to other contexts.

Role of the Researcher

In this study, the researcher, who also served as the instructor, adopted the role of facilitator within the extracurricular speaking program. Although this might add a degree of subjectivity to the research, it also provided an opportunity for a comprehensive and in-depth understanding of individuals and events that would be inaccessible to external observers/researchers. The researcher’s responsibilities extended beyond merely planning activities to encourage student interaction within the groups. The researcher also actively engaged in the learning process by providing ongoing guidance and feedback. The researcher fostered a supportive and welcoming environment during speaking program meetings with program participants, emphasizing that the aim was to cultivate a friendly and collaborative atmosphere. In addition to facilitating communication and collaboration both within and across groups, the researcher encouraged productive thinking, identified and addressed any issues arising within the groups or during their out-of-school meetings, and intervened to resolve problems when necessary.

Ethical Issues

As this research involved human participants, ethical approval was obtained from the Institutional Review Board (IRB) of the target university. Participants were fully informed about the purpose, nature, and any potential risks associated with the study through informed consent forms, which were completed at the beginning of the study. The risks involved in participating in this research were not greater than those encountered in regular daily life.

Participation in the study was entirely voluntary. A total of 30 participants joined the program voluntarily. Among these, 14 participants volunteered to take part in the interviews, while 6 group leaders agreed to write reports and share their findings as part of the study. To further ensure confidentiality, pseudonyms were used throughout the research to protect the identities of all participants. In terms of data management, all collected data, including interview recordings and transcripts, were securely stored on a password-protected computer. Additionally, the group leaders' reports were kept in a physical folder placed in a locked room.

Results

After analyzing the data, the researcher identified four themes related to the experiences of participants with extracurricular speaking program: meaningful language use, social interaction, peer scaffolding, and pathways to improvement. The themes in connection to the findings are presented and discussed in the following section.

Meaningful Language Use

Throughout the data, the theme of meaningful language emerged as particularly prominent. Meaningful language use refers to the use of language in real-life, relevant, and purposeful contexts, rather than artificial or purely textbook-based scenarios (Widdowson, 1998). Participants repeatedly highlighted the necessity and importance of using authentic and meaningful language in their daily lives, as opposed to the more technical and context-free language they encounter in textbooks. Efe, for example, shared the benefits of practicing English outside the classroom: "You started this program. That was useful because speaking English outside school is helpful. Grammar is not enough. You need practice. And you can practice by speaking" (Interview, 12.06.23). Efe's emphasis on practice over grammar rules reflects the importance of aligning language learning with real-life communication rather than relying solely on textbook examples. Similarly, Melek highlighted the value of incorporating daily conversations into the program:

> As you know, there is no place we use English all the time. In schools, we talk about only academic stuff. We don't talk about daily life much. We use English in daily life with this program. Like we do daily conversation in Turkish, we did same in English. It was very useful. Now, if I met an English person or anyone who know English, I think I can talk easily (Interview, 12.06.23).

Evrim, another participant, noted the contrast between the structured nature of classroom discussions and the more spontaneous, open-ended conversations in the program:

> At school, they always talk about a certain theme. But it's not like that in the program. We start with greetings. Then, thoughts about school. Then, something good in our life. They tell about it. We are happy, we tell about it. Or, we talk about our future thought. Because there is no limit on the subject (Interview, 12.06.23).

Social Interaction

Building a relationship grounded in support is critical for building a sense of trust and belonging. Students in the extracurricular speaking program shared how they developed a supportive relationship with each other throughout the program, which was echoed in multiple accounts across the data from field notes, interviews, and reports. Social interaction fostered a more engaged learning environment, in which participants got to know each other, built strong relationships, felt social acceptance, and shared and cared for each other. About the positive impact of social interaction within the group, Mehmet, one of the students in a group, highlighted the positive impact of social interaction: "This help me know people well. Example, we talk... As we talk, speaking end and we talk our memories. Then, we know each other better" (Interview, 12.06.23). Reflective reports of group leaders also reflected this impact. Nil, one of the group leaders, reflected on the meetings outside the school and described the value of

these interations: "We have friends from different departments. It is nice to talk to them. It helps us for network, have better… healthy relations with many friends" (Reflective Report, 10.04.23). Similarly, Cansu discussed how the program helped her overcome her shyness and build a social environment:

> I did not have a social environment here. I am actually a bit shy when it comes to talking to people. But that did not happen because when we were together as group, my shyness went away. For example, when I spoke English outside, people looked at me. My shyness actually went away because we went as a group. We spoke English everywhere (Interview, 12.06.23).

Peer Scaffolding

In this study, instructor, group members and group leaders became the source of help, guidance and support for the participants in the program through the reflective reports group leaders provided right after each session with their group members. However, most of the assistance was from the students within the same group. During the meetings outside the school, group members supported each other in many ways. As there were students mixed from B1 and B2 in each group, students reported backing each other whenever someone had any issues, especially with vocabulary, structure or pronunciation. For example, Melis described this dynamic within her group as: "My group friends have high level. They know big words. I don't understand. Example, I tell something. I try… They understand and say, 'You can use this'" (Interview, 12.06.23). Similarly, Hilal shared the support she received from her goup: "There are people who speak better, but they help me. They don't say my problems, but they help" (Interview, 12.06.23).

Deniz also highlighted the assistance she received: "if I don't know a word in a sentence, my friends tell me correct word. Then … I use it well" (Interview, 12.06.23). On the other hand, Osman, whose proficiency level was higher than the rest of the program, reflected on his role as a supporter: "I still try to help my friends improve their pronunciation and speaking. After all, since I am in that environment, I want to hear correct English" (Interview, 12.06.23).

Pathways to Improvement

Research highlights the psychological, academic, and social benefits of learning additional languages. Multilingual learners, for instance, tend to outperform their monolingual peers on standardized tests (Thomas & Collier, 2002). Beyond academic achievement, language learning fosters cognitive flexibility and mental agility, improving learners' ability to shift between tasks and manage complex information (Bialystok, 2001). It also contributes to psychological growth, enhancing learners' self-confidence and self-esteem—particularly when they experience success in real-life communication (Dörnyei, 2005). On a social level, engaging with new languages cultivates empathy, openness, and intercultural sensitivity, helping learners appreciate cultural diversity and interact respectfully with others (Byram, 2020).

As students supported one another in their learning journeys through the extracurricular speaking program, they reported experiencing psychological, academic, and social benefits, which contributed to their language learning improvement. Many participants noted an increased ability to overcome their speech barriers related to shyness, which affects language performance. Related to this, Toprak explained how the program helped him address his

challenges: "I am little shy. This helped me speak better. Sometimes, I stop. I start no thinking anything. It helped me solve this" (Interview, 12.06.23). Ayse also shared her experience of overcoming initial hesitation and gaining self-confidence: "At first, I approached with some hesitation. I stressed too much. I told you in your last speech that I was nervous, but I overcame that nervousness in the group" (Interview, 12.06.23). Another student, Hilal, emphasized the program's academic benefits and described her progress in fluency: "In my first speaking exam, I stopped a lot. Now I can speak well without stopping" (Interview, 12.06.23). Melek also indicated that she was able to improve her speaking skills as a result of the program:

> You are trying to express yourself to people and that is why you are pushing yourself. When you are alone, you say to yourself, I will say this sentence. You think about it. You form it in your mind and it has a great effect on your pronunciation. At the same time, when you are talking to someone, they also use words that you do not know. They say things that you do not know. You research them. You learn them too (Interview, 12.06.23).

One of the group leaders, Derin, noted in her reflective report that "Since we mostly stayed in dorm, it was an excuse for us to go out" (Reflective Report, 8.05.23). She found the program to be an opportunity to change the atmosphere and socialize. Efe also reflected that he took advantage of the program socially by sharing:

> I am not normally someone who gets together with people I don't know, but this was something that came out of necessity. You inevitably come into contact with different people. That started to enable me to talk to people I didn't know. When I first came to Edirne, my circle of friends consisted only of my dorm roommates and classmates. I have expanded my circle a lot now (Interview, 12.06.23).

The social benefit of the program was highlighted many times by the students. The following extract explains another social benefit thanks to the program as stated by Melek:

> It increased my desire to come to school a little bit. Because I am entering a different social environment. I met different people. When I realized that I could see those people at school, I started to make more friends. This increased my desire to come to school (Interview, 12.06.23).

Melek specifically highlighted the social impact as well as school engagement. The aforementioned extracts reflect on the significance of the extracurricular speaking program on students' improvement. The program had psychological, academic, and social advantages for students in their speaking practice.

From a comparative perspective (RQ2), students with higher proficiency (B2) reported using the program to refine fluency and extend vocabulary, while B1-level learners used it primarily to overcome hesitancy and translate passive knowledge into active use. Authentic, participant-driven conversations enhanced learners' engagement and confidence, validating research on the role of meaningful language use in communicative competence. While all participants reported benefits, the type and emphasis varied. Lower-proficiency learners highlighted reduced anxiety and increased willingness to communicate, while higher-proficiency learners focused on refining accuracy and expanding vocabulary. Introverted participants emphasized

overcoming shyness, whereas extroverted participants valued the networking and social opportunities.

Findings for Triangulation of Data

Analysis of the three data sources (the group leaders' reflective reports, the instructor's reflective practice and field notes, and the semi-structured interviews) revealed overlapping themes that consistently emerged across perspectives. The leaders' reflections gave concrete examples, the instructor's notes validated these observations in the context of broader program goals, and the interviews added personal narratives explaining why these difficulties occurred.

The group leaders reported an observable increase in participation and confidence as weeks progressed, noting that quieter members began contributing more during discussions. Instructor observed greater fluency and willingness to speak in class-based activities, with some students "taking more initiative" in role-plays and group discussions. Interviews revealed that students felt "less afraid to speak" and "more comfortable making mistakes", attributing this to repeated exposure in both formal and informal settings.

The parallel accounts from leaders, the instructor, and participants themselves confirm that the program contributed to gradual improvement in speaking confidence, driven by both structured practice and informal application. The group leaders described moments where strategies learned in instructor-led sessions, such as turn-taking techniques or summarizing, were intentionally applied in out-of-school meetings. Instructor's notes documented this transfer explicitly, noting when students referenced prior class activities during peer discussions. Interviews confirmed this connection, with students explaining how class activities "prepared" them for real-life simulations and made them "more ready" for spontaneous conversations.

The three data sources collectively show that the program not only supported language skill development but also nurtured peer leadership and collaborative skills, adding value beyond the original learning objectives. The group leaders often mentioned increased bonding and camaraderie within groups as a motivator for attending and participating. Instructor's notes observed a noticeable improvement in rapport and cooperation during in-class group tasks. Interviews revealed that students valued the friendships formed, with some reporting that the social aspect made the English practice more enjoyable and natural.

Discussion

The findings of the study emphasize the significance of authentic, real-world interactions in an English curriculum. Many researchers have highlighted the importance of authenticity in ELT (Ahmed, 2017; Chang et al., 2010; Dai, 2023; Oura, 2001). During interviews, it became apparent that natural language use fosters a deeper connection with the language, allowing learners to use the target language in purposeful contexts. This shifts the focus from rote learning to meaningful language use, which is crucial for effective communication.

One of the key findings is the role of learner autonomy in the language acquisition process. In the extracurricular speaking program, students felt a strong sense of autonomy and control over their learning process, as stated by Efe: "Here, we could talk more freely, choose the topics we like, and express ourselves with no pressure" (Interview, 12.06.23). Having the freedom to

decide what, when, and how to participate in the learning process can encourage students to be more actively involved and achieve greater success in their studies (Radenski, 2009; Stefanou et al., 2004). This aligns with Rancière's (1991) discussion in The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation, about the importance of emancipating students from teacher dependence by fostering their desire for independent learning. Unlike traditional classroom settings, where the presence of an authority figure can sometimes limit creative expression, the lack of constant oversight in this program allowed participants to explore the language more freely. This autonomy enabled students to engage in discussions on topics of personal relevance, which not only enhanced their linguistic competence but also deepened their meaningful connection to the language. This emphasizes the importance of giving students more control over their learning experiences, fostering an environment where they can take risks and learn from their mistakes without fear of judgment.

The study further underscores the critical role of social interaction in language learning. Exposure to social interactions in English within informal environments can be a highly influential factor in language learning, leading to positive brain changes and improved behavioral outcomes that significantly enhance language acquisition (Hellermann & Cole, 2009; Li & Jeong, 2020; Verga & Kotz, 2013). Since the extracurricular speaking program required voluntary attendance, fostering a sense of community was essential for sustaining engagement among participants. As learners developed closer relationships, they began to share personal experiences, which deepened their connections with one another. This group bond created a more supportive learning environment for students to feel comfortable taking risks and sharing their thoughts. The insights from the participants reveal how meaningful social interactions can transform the language learning experience, fostering a sense of belonging and mutual understanding among participants.

Additionally, the findings highlight the value of peer support in the learning process. Peer-assisted scaffolding emerged as a powerful strategy for language development. Participants frequently provided feedback and corrections on vocabulary, grammar, and pronunciation, creating a collaborative learning environment. This mutual assistance allowed learners to develop a deeper understanding of language nuances while fostering a non-judgmental space that encouraged them to take risks. As a result, students were able to take more active roles in their learning process, shifting from passive recipients of knowledge to active participants. This aligns with Kaoropthai et al. (2019) and Chun and Cennamo (2022), who emphasize the importance of peer scaffolding in promoting critical thinking and expanding learners' perspectives. The supportive environment also cultivated a sense of shared responsibility, where students felt accountable not only for their own progress but also for the growth of their peers. This dynamic contributed to a richer, more interactive learning experience, allowing students to flourish both individually and as a community.

Research strongly supports the idea that social interaction is essential to foster a sense of belonging within the learning community, which in turn enhances language learning. Studies on language learning motivation indicate that when learners feel a strong sense of belonging, they are more engaged and persistent in their studies (Dörnyei, 2009). The findings from this study further illustrate how meaningful social interactions not only strengthen mutual understanding among learners but also create a supportive environment that motivates them to participate actively and invest more in their language development.

While social interaction is widely recognized as beneficial for language learning, some studies question its sufficiency as a standalone factor. A multiperspective approach that balances form, fluency, and communication is essential to ensure comprehensive linguistic development (Demiroz, 2023). Skehan (1998) contends that interaction, though valuable, does not inherently lead to linguistic development unless learners actively focus on language form. Similarly, DeKeyser (2007) emphasizes that deliberate practice is necessary for the long-term retention of complex grammatical structures. Furthermore, research suggests that peer-based interactions, if there is no corrective feedback, may inadvertently reinforce errors (Rebuschat & Williams, 2012). This implies that without conscious attention to grammar and structure, learners may develop communicative competence but struggle with accuracy and complexity. Thus, some studies raise concerns about the potential drawbacks of peer learning, indicating that while collaborative settings encourage active participation, they must be supplemented with guidance from more proficient speakers or instructors to prevent persistent inaccuracies.

This study is not without limitations. First, since the participants were preparatory class students from a single Turkish university, the generalizability of the findings is limited. Replicating the study in diverse contexts—such as different countries, regions, age groups, and language proficiency levels—would help validate and extend the results. Additionally, future research should aim to include a larger and more varied sample of participants to strengthen the robustness of the findings. Another limitation is the study's exclusive focus on students' experiences in an extracurricular speaking program. Future studies are recommended to investigate other language skills within extracurricular contexts, which would provide a more comprehensive understanding and better inform the integration of such programs into the EFL curriculum.

Despite these limitations, the study's findings suggest that fostering environments where learners can engage in authentic, meaningful communication is crucial for language development. Providing opportunities for autonomy, peer support, and genuine social interaction can significantly enhance students' language learning experiences. When learners have the freedom to express themselves in meaningful ways, they are more likely to develop confidence and take ownership of their learning process. Furthermore, peer collaboration reinforces not only linguistic competence but also critical thinking and interpersonal skills, making language learning a more dynamic and engaging experience.

Conclusion and Implications

The purpose of the study was to investigate the experiences of university students in an extracurricular speaking program, in which they made use of their oral communication skills both inside and outside the classroom. This program was specifically designed to provide students with extra opportunities to practice their oral skills. The results of the study revealed important insights into the students' experiences and perceptions regarding the extracurricular speaking program.

A detailed analysis of instructor and group leader reflections on the meetings, combined with group member responses collected through interviews, indicated a significant improvement in students' overall speaking performance. This improvement was observed throughout the implementation of the speaking program, which, for most of the study, took

place outside the formal school setting. Furthermore, the extracurricular speaking program fostered a supportive and open environment, enabling students to express themselves freely and build strong interpersonal relationships with their peers and group members through both in-class and out-of-class interactions.

In light of these findings, several pedagogical implications emerge. First, the notable enhancement of students' academic, psychological, and social development as a result of the extracurricular speaking practice suggests that incorporating such programs into the standard curriculum has the potential to enrich students' overall growth. This highlights that language learning extends beyond the acquisition of academic skills, impacting emotional well-being and social competence. Therefore, teachers should consider integrating extracurricular speaking activities into the existing language curriculum, as doing so may lead to increased student engagement, confidence, and holistic development. Additionally, these practices can help bridge the gap between formal education and practical communication skills, emphasizing the value of comprehensive language use in real-world settings. Language teachers, especially foreign language teachers, are suggested to implement similar extracurricular activities to promote speaking practice for students.

The results of this study reveal that it is required to develop a learner-centered curriculum. The extracurricular speaking program designed for this study serves as an example of a learner-centered approach that can be effectively integrated into such a learner-centered curriculum. Such programs are designed to enhance language acquisition through learner-centered language communities, which best serve learners' needs when they prioritize their active involvement. However, this does not imply that these communities should function without a facilitator; rather, it is a collaborative effort between teachers and learners (Nunan, 2005). Teacher guidance plays a crucial role, particularly in creating an effective language learning atmosphere. Teacher support is significant in the initial stages of learning as it increases learner autonomy and helps develop effective communication skills (Reeve et al., 2004). In this study, students took an active role in their learning process by planning, guiding, and operating communicative activities within their groups.

The results also highlight that the classroom is not the only setting to achieve success in learning languages. An environment that provides authentic language production offers real-life contexts for using the language. This is particularly crucial in foreign language contexts, in which students often have limited opportunities to practice the target language. In such settings, authentic communication plays a vital role in language learning for bridging the gap between classroom learning and real-world use. When learners engage in authentic and meaningful language use, they go beyond merely constructing sentences; they communicate thoughts and emotions, express needs, and solve problems. Creating a non-threatening environment for speaking encourages language learners to take greater risks in their language use. In addition, meaningful language use facilitates the negotiation of meaning, as learners adapt their language in response to varying situations.

Recommendations

Implementing extracurricular speaking programs is essential to address the need for language learners to practice their foreign language speaking skills in more authentic and meaningful contexts. Unfortunately, the current English language curriculum cannot

accommodate the large class sizes. Specifically, the curriculum is constrained by limited class hours, which fail to provide sufficient opportunities for each student to engage in meaningful speaking practice. Furthermore, the language presented in textbooks is overly structured, thus limiting learners' exposure to naturalistic language models. Exacerbating these issues, foreign language teachers often emphasize instruction centered on form rather than fostering communicative competence.

To effectively address these challenges, the English language curriculum must prioritize preparing foreign language learners for more realistic communicative scenarios. Several key recommendations can be derived from this analysis. Firstly, it is recommended that extracurricular programs, such as the speaking program in this study, be implemented to support the mainstream curriculum. These programs would provide learners with additional opportunities to practice their speaking skills beyond the limitations of the classroom environment. Furthermore, language teachers should be encouraged to go beyond the prescribed textbook content and incorporate more authentic language input, which would promote more natural and meaningful language production. To facilitate this shift, it is crucial for teachers to participate in professional development seminars focused on the integration of authentic language practices. Finally, rather than focusing predominantly on form, English teachers are advised to adopt a more holistic pedagogical approach that effectively integrates all language skills, ensuring a more balanced and communicative learning experience.

Declarations

Ethical Approval and Informed Consent

This research received ethical approval from the Trakya University Institutional Review Board. All study procedures were executed in compliance with the protocols established by the Trakya University Institutional Review Board. Participants provided written informed consent for the publication of their information in an anonymized format.

Supplemental Material

No supplementary materials accompany this article.

Disclosure of AI Use

During the preparation of this article, the author used ChatGPT-4 in order to correct errors in expression, grammar, and punctuation. After using this tool, the author reviewed and edited the content as needed and takes full responsibility for the content of the article.

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15(*2*), 2025, 104-131
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TÜRKÇE GENİŞ ÖZET

Sınıf İçi Öğrenmeyi Güçlendirmek: Eğitim Programını Destekleyen Konuşma Programlarının Yabancı Dil Olarak İngilizce Öğretim Programındaki Rolü

Giriş

Yabancı dil öğrenen bireyler, çoğu zaman hedef dili doğal biçimde kullanma fırsatlarının sınırlı olduğu ortamlarda öğrenim görmektedirler. Ana dilin baskın olduğu bu bağlamlarda, öğrencilerin hedef dilde etkileşim kurmaları ve gelişimlerinin izlenmesi güçleşmektedir. Oysa anlamlı dil öğrenimi, öğrencilerin sınıfın denetimli ortamından çıkarak dili gerçek yaşam bağlamlarında deneyimlemeleriyle gerçekleşmektedir (Lantolf vd., 2014; Lightbown ve Spada, 2021; Long, 1981). Bu doğal ortamlarda öğrenciler, farklı kültürel unsurlarla karşılaşarak dili daha esnek ve yaratıcı biçimde kullanmayı öğrenirler (Richards, 2015).

Bu noktada, müfredatı destekleyen ders dışı etkinlikler, formal eğitimi tamamlayıcı bir rol üstlenmektedir. Lazar (2018), bu tür etkinliklerin öğrencilerin öğrenmelerini pekiştirmesi ve sınıf dışında da anlamlı iletişimsel deneyimler kazanmaları açısından önemini vurgulamaktadır. Ancak bu tür konuşma programlarının öğrenciler üzerindeki etkilerini inceleyen çalışmalar sınırlıdır.

Bu çalışma, yabancı dil olarak İngilizce öğrenen öğrencilerin müfredatı destekleyen bir konuşma programına katılım deneyimlerini incelemeyi amaçlamaktadır. Araştırma şu sorulara yanıt aramaktadır:

1. Öğrencilerin sınıf dışı konuşma programına ilişkin deneyimleri nelerdir?
2. Öğrenciler bu programdan hangi açılardan fayda sağlamaktadırlar?

Yöntem

Bu çalışmada, müfredatı destekleyen bir konuşma programına katılan 30 üniversite öğrencisinin deneyimlerini incelemek için bir eylem araştırması tasarımı kullanılmıştır. Bu çalışmanın katılımcıları, Türkiye'deki bir devlet üniversitesinin yabancı diller bölümünde İngilizce programına devam eden 30 hazırlık sınıfı öğrencisidir. Katılımcılar amaçlı örnekleme yöntemlerinden uygun örnekleme ve ölçüt örnekleme yoluyla seçilmiştir. Veriler, öğretim elemanının saha notları, grup liderlerinin yansıtıcı raporları ve yarı yapılandırılmış görüşmeler kullanılarak elde edilmiştir. Veri analizi, Braun ve Clarke'ın (2006) altı adımlı süreci takip edilerek tematik analiz kullanılarak gerçekleştirilmiştir. Geçerlilik ve güvenilirliği sağlamak için çalışmada çeşitleme, akran bilgilendirmesi ve dış denetim kontrolleri kullanılmıştır. Sınırlamalar arasında

katılımcıların kendi raporlarından kaynaklanan potansiyel önyargılar ve genelleştirilebilirliği sınırlayan tek bir kuruma odaklanma yer almaktadır. Ayrıca, veri toplama süreci öncesinde ilgili kurumun etik kurul onayı alınmıştır.

Bulgular

Verilerin analiz edilmesinin ardından araştırmacı, katılımcıların müfredatı destekleyen konuşma programı deneyimleriyle ilgili dört tema belirlemiştir: anlamlı dil kullanımı, sosyal etkileşim, akran öğrenmesi ve gelişime giden yollar. Müfredatı destekleyen konuşma programı, anlamlı dil kullanımının önemini vurgulamıştır çünkü katılımcılar, sınıflarda tipik olarak karşılaşılan teknik veya ders kitabı dili yerine otantik, gerçek yaşam İngilizcesi pratiği yapmanın değerini vurgulamış ve bu da günlük iletişimde kendilerini daha rahat hissetmelerini sağlamıştır. Ayrıca, program sosyal etkileşimi teşvik ederek katılımcıların güçlü bağlar kurmasına, utangaçlığın üstesinden gelmesine ve İngilizce pratik yaparken sosyal ağlar oluşturmasına olanak sağlamıştır. Akran desteği sayesinde öğrenciler, kelime bilgisi ve telaffuz gibi dil konularında birbirlerini destekleyerek iş birliğine dayalı bir öğrenme ortamı yaratmışlardır. Nihayetinde, bu faktörler; öğrencilerin güveninin artmasını, akıcı konuşmalarını ve konuşmayla ilgili zorlukların üstesinden gelme becerisi kazanmalarını destekleyerek hem akademik hem de sosyal olarak fayda sağlamıştır.

Tartışma

Bu çalışma, önceki araştırmalarla da desteklendiği üzere (Ahmed, 2017; Chang vd., 2010; Dai, 2023; Oura, 2001), İngilizce öğreniminde gerçek hayat içerisinde etkileşimin önemini vurgulamaktadır. Doğal dil kullanımı, öğrenenlerin ezberci öğrenmeden gerçek amaçlı dil kullanımına geçerek anlamlı iletişim kurmalarını sağlamıştır. Ayrıca, öğrencilerin öğrenme süreçlerini kontrol etme özgürlüğünden faydalanmasıyla, öğrenen özerkliği dil ediniminde kilit bir rol oynamıştır (Radenski, 2009; Rancière, 1991; Stefanou vd., 2004). Çalışma ayrıca, hem dil yeterliliğini hem de topluluk katılımını arttıran sosyal etkileşimlerin ve akran destekli öğrenmenin değerini vurgulamaktadır (Hellermann ve Cole, 2009; Kaoropthai vd., 2019; Chun ve Cennamo, 2022). Bu bulgular; özerkliği, akran desteğini ve sosyal katılımı teşvik etmenin dil öğrenme ortamlarını önemli ölçüde iyileştirebileceğini göstermektedir.

Sonuç ve Öneriler

Bulgular, programın destekleyici, öğrenci merkezli ortamına atfedilen öğrencilerin konuşma performansı, akademik gelişimi, sosyal etkileşimi ve psikolojik refahında önemli gelişmeler olduğunu ortaya koymuştur. Bu sonuçlar, benzer müfredatı destekleyen etkinliklerin standart İngilizce müfredatına entegre edilmesinin öğrenci katılımını, güvenini ve bütünsel gelişimini arttırabileceğini, aynı zamanda daha güçlü iletişim becerilerini teşvik edebileceğini ve örgün eğitim ile pratik dil kullanımı arasındaki boşluğu doldurabileceğini göstermektedir.

Mevcut İngilizce müfredatı büyük sınıf mevcutları, kısıtlı ders saatleri ve aşırı yapılandırılmış ders kitabı içeriği ile sınırlı olduğundan, müfredatı destekleyen konuşma programları dil öğrenenlere özgün ve anlamlı konuşma pratiği sağlamak için hayati önem taşımaktadır. Bu çalışma, bu tür programların temel İngilizce müfredatıyla birlikte uygulanmasını, öğretmenlerin daha özgün dil içeriklerini entegre etmeye teşvik edilmesini ve dil öğretiminde dilsel biçimden ziyade iletişim ve beceri entegrasyonunu vurgulayan bütünsel bir yaklaşım benimsenmesini önerir.

Appendix 1

Extracurricular Speaking Program

Inside-School Sessions (Weeks 1, 3, 5, 7, 9, 11)

Instructor-led sessions were held in the classroom every other week and focused on explicit skill development through structured speaking and listening activities. Each session integrated a metacognitive component-students planned, monitored, and reflected on their learning. Activities included:

Listening for Key Information. Short audio/video prompts (e.g., announcements, interviews) where students identified main points and supporting details.

Making Requests. Role-plays in varied contexts (e.g., asking for directions, requesting help in a store, clarifying instructions).

Discussion Activities. Group discussions on familiar topics (e.g., hobbies, school life) followed by "gist summaries" to confirm understanding.

Expressing Opinions & Feelings. Guided debates and opinion-sharing tasks, encouraging clear expression on everyday topics.

Turn-Taking. Structured round-table discussions where students practiced listening actively and building on peers' contributions.

Presentations. Short presentations tailored for specific audiences (e.g., classmates, younger students), with peer feedback on clarity and tone.

Out-of-School Group Meetings (Weeks 2, 4, 6, 8, 10, 12)

Out-of-school meetings were led by student group leaders at self-selected locations (cafés, libraries, parks). These sessions allowed students to apply skills in a less formal, peer-driven environment, reinforcing independence and collaboration. Activities were pre-planned during the previous inside-school session and included:

Discussion Circles. Students discussed a given topic, applying turn-taking strategies and encouraging multiple viewpoints.

Real-Life Simulation Tasks. Practice scenarios such as ordering food, making a booking, or giving tourist directions to one another.

Peer Question Time. Each student prepared and asked questions on a set theme, practicing clarity and appropriateness in varied contexts.

Information Exchange Tasks. One student explained a process or gave instructions while others asked clarifying questions.

Reflection. Group leaders facilitated a short reflective conversation on what communication strategies worked well and what could improve.

Appendix 2

Semi-Structured Interview Questions

Experiences

1. Can you describe your initial feelings or expectations when you first decided to join the extracurricular speaking program?
2. Think about a typical session. What is it like to be part of the program? Can you walk me through what you do and how you feel during that time?
3. Compared to your regular English classes, what are the most significant differences you have noticed in the extracurricular speaking program? How did these differences affect your participation?
4. Have you encountered any challenges or difficult moments while participating in the program? If so, what were they, and how did you try to overcome them?
5. In what ways has your experience in the program changed over time since you started?

Benefits and Impact

6. Since joining the program, in what specific ways do you feel your English speaking skills have improved?
7. Outside of the program—perhaps in your regular classes, or even in social situations—can you share an example of a time when you used a skill or felt more confident because of your participation in the program?
8. Beyond language skills, do you feel this program has helped you develop any other skills, such as critical thinking, teamwork, or confidence in general? If so, how?
9. Based on your experience, if you could make one suggestion to improve or change the extracurricular speaking program, what would it be and why?"

International Journal of Curriculum and Instructional Studies

15(*2*), 2025, 132-154

www.ijocis.com

Relationships Among Preservice Teachers' Professional Identities, Teacher Self-Efficacy Beliefs and Teaching Motivations*

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Keywords

Teacher identity
Teaching motivation
Teacher self- efficacy beliefs
Preservice teachers

Article Details:

Research Article

Received : 30-12-2024
Accepted : 11-11-2025
Published : 31-12-2025

DOI: 10.31704/ijocis.1609811

Abstract

This study examines the relationships among preservice teachers' (PTs) professional identities, teacher self-efficacy (TSE) beliefs, and teaching motivations. The sample consisted of PTs studying in the 4th grade at Bolu Abant İzzet Baysal University (BAIBU) Faculty of Education in Türkiye during the fall semester of the 2019–2020 academic year. Data were collected using the Early Teacher Identity Measure, the Teacher's Sense of Efficacy Scale, and the Motivation to Teach Scale. The findings revealed that PTs' professional identity levels were high, their self-efficacy beliefs were quite sufficient, and their motivation to teach was at a moderate-to-high level. Correlation analyses showed a positive, moderate, and significant relationship between professional identity and both TSE beliefs and teaching motivation. Moreover, TSE beliefs were also positively and moderately associated with teaching motivation. These findings suggest that a well-structured teacher education program may contribute to the development of PTs' professional identities and enhance their confidence in teaching roles. Professional identity, self-efficacy, and teaching motivation are interrelated constructs evolving dynamically during teacher education. Consequently, fostering reflective practices and supportive environments in teacher education programs may enhance PTs' readiness and enthusiasm for teaching. The findings have both practical and theoretical implications for the design of teacher education curricula, emphasizing the need to integrate identity development, self-efficacy building, and motivational support.

To cite this article: Başdal, M., & Özen, R. (2025). Relationships among preservice teachers' professional identities, teacher self-efficacy beliefs and teaching motivations. *International Journal of Curriculum and Instructional Studies, 15*(2), 132-154. https://doi.org/10.31704/1609811

* This study is based on the first author's M.A. thesis completed under the supervision of the second author.

Introduction

Teacher education and training are vital in a society where information is growing, and technology is advancing at an unprecedented rate. Teachers must adjust to these developments as learning facilitators by incorporating new teaching strategies into their everyday practices. To guarantee that teachers continue to be effective in their positions and are able to address the various requirements of their students, they need continual professional development. High levels of knowledge generation and simpler transfer, which support learning and development, are characteristics of the information age (Öğüt, 2003). Through the development and transmission of information throughout generations, ensuring high-quality education plays a critical role in promoting both individual and societal growth. One of the most important channels for the creation and dissemination of information is education, which prepares competent people to impart knowledge to others. Teachers are essential in this context because their impact goes beyond just imparting knowledge; it also shapes the classroom atmosphere and encourages student participation. A teacher's professional identity, attitudes, and beliefs are all crucial components of their position in education, thereby they all have a noteworthy effect how well students perform in the classroom. Therefore, enhancing educational outcomes and creating a pleasant atmosphere for learning requires an understanding of and commitment to these elements. Jones (1989) states that the teaching process is a process that develops depending on personal factors and argues that these personal factors should be fully revealed to create an influential teaching atmosphere. Consequently, it is posited that gaining insight into the personal characteristics of educators may enhance our understanding of the education-teaching process. Motallebzadeh and Kazemi (2018) point out that professional identity is based on several factors like experience, belief, value, motivation, and qualification. From this point of view, it is crucial for teacher education to examine how experience, decisions, values, motives, and credentials shape professional identity.

Understanding teacher professional identity (henceforth TPI) is critical for comprehending the essence of teaching as a profession. It is commonly acknowledged that preservice teachers (henceforth PTs) experience major changes in their professional identities across their teacher education journey and their transition into teaching. These changes occur as they advance in their careers (Alsup, 2006). In recent years, teacher identity has evolved as a unique study subject, with varied definitions among studies in the teacher education and training field (Beijaard et al., 2004). Clarifying this notion is especially difficult because it directly influences how teachers approach learning and professional development (Beauchamp & Thomas, 2009). Furthermore, teacher identity is flexible and constantly formed by classroom interactions, making it impossible to describe in a fixed or linear manner (Duru, 2006; Flores & Day, 2006; Hoffman-Kipp, 2008). Lasky (2005) defines TPI as a self-awareness of how teachers see themselves in the context of teaching. Ultimately, it is a dynamic socialization process that is continually growing and multidimensional, as acknowledged by both the individual and society.

Self-efficacy is crucial in teacher education as well. According to Bandura (1997), the notion refers to one’s capacity in organizing and performing the necessary actions to reach defined goals. Dellinger et al. (2008) identify the same term as the extent to which people believe they can successfully carry out certain teaching duties to an adequate standard in a specific

situation. Therefore, it can be contended that these types of beliefs are valuable for teacher educators and researchers, as they illuminate the foundational concepts of teachers' self-beliefs about what could be done efficiently in the classroom environment. Tschannen-Moran and Woolfolk Hoy (2007) view the same term as an important concept, as it can affect teachers' pedagogical decisions and emotional states. In addition, this concept has a vital effect on their commitment to teaching and their practices in the classroom atmosphere (Chesnut & Burley, 2015; Morris et al., 2017). The social cognitive theory posits that an individual's anticipated self-efficacy beliefs. impact their attitudes regarding their goals, interests, and work-related activities, including teaching in a classroom. It holds that positive accomplishments in a certain field are seen as successful learning experiences, which boost self-efficacy. (McLennan et al., 2017). Clark & Newberry (2019) state that in latest years, scholars have concentrated on investigating examining the structure of the interconnectedness among teacher self-efficacy (henceforth TSE), behaviours, and overall effectiveness.

One could assert that the first concept related to the TPI is TSE beliefs. Kelchtermans (2005, 2009) seems to use the term "self-understanding" when mentioning the professional identity of teachers. Kelchtermans (2009) argues that this self-perception consists of five elements: "teachers' self-image, their self-esteem, their motivation at the workplace, their perceptions about the future time, and their task perceptions". Canrinus et al. (2012) argue that Kelchtermans's (2005, 2009) teachers' self-esteem and self-image are fundamentally related to their self-efficacy beliefs, which might be viewed as a determinant of TPI. In their research, Canrinus et al. (2012) evaluate the elements of teacher identity as self-efficacy beliefs, job satisfaction, motivation, and commitment. Similarly, Hong (2010) argues that a key element of TPI is TSE.

Motivation plays a crucial role and is one of the subjects that are frequently studied in the field of education. As outlined by Ryan & Deci (2000), motivational dynamics that propel the teacher to teach influence achieving educational goals; therefore, societies aiming to develop need teachers who desire to develop themselves and have a high motivation to teach. Thomson et al. (2012) argue that, considering the need for influential teaching, it is essential to comprehend the factors that motivate prospective teachers to pursue a career in education and how their beliefs about teaching align with these motivations. Thomson et al. (2012) continue that the literature in this area is not considered sufficient on why individuals prefer teaching, their motivation to start the profession, how their beliefs about teaching are related, and how these factors can affect their decision to continue teaching as a profession. Therefore, it is considered that understanding PTs' motivation for teaching in conjunction with their educational beliefs will support a better understanding of prospective teachers' teaching practices in the future and attitudes towards teaching.

Teaching motivation is thought to be related to the TPI. It is crucial for them to be motivated towards the teaching profession and teaching action so the advancement of professional identity in teachers might be realized effectively throughout teacher education. Motivation to teach is a vital element of professional identity, as it is based on the perception of teacher's role, competencies, and insights into the requirements of the job. Yenilmez et al. (2018) state that among the elements which affect PTs' teaching profession qualifications, PTs' teaching motivation is a powerful forecaster of their behaviour in the teaching profession. Similarly,

Butler (2007) states that the teachers' development professionally throughout the educational process and while teaching is related to teachers' motivation to teach.

Reviewing the body of literature on teaching motivation reveals a clear association between motivation and self-efficacy beliefs. For example, in the self-determination theory, it is stated that the self-efficacy perceptions of an individual are crucial to their intrinsic motivation level (Ryan & Deci, 2000), while Bandura (1993) states that these beliefs about self-efficacy play a crucial role in motivation. In addition to these, Canrinus et al. (2012) state that self-efficacy is generally defined as a crucial part of the term motivation, that the relevance of self-efficacy to motivation pertains to behavioural changes of the individual, and that self-efficacy is used as a criterion for motivation in some studies (Ciani et al., 2008). Similarly, Sinclair et al. (2006) show that prospective teacher motivation is greatly influenced by how the perceptions teachers hold about their instructional abilities (self-efficacy) and the potential outcomes their teaching can produce (outcome expectations). Therefore, as stated by the researchers above, self-efficacy could be generally related with motivation.

Training of teachers in the pre-service period is one of the concepts that maintains its importance in the field of teacher training. Therefore, the place of the teacher is constantly being researched (Güzel Candan & Evin Gencel, 2015). Knowing the individual and professional characteristics of teachers throughout both the pre-service training phase and the in-service experience is regarded as very important because it could have several functional contributions to the education of PTs in teacher education and the society in which they live. Additionally, it could be taken into consideration that the findings related to the characteristics of teachers will enable the reshaping and improvement of these educational programs. With the improved education programs, more qualified teachers will be trained, and qualified individuals will be trained, and teachers will contribute to the shaping and enhancement of the environment in which they reside.

Despite the vast literature on teacher professional identity, self-efficacy, and motivation, research into the interconnectedness of these constructs among preservice teachers is scarce, particularly in the Turkish teacher education environment. Previous research (e.g., Beauchamp & Thomas, 2009; Butler, 2007; Chesnut & Burley, 2015; Menon, 2020) has either studied these variables independently or concentrated on in-service teachers, creating a gap in understanding how they interact and collaborate throughout the pre-service teacher education. This study will provide a comprehensive understanding of the professional identity of the PTs. Therefore, in line with the findings, this study is expected to facilitate PTs' identity development professionally and the improvement of teacher training programs.

This study is guided by two primary objectives. The foremost objective is to scrutinize PTs' teacher professional identity, teacher self-efficacy beliefs and teaching motivation levels. The second endeavour is to analyse the interconnections among PTs' professional identities, teacher self-efficacy beliefs, and teaching motivations. Therefore, the following research questions are posed within the framework of the current study:

(1) What are the pre-service teachers' professional identity, teacher self-efficacy beliefs and teaching motivation levels?

(2) Are there significant relationships among pre-service teachers' professional identity levels, their self-efficacy beliefs, and teaching motivations?

Method

Research Design

This study employs a descriptive approach utilizing a correlational survey design, which requires the collection of data to determine certain characteristics of a group.

Sample

The sample of the research was 4th-grade PTs (n=651) who were selected by random sampling from the PTs at BAIBU Faculty of Education (n=1064). Of the 458 PTs, 71.67% were female (n=329) and 28.33% were male (n=129). 22.54% (n=144) of them were Science Teaching, Computer and Instructional Technologies Teaching and Mathematics Teaching, 19.87% (n=127) were in Special Education Teaching and Psychological Counseling and Guidance, 16.59% (n=106) are in Turkish Language Teaching and English Language Teaching, 23.79% (n=152) are in Pre-School Teaching and Classroom Teaching, 17.21% (n=110) are in Social Studies Teaching, Art and Music Teaching departments.

Data Collection Instruments

In this study, Personal Information Form, Early Teacher Identity Measure, Teacher Self-Efficacy Scale and Motivation to Teach Scale" were used.

Personal Information Form. In this form, questions aimed at revealing the demographic characteristics of PTs (gender, type of high school graduated, department of education and academic grade average) were included.

Early Teacher Identity Measure (ETIM). ETIM developed by Freiesen & Besley (2013) and adapted into Turkish by Arpacı & Bardakçı (2015) was employed to assess the professional identity of PTs. This was a 5-point Likert-type scale with response options from 1 (strongly disagree) to 5 (strongly agree). The researchers found Cronbach alpha values as 0.80, 0.81 and 0.74, 0.93 for "confidence in becoming a teacher (CBT), self-categorization as a teacher (SCT), participation as a teacher (PT)" subscales and whole scale, respectively. The analysis in this study revealed Cronbach alpha values as 0.78, 0.80 and 0.74 for CBT, SCT, and PT subscales, respectively. Additionally, the Cronbach's Alpha value for the whole scale is 0.89. The concordance values obtained from the confirmatory factor analysis ($\chi 2$=462.05, sd=116, $\chi 2$/sd=4.25, RMSEA=0.071, GFI=0.92, SRMR= 0.048, NFI= 0.90, CFI=0.92) show that the scale's construct validity was ensured.

Teacher Self-efficacy Scale (TSES). TSES developed by Tschannen-Moran and Woolfolk Hoy (2001) and adapted into Turkish by Çapa et al. (2005) was utilized to determine PTs self-efficacy beliefs. This was a 9-point Likert type scale with response categories from 1 (nothing) to 9 (a great deal). The researchers reported Cronbach alpha values of 0.82 for efficacy for student engagement (ESE), 0.86 for efficacy for instructional strategies (EIS), and 0.84 for efficacy for classroom management (ECM), with an overall scale value of 0.93. The analysis in this study revealed Cronbach alpha values as 0.86, 0.89, 0.89 and 0.95 for ESE, EIS, and ECM subscales and the whole scale respectively. In the present study, the confirmatory factor

analysis results ($\chi2$=1025.45, sd=247 $\chi2$/sd=4.15, RMSEA=.070, GFI= 0.88, NFI= 0.90, SRMR= 0.041, CFI= 0.92) demonstrate that the scale's construct validity was maintained.

Motivation to Teach Scale. Motivation to Teach Scale developed by Kauffman et al. (2011) and adapted into Turkish by Güzel Candan & Evin Gencel (2015) was employed to determine the teaching motivation levels of PTs. This was a 6-point Likert-type scale with response categories 1 (strongly disagree) to 6 (strongly agree). The researchers reported Cronbach alpha values of 0.79 for external motivation and 0.90 for internal motivation, with an overall scale value of 0.92. The analysis in this study revealed Cronbach alpha values as 0.75, 0.78 and 0.81 for external motivation, internal motivation, the whole scale, respectively. Confirmatory factor analysis results for this study ($\chi2$=141.99, sd= 30, $\chi2$/sd=4.73, RMSEA=0.076, GFI=0.96, NFI= 0.93, SRMR= 0.045, CFI= 0.94) point out that the scale's construct validity was ensured.

Data Collection

Data for this study were compiled throughout the autumn semester of the 2019-2020 academic year. All participants were supplied with detailed descriptions of the research objectives, the guidelines for their involvement, and the fact that joining the study was entirely voluntary. Furthermore, the researcher was available to clarify any doubts expressed by participants during the data collection. The application was completed in approximately 30 minutes during the lesson. Authorization for this research was issued by the institutional review board.

Data Analysis

Data analysis was conducted via the SPSS-20 software tool, assessing reliability using Cronbach's alpha. Additionally, confirmatory factor analysis was performed through LISREL 8.80 package program. Kolmogorov-Smirnov values of the scales were examined to see whether the data were distributed normally. Considering the non-normal distribution of the data, Spearman rank difference correlation coefficient analysis was used.

Findings

Professional Teacher Identity

The findings of the descriptive analysis are presented in Table 1 below. While interpreting the findings about the whole scale and its sub-dimensions, the arithmetic mean values of "4.21-5.00 - very high, 3.41-4.20 - high, 2.61-3.40 - moderate, 1.81-2.60 - low, 1.00-1.80 - very low" were taken into consideration. In addition, when other studies using the same scale (Karatepe & Akay, 2020; Alkış et al., 2019; Ulubey et al., 2018) were examined, it is seen that the above-mentioned value ranges served as the reference point in the analysis of descriptive statistics in these studies, and therefore, the value ranges specified in the mentioned studies were used as a reference in the interpretation of the findings obtained from this study.

According to Table 1, the arithmetic mean scores for "Confidence in Becoming a Teacher" ($\bar{X}$ = 4.04), "Self-Categorization as a Teacher" ($\bar{X}$ = 3.91), and "Participation as a Teacher" ($\bar{X}$ = 4.12) subscales were all at a high level. Overall, the scale's mean score was also at a high level ($\bar{X}$ = 4.03), indicating that PTs demonstrated a high level of professional identity across the scale and its subscales.

Table 1

Descriptive Statistics of the Professional Identities of PTs

Factor	*N*	$\bar{X}$	*Ss*	*Minimum*	*Maximum*
CBT	639	4.04	.64	1.00	5.00
SCT	639	3.91	.72	1.00	5.00
PT	639	4.12	.53	2.33	5.00
Whole Scale	639	4.03	.55	1.71	5.00

Teacher Self-Efficacy Beliefs

The findings of the descriptive analysis are presented in Table 2 below. While interpreting the findings about the whole scale and its sub-dimensions, the arithmetic mean values of "1.00-2.60 - insufficient, 2.61-4.20 - slightly sufficient, 4.21-5.80 - somewhat sufficient, 5.81-7.40 - quite sufficient, 7.41-9.00 - very sufficient" were taken into account. In addition, when other studies using the same scale (Arslan, 2019; Ercan et al., 2017; Yeşilyurt, 2013) were examined, it is seen that the above-mentioned value ranges served as the reference point in the analysis of descriptive statistics in these studies, and therefore, the value ranges specified in the aforementioned studies were used as reference in the interpretation of the findings obtained from this study.

When Table 2 is examined, the arithmetic mean score of "Efficacy for student engagement" subscale was at quite sufficient level ($\bar{X}$=6.87), and the arithmetic mean score of "Efficacy for classroom management " subscale was at quite sufficient level ($\bar{X}$=6.85), and the arithmetic mean score of "Efficacy for instructional strategies " was at quite sufficient level ($\bar{X}$= 6.92). It can be stated that that the arithmetic mean score of the whole scale was at quite sufficient level ($\bar{X}$=6.88).

Table 2

Descriptive Statistics of PTs' Teacher Self-Efficacy Beliefs

Factor	*N*	$\bar{X}$	*Ss*	*Minimum*	*Maximum*
ESE	639	6.87	1.01	3.13	9.00
ECM	639	6.85	1.08	3.25	9.00
EIS	639	6.92	1.06	3.38	9.00
Whole scale	639	6.88	0.99	3.25	9.00

Teaching Motivation

The findings of the descriptive analysis are presented in Table 3 below. While interpreting the findings about the whole scale and its sub-dimensions, the arithmetic mean values of "1.00-1.83 - strongly disagree, 1.84-2.67 - disagree, 2.67-3.50 - somewhat disagree, 3.51-4.33 - somewhat agree, 4.34-5.16 - agree, 5.17-6.00 - strongly agree" were considered. In addition, when other studies using the same scale (Çelik & Terzi, 2017; Gün & Turabik, 2019) were examined, it is seen that the above-mentioned value ranges were used in the analysis of descriptive statistics in these studies, and therefore, the value ranges specified in the mentioned studies were used as reference in the interpretation of the findings obtained from this research.

As illustrated in Table 3, the mean score for "External Motivation" was at a moderate-low level ($\bar{X}$ = 3.22), while "Internal Motivation" was at moderate-high level ($\bar{X}$=4.15). Thus, the overall motivation score was moderate-high ($\bar{X}$ =3.78).

The relationships among PTs' professional identities, TSE and teaching motivations were analyzed by Spearman rank difference correlation coefficient. Table 4 displays the findings in relation to this question.

Table 3

Descriptive Statistics on PTs' Teaching Motivation

Factor	*N*	$\bar{X}$	*Ss*	*Minimum*	*Maximum*
External Motivation	639	3.22	1.11	1.00	6.00
Internal Motivation	639	4.15	.99	1.00	6.00
Whole Scale	639	3.78	.88	1.00	6.00

Correlational Findings

Table 4 indicates a positive, statistically significant relationship between PTs' early teacher identity levels and their TSE levels. A positive, moderate level, and significant relationship was observed between PTs' professional identity and both "Efficacy for Classroom Management" ($r = 0.55$, $p < 0.05$) and "Efficacy for Instructional Strategies" ($r = 0.55$, $p < 0.05$) subscale scores.

The analysis revealed positive, moderate level, and significant relationships between PTs' self-efficacy beliefs and the Early Teacher Identity Measure subscales: "Confidence in becoming a teacher" ($r = 0.54$, $p < 0.05$), "Self-categorization as a teacher" ($r = 0.56$, $p < 0.05$), and "Participation as a teacher" ($r = 0.50$, $p < 0.05$). Additionally, PTs' professional teacher identity levels showed a positive, moderate level, and significant correlation with their self-efficacy beliefs ($r = 0.61$, $p < 0.05$).

Furthermore, Table 4 indicates a positive, low-level, and significant relationship between PTs' professional identity levels and the "External motivation" subscale of the Motivation to Teach scale ($r = 0.18$, $p < 0.05$). Conversely, there was a positive, moderate-level, and significant relationship with "Intrinsic motivation" subscale ($r = 0.59$, $p < 0.05$).

According to Table 4, there was a positive, moderate level, and significant relationship between PTs' teaching motivation levels and the "Confidence in becoming a teacher" subscale of the Early Teacher Identity Measure ($r = 0.42$, $p < 0.05$). Similarly, there were significant relationships with the "Self-categorization as a teacher" subscale ($r = 0.44$, $p < 0.05$) and the "Participation as a teacher" subscale ($r = 0.42$, $p < 0.05$). Additionally, a positive, moderate level, and significant relationship was found between PTs' professional identity levels and their teaching motivation levels ($r = 0.48$, $p < 0.05$).

Table 4 illustrates a positive, low-level, and significant relationship between PTs' TSE belief levels and the "External motivation" subscale of the Motivation to Teach Scale ($r = 0.14$, $p < 0.05$). In contrast, a positive, moderate, and significant relationship was observed with the "Internal motivation" subscale ($r = 0.42$, $p < 0.05$). Moreover, PTs' teaching motivation levels demonstrated moderate positive relationships with the "Efficacy for Student Engagement" ($r = 0.35$, $p < 0.05$), "Efficacy for Classroom Management" ($r = 0.33$, $p < 0.05$), and "Efficacy for Instructional Strategies" ($r = 0.32$, $p < 0.05$) subscales of the TSES. Additionally, a moderate positive correlation existed between PTs' TSE belief levels and their teaching motivation levels ($r = 0.35$, $p < 0.05$).

Table 4

The Relationships Among PTs' Professional Identity, Teacher Self-Efficacy Beliefs and Teaching Motivations

		1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1	r	1										
	p	.										
2	r	.75	1									
	p	.00	.									
3	r	.59	.62	1								
	p	.00	.00	.								
4	r	.90	.90	.82	1							
	p	.00	.00	.00	.							
5	r	.54	.55	.54	.62	1						
	p	.00	.00	.00	.00	.						
6	r	.49	.51	.44	.55	.79	1					
	p	.00	.00	.00	.00	.00	.					
7	r	.51	.51	.44	.55	.82	.82	1				
	p	.00	.00	.00	.00	.00	.00	.				
8	r	.42	.56	.50	.61	.92	.93	.94	1			
	p	.00	.00	.00	.00	.00	.00	.00	.			
9	r	.17	.18	.13	.18	.11	.16	.13	.14	1		
	p	.00	.00	.00	.00	.00	.00	.00	.00	.		
10	r	.50	.54	.53	.59	.44	.38	.38	.42	.41	1	
	p	.00	.00	.00	.00	.00	.00	.00	.00	.00	.	
11	r	.42	.44	.42	.48	.35	.33	.32	.35	.78	.86	1
	p	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.

**p<,05*

1: "Confidence in becoming a teacher", 2: "Self-categorization as a teacher",
3: "Participation as a teacher" 4: "Early Teacher Identity Measure"
5: "Efficacy for student engagement", 6: "Efficacy for classroom management",
7: "Efficacy for instructional strategies" 8: "Teacher Self-Efficacy Scale",
9: "External motivation", 10: "Internal motivation", 11: "Motivation to Teach Scale"

Discussion

The findings showed that PTs' professional identity levels were high, their self-efficacy beliefs were quite sufficient, and their motivation to teach was at a moderate-to-high level. Correlation analyses showed a positive, moderate, and significant relationship between professional identity and both TSE beliefs and teaching motivation.

One possible explanation for the high levels of professional identity observed among PTs is that the program they undergo positively affects the formation, change and improvement of their professional identities. Krzywacki (2009) points out that the core purpose of teacher education is to prepare PTs to gain competence and become effective teachers and to serve as a foundation for further professional development processes. The findings emphasize that professional identity formation is closely related to the experiences and guidance and the importance of conscious planning of curriculum design. A second reason may be that PTs perceive themselves as exhibiting the attributes and competencies that a teacher should have within the structure of the specific training program before starting their profession. Similarly, Yaşar et al. (2013) state that the factors that constitute the identity of a teacher are individual characteristics, willingness to teach, university education, school experience lessons, and that

PTs begin to see themselves as teachers as of the third grade. Therefore, it can be considered that personal factors may also be at the forefront. In this respect, it can be concluded that they feel ready for the teaching as a profession.

Considering the obtained results, we may claim that the education programs that the PTs have contributed positively to their perceived self-efficacy in teaching roles. Thus, well-structured programs can play a vital role in enabling PTs to cope with classroom challenges with confidence and competence. In fact, Çapa et al. (2005) state that having a high teaching self-efficacy belief is necessary to have positive behaviors towards the teaching process and that PTs should feel that they are at a sufficient level in order to be effective in the teaching process. High self-efficacy beliefs are also related to the effective educational environment, as well as to the PTs' belief that they can fulfill the responsibilities of the profession successfully. Similarly, Şahin Taşkın & Hacıömeroğlu (2010) state that when the teaching process is carried out successfully, the expectations of PTs about their teacher beliefs of self-efficacy increase. Additionally, teacher education programs seek to foster PTs' self-beliefs (Lin & Gorrel, 1998) and provide them with a sense of competence for their profession (Soodak & Podell, 1996). Similarly, Temiz & Topçu (2013) state that the qualifications and features that a prospective teacher must possess with the aim of becoming an effective teacher soon are gained thanks to the teacher training programs. Moreover, Oğuz (2009) argues that by their senior year, PTs should have reached a high level of proficiency through their program experiences.

Deci et al. (1991) state that when individuals are internally motivated, they will exhibit their behaviors with pleasure and satisfaction, of their own will, without any outside intervention, while Kauffman et al. (2011) state that when the internal motivation is high, the individual exhibits the behavior without a certain expectation. On the other hand, the situation that the internal motivation is higher than the external motivation can be explained as teaching is a profession that provides spiritual satisfaction away from material interests. With a similar point of view, Ayık & Ataş (2014) and Gün & Turabik (2019) argue that PTs with higher internal motivation will do the teaching profession lovingly and without making any financial gain, and therefore they will be successful in their profession. In addition, Evin Gencel & Ilıman (2019) and Kim & Cho (2013) state that teachers with high intrinsic motivation are responsible individuals in the teaching profession and approach their profession with respect. As a matter of fact, Roth et al. (2007) state that teachers with high internal motivation encourage positive behaviors in the educational process. Therefore, regarding all the mentioned views, the fact that the PTs' intrinsic motivation levels are higher compared to the extrinsic motivation levels is an indicator of the fact that the PTs carry out their teaching profession in order to achieve internal satisfaction. It is possible to say that it is since they give importance to internal factors such as enjoying the teaching as a profession, being satisfied with the teaching itself and providing professional satisfaction.

The findings from the study confirmed a connection between the PTs' the teacher identity levels and their beliefs about TSE. Tournaki and Podell (2005) state that teachers' self-efficacy and professional identities work together to form their beliefs on the act of teaching, and this supports the findings obtained in the current study. In addition, Day et al. (2006) state that professional identities of teachers do not consist only of instructional characteristics, but are formed by the combination of individual, social, cultural and educational factors that make up TSE. With a similar point of view, Canrinus et al. (2012) state that self-efficacy, professional

fulfilment and motivational drive towards the profession and professional commitment of teachers should be investigated together when examining teachers' self-perceptions regarding their professional identities. Apart from the things which were mentioned above, Canrinus et al. (2012) report that fluctuations in teachers' self-efficacy and motivation levels are frequently regarded as important in the extant literature for teacher behavior and these changes represent teachers' personal views on the way they perceive themselves as professionals. Similarly, Hong (2010) argues that teachers' professional identities and their level of self-efficacy are related. Apart from this, researchers interested in professional identity (Rodgers & Scott, 2008; Zembylas, 2003) state that individual factors such as motivation, self-efficacy, personality, and emotions are crucial things that affect how teachers create their identities. According to Kelchtermans (2009), teachers' professional identity perception depends on their perceptions of themselves professionally, their views in school and classroom, and their interactions in these contexts. In this vein, it can be observed that PTs' beliefs that they can successfully fulfill a task in the context of teaching will contribute positively to their identity professionally. In addition, Wagoner (2011) states that because it is always being formed, professional identity does not have a stable structure and that it is constantly shaped and developed during the education process of the PTs. Therefore, it is possible to say that many individual and social factors are effective in the identity of PTs in a dynamic and developing state, and one contributing factor is the self-efficacy belief regarding teaching practices. PTs' enthusiasm and dedication to the field are impacted by their self-efficacy, which also affects how they approach their teaching jobs. Furthermore, manifesting a strong self-efficacy perception could help people overcome obstacles with more resiliency, which can eventually shape their professional identities.

As defined by Tschannen-Moran et al. (1998) TSE encompasses the confidence teachers have in their capacity to arrange and carry out actions required for the effective accomplishment of a given teaching assignment and based on Beijaard et al.'s (2004) articulation professional identity as the way teachers identify with and understand their professional roles one may assert that as TSE level rises, TPI will also rise. This connection shows that increasing teachers' confidence in their talents can improve how they view and participate in their roles. Furthermore, a stronger professional identity can boost instructors' self-efficacy, resulting in a mutually beneficial cycle of growth and development. As can be understood from both definitions, it is possible to say that the way of self-perception of the individual is at the forefront in professional identity and self-efficacy; therefore, as the self-assurance regarding one's capabilities increases, they can directly perceive themselves as a teacher in a positive way. Their increased dedication to their professional development is also fostered by this positive self-perception, which also increases their motivation for involvement in teaching activities. Moreover, a high degree of self-efficacy might result in more successful teaching methods, which will eventually improve student results.

Avraamidou (2014) argues that identity is impacted through a broad spectrum of determinants and is related to and shaped by several different elements. These elements consist of internal elements like emotions and beliefs (Settlage et al., 2009) and context-specific external elements (Menon, 2020). Beauchamp & Thomas (2009) focus on that considering the intricate nature of identity, cultivate a thorough understanding of it and the way identity is shaped requires examining several frameworks instead of a single framework. Similarly, Wagoner (2011) states that forming an identity for PTs is an ongoing, unstable structure that is affected by the contextual situations and is shaped by the experiences of PTs. Therefore, the

finding of this study supports the notion that TSE beliefs is among the related factors of PTs' professional identities.

Moreover, Chong et al. (2011) assert that identity represents an evolving process that develops gradually, encompassing the understanding of professional practices and the essential values, skills, and knowledge needed in the field, and it is based on personal teaching beliefs about how the individual will improve their teaching practices. Therefore, the beliefs regarding self-efficacy among PTs in teaching methodologies, classroom management, and facilitating student participation are a part of their beliefs about teaching and will also affect the enhancement of their professional identities. Supporting this view, Polat (2019) states that the concept of teacher identity is directly pertaining to TSE, teacher competencies, and willingness to teach. Therefore, it is possible to say that it is not the right approach to think of PTs' self-efficacy beliefs and professional identities as separate parts that progress independently of each other in the education process. It would be more accurate to consider them with a holistic approach, considering that they are parts that complement and integrate each other.

Reflecting on the results of the study with regards to PTs teachers' professional identity levels and teaching motivation levels Yenilmez et al. (2018) state that one factor influencing teacher qualifications is their motivation for teaching, and that teachers' motivation to teach is among the predictors of behaviors towards the teaching profession. Berger & Le Van (2018) and Canrinus et al. (2012) highlight the foundational role of motivation as a key element of teachers' professional identities. They believe that teachers' self-concept and dedication to teaching are greatly influenced by their motivation. Similarly, Ayık & Öztaş (2014) argue that PTs' motivation to teach is highly influenced by their perspectives about the teaching profession. Teacher motivation is further defined by Bennell (2004) as the psychological processes that mold teachers' actions in the direction of accomplishing learning objectives. According to Kutluca (2018), self-efficacy is not just a reflection of one's own ability but also a person's assessment of what they can achieve with those abilities. While Bandura (1993) recognizes self-efficacy as a crucial component in the motivation process, self-determination theory links self-efficacy to intrinsic motivation. Canrinus et al. (2012) characterize self-efficacy as a constituent of motivation, noting that research frequently employs it as a standard for evaluating motivation. According to Schepers et al. (2005), teachers' motivation precedes their level of self-efficacy.

According to Zimmerman (2000), those possessing high self-efficacy are better at managing motivational elements than people who have low self-efficacy. In a similar vein, Büyükduman (2006) asserts that motivation, thoughts, and emotions are influenced by self-efficacy. Pajares (2002) emphasizes the part that cognitive and affective components play in self-efficacy; Kutluca (2018) lists motivation as one of these factors. Kutluca (2018), who observes that strong self-efficacy boosts both cognitive processes and motivation, supports Bandura's (1993) theory that ties self-efficacy to cognitive, affective, decision-making, and motivational processes. These results provide evidence for the relationship between motivation and self-efficacy.

Conclusion and Implications

The findings indicated that PTs' professional identities were at a high level, their TSE levels were quite sufficient, and their teaching motivation was at a moderate-high level. The degrees of PTs' professional teacher identities and their perceptions of their self-efficacy levels were shown to be positively, moderately and significantly correlated. Additionally, a positive, moderate level and significant relationship between professional teacher identity levels and teaching motivation levels of PTs was found. As demonstrated by the results of the present study, the following suggestions might be proposed which can contribute to the field holistically.

During the process of establishing, cultivating, or reshaping professional identities, TSE beliefs and teaching motivation of PTs, a highly productive education-teaching environment can be provided to PTs. By emphasizing the importance of TPI, self-efficacy, and teaching motivation, educational programs can encourage PTs to take responsibility for their identity development. Such programs should aim to equip PTs with both subject knowledge and pedagogical skills, helping them feel prepared and enthusiastic about entering the teaching profession. Thus, as they step into the teaching profession, their self-confidence increases and their sense of professional responsibility is strengthened. With the importance given to TPI, TSE beliefs and teaching motivation in education programs of PTs, they can assume the responsibility of their professional identity development, feel well-educated in terms of field and pedagogical knowledge, and become ready to do the teaching profession equipped with a willingness to teach. Considering that in the construction and development of TPI, TSE beliefs and motivation to teach, besides teacher education programs, faculty members at universities and counselor teachers in PTs' school experience lessons have an impact (Fives et al., 2007; Hahl & Mikules, 2018). In this process, instructors at universities and counselor teachers in practice schools can support PTs to be effective teachers and to perceive and feel themselves as teachers. For instance, university instructors could incorporate activities in the curriculum that enable PTs to reflect on their developing identities and sense of self-efficacy. These activities might include classroom simulations, guided teaching experiences, and self-assessment tasks, which would allow PTs to evaluate and refine their abilities and motivations.

The results derived from the study indicated that PTs' professional identities were related to the variables of TSE beliefs and motivation to teach. Based on this result, TSE beliefs and teaching motivation variables can be considered together with professional identity in the creation and development of teacher education programs. Considering that TPI is in a structure that is shaped and developed during the teacher education program, the constantly evolving structure of professional identity can be positively supported by creating learning environments where PTs can perceive, define, and evaluate themselves as teachers during this process, and feel safe and comfortable. For example, teacher education programs can provide opportunities for PTs to engage in reflective practices, where they can assess their strengths and areas for growth. These reflective practices can help PTs become aware of their progress, as well as adapt their attitudes and strategies as they gain more teaching experience. The awareness that the professional identities, TSE beliefs and teaching motivations of the PTs during their education are not fixed, they are quite dynamic and open to change, and development can be brought to the PTs. Such interdisciplinary efforts could help instill in PTs the notion that professional identity, self-efficacy, and motivation are aspects of their careers

that will continue to grow and evolve. This perspective could foster a lifelong commitment to personal and professional development, encouraging PTs to view themselves as learners throughout their teaching careers. Collaboration can be made with the relevant departments of universities in order to bring this awareness to PTs, in the process of creating and developing teacher education programs, for this process to progress continuously and positively in PTs.

In conclusion, the study indicates that PTs' TPI, TSE beliefs, and motivation to teach are closely connected and significantly influence one another. By fostering a holistic approach to teacher education that addresses these components, programs can support PTs in developing a strong foundation for their careers.

Recommendations

This study is constrained by its reliance on data collected from a single university context and a data collection tool, limiting the generalizability of the findings. Thus, future studies could utilize PTs at varying grade levels as samples while maintaining the same variables. Similarly, individuals who are currently working as teachers can be selected as samples in future research. A longitudinal approach would also allow researchers to examine the specific stages at which TPI, self-efficacy, and motivation are most malleable and receptive to interventions, providing valuable data for the design of teacher education programs. Future research can be designed with a longitudinal method in order to focus on the formation and development stages of teacher identity and to reveal how its relationship with teaching motivation and TSE beliefs develops. The possible effects of teacher education programs can be investigated by collecting data on professional teacher identity, TSE beliefs and teaching motivation at the beginning and end. In future possible studies, the effect of TPI on and teaching motivation and TSE beliefs can be questioned. Important variables such as attitude towards the teaching profession, professional anxiety, professional commitment, possible selves, lifelong learning, personality traits, and characteristics of teacher education programs, which are believed to be connected to TPI, can be investigated by adding variables to future research. These variables could shed light on the broader influences that shape PTs' experiences, highlighting areas where teacher education programs could provide targeted support. In addition, in future studies, qualitative data collection methods such as interviews or observations can be used to examine in more depth the experiences and perceptions PTs'.

Author Contributions

Melek Başdal: Conceptualization, literature review, methodology, data collection, data analysis, writing-original draft, validation and interpretation,

Raşit Özen: Conceptualization, literature review, methodology, data collection, data analysis, writing-review and editing, validation and interpretation.

Declarations

Ethical Approval and Informed Consent

This study was approved by Bolu Abant İzzet Baysal University Institutional Ethical Review Board. All procedures were carried out in accordance with the protocols approved by the board. Written informed consent was obtained from the participants during the process for the publication and dissemination of their anonymized data.

Supplemental Material

No supplementary materials accompany this article.

Disclosure of AI Use

ChatGPT 5.1 was used for language editing purposes (improving expressions, grammar, and punctuation corrections). All scientific content, data analysis, and interpretations in this study were developed entirely by the authors.

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Uluslararası Eğitim Programları ve Öğretim Çalışmaları Dergisi
15(*2*), 2025, 132-154
www.ijocis.com

TÜRKÇE GENİŞ ÖZET

Öğretmen Adaylarının Mesleki Kimlikleri, Öğretmen Özyeterlik İnançları ve Öğretme Motivasyonları Arasındaki İlişkiler

Bu çalışma, öğretmen adaylarının mesleki kimlikleri, öğretmen özyeterlik inançları ve öğretme motivasyonları arasındaki ilişkileri incelemektedir. Araştırmanın örneklemi, 2019–2020 akademik yılı güz döneminde Türkiye'de Bolu Abant İzzet Baysal Üniversitesi (BAİBÜ) Eğitim Fakültesi'nde öğrenim gören 4. sınıf öğretmen adaylarından oluşmaktadır. Veriler, Mesleki Kimlik Ölçeği, Öğretmen Özyeterlik Ölçeği ve Öğretmen Motivasyonu Ölçeği aracılığıyla toplanmıştır. Bulgular, öğretmen adaylarının mesleki kimlik düzeylerinin yüksek, özyeterlik inançlarının oldukça yeterli ve öğretme motivasyonlarının ise orta-yüksek düzeyde olduğunu ortaya koymuştur. Korelasyon analizleri, mesleki kimlik ile hem TÖY inançları hem de öğretme motivasyonu arasında pozitif, orta düzeyde ve anlamlı ilişkiler olduğunu göstermiştir. Ayrıca, öğretmen özyeterlik inançlarının da öğretme motivasyonu ile pozitif ve orta düzeyde ilişkili olduğu bulunmuştur. Bu bulgular, iyi yapılandırılmış bir öğretmen yetiştirme programının, öğretmen adaylarının mesleki kimliklerinin gelişimine katkı sağlayabileceğini ve onların öğretim rollerine olan güvenlerini artırabileceğini düşündürmektedir. Mesleki kimlik, öğretmen özyeterliği ve öğretme motivasyonunun, öğretmen eğitimi sürecinde dinamik olarak gelişen ve birbiriyle ilişkili yapılar olduğu sonucuna varılabilir. Dolayısıyla, öğretmen yetiştirme programlarında yansıtıcı uygulamaların teşvik edilmesi ve destekleyici ortamların oluşturulması, öğretmen adaylarının öğretmenliğe yönelik hazır bulunuşluklarını ve istekliliklerini artırabilir. Bu bulgular, öğretmen eğitimi programlarının tasarımına yönelik önemli çıkarımlar sunmakta olup mesleki kimlik gelişimi, öğretmen özyeterliğin desteklenmesi ve motivasyonel unsurların programlara entegre edilmesi gerekliliğini vurgulamaktadır.

Giriş

Öğretmen eğitimi, hızlı bilgi artışı ve teknolojik gelişmelerin yaşandığı günümüzde, öğretmenlerin etkili birer öğrenme kolaylaştırıcısı olmalarını sağlamak için kritik öneme sahiptir. Öğretmenlik mesleği, sadece bilgi aktarımıyla sınırlı olmayıp öğretmenlerin bireysel, sosyal ve kültürel yönlerinin de önemli bir parçasıdır. Bu bağlamda, öğretmenlerin mesleki kimlikleri, sadece profesyonel yetkinliklerinden değil, aynı zamanda kişisel özelliklerinden, motivasyonlarından ve mesleğe karşı olan tutumlarından da etkilenmektedir. Öğretmen adaylarının mesleki kimlik gelişimi, öğretmenlik eğitim programlarıyla şekillenir ve bu süreç, adayların öğretmenlik mesleğine yönelik düşüncelerini, inançlarını ve değerlerini etkiler.

Öğretmenlik özyeterlik inançları, öğretmenlerin kendi öğretme becerilerine dair güvenlerini ifade eder ve bu inançlar, öğretme süreçlerinde başarıyı artıran önemli bir faktör olarak kabul edilir. Yüksek özyeterlik inançları, öğretmen adaylarının öğretmenlik mesleğine olan

bağlılıklarını artırırken mesleki kimliklerinin gelişimine de katkı sağlar. Ayrıca, öğretmen adaylarının motivasyonu da mesleki kimliklerini şekillendiren önemli bir faktördür. İçsel motivasyon, adayların öğretmenlik mesleğini manevi tatmin için yapmalarını sağlarken, dışsal motivasyon ise mesleklerine yönelik beklentilerini etkiler. İçsel motivasyonu yüksek olan öğretmen adayları, öğretmenlik mesleğini sevgiyle ve gönüllülükle yapmayı tercih ederler. Dışsal motivasyon ise, maddi kazanç ve sosyal statü gibi dışsal ödüllerle bağlantılıdır.

Bu çalışma, öğretmen adaylarının mesleki kimliklerinin, özyeterlik inançları ve motivasyonları ile nasıl etkileşimde bulunduğunu anlamayı hedeflemektedir. Ayrıca, öğretmen adaylarının bu üç faktör arasındaki ilişkinin, öğretmenlik mesleğine yönelik tutumlarını ve gelişim süreçlerini nasıl etkilediğini araştırmaktadır.

Yöntem

Bu araştırma, betimsel bir yaklaşımla ilişkisel tarama modeline dayanmaktadır. Çalışmaya, BAİBÜ Eğitim Fakültesinden 651 son sınıf öğretmen adayı katılmıştır. Veriler, 2019-2020 güz döneminde toplanmıştır ve katılım gönüllülük esasına dayanmıştır. Araştırmada "Kişisel Bilgi Formu", "Meslek Öncesi Öğretmen Kimliği Ölçeği", "Öğretmen Özyeterlik Ölçeği" ve "Öğretme Motivasyonu Ölçeği" kullanılmıştır. Ölçeklerin geçerlik ve güvenirlik analizleri Cronbach alfa değerleri ve doğrulayıcı faktör analizleriyle sağlanmıştır. Ölçeklerden elde edilen veriler SPSS-20 yazılımıyla analiz edilmiştir. Verilerin normal dağılım göstermemesi nedeniyle Spearman sıra farkı korelasyon katsayısı analizi uygulanmıştır.

Bulgular

Çalışmanın bulguları, öğretmen adaylarının mesleki kimlik, öğretmen özyeterlik inancı ve öğretim motivasyonu arasında güçlü bir ilişki olduğunu ortaya koymuştur. Öğretmen adaylarının yüksek öğretmen özyeterlik inancı seviyelerine sahip olmaları, kendilerini öğretmen olarak daha gelişmiş bir kimlik olarak görmelerine yol açmaktadır. Bu, öğretmenlik becerilerine duyulan güvenin, adayların öğretmen olarak kendilerini algılamalarını olumlu şekilde etkilediğini göstermektedir. Ayrıca, içsel motivasyonun, dışsal motivasyona kıyasla daha yüksek olduğu bulunmuştur. Bu durum, adayların mesleği sevme ve işten tatmin olma gibi içsel tatmin duygularıyla motive olduklarını, finansal kazanç gibi dışsal ödüllerden daha az etkilendiklerini göstermektedir. Çalışma, profesyonel kimliğin dinamik bir yapıya sahip olduğunu ve öğretmenlik eğitim süreci boyunca bireysel, sosyal ve eğitimsel faktörlerin etkisiyle şekillendiğini vurgulamaktadır. Bulgular, öğretmen eğitim programlarında güçlü profesyonel kimlikler geliştirmek için öğretmen adaylarının hem özyeterlilik inançlarının hem de motivasyonlarının desteklenmesinin önemini ortaya koymaktadır.

Tartışma

Araştırma, öğretmen eğitim programlarının öğretmen adaylarının mesleki kimliklerinin gelişiminde önemli bir rol oynadığını göstermektedir. Öğretmen adaylarının, öğretmenlik mesleği için gereken yetkinlikleri kazandıklarını ve öğretmenlik mesleğine hazırlanırken profesyonel kimliklerini şekillendirdiklerini belirtmektedir. Bunun yanı sıra, öğretmen adaylarının öğretmenlik mesleğine yönelik kendi yeterlilik algılarının, onların öğretim becerilerini ve mesleklerine olan bağlılıklarını artırdığı vurgulanmaktadır.

Araştırmanın bulguları, öğretmen adaylarının mesleki kimlik düzeylerinin yüksek olduğunu, çünkü öğretmenlik programlarında kazandıkları bilgi ve becerilerle kendilerini öğretmen olarak gördüklerini ortaya koymaktadır. Öğretmen adaylarının yüksek özyeterlik inançları, öğretme süreçlerinde başarılı olma beklentilerini artırmakta ve bu da onların mesleki kimliklerini pekiştirmektedir. Ayrıca, içsel motivasyonun dışsal motivasyona göre daha baskın olduğu bulunmuştur. İçsel motivasyon, öğretmen adaylarının öğretmenlik mesleğini maddi çıkarlar yerine manevi tatmin için yapmalarını sağlamakta, bu da onların mesleklerine olan sevgilerini ve bağlılıklarını güçlendirmektedir.

Çalışma, öğretmenlik özyeterlik inançları ve mesleki kimlik arasındaki ilişkinin, öğretmen adaylarının öğretme sürecine olan tutumlarını şekillendirdiğini ortaya koymaktadır. Özyeterlik inancı, mesleki kimliği güçlendiren, mesleğe yönelik öz saygıyı artıran ve öğretme sürecine bağlılığı teşvik eden bir faktör olarak öne çıkmaktadır. Bu bağlamda, öğretmen adaylarının özyeterlik inançları ile mesleki kimlikleri arasında karşılıklı bir ilişki bulunduğu ve bu ilişkiyi güçlendirecek eğitim programlarının önem taşıdığı sonucuna varılmaktadır.

Sonuç ve Öneriler

Araştırmanın sonuçları öğretmen adaylarının mesleklerine yönelik tutumlarının ve kimlik gelişimlerinin, öğretim yeterliliği inançları ve öğretim motivasyonlarıyla güçlü bir şekilde bağlantılı olduğunu göstermektedir.

Çalışmadan çıkarılan öneriler, öğretmen adaylarının profesyonel kimliklerini geliştirme sürecinde, eğitim programlarının öğretim yeterliliği inançları ve motivasyonu güçlendirmeye odaklanması gerektiğini vurgulamaktadır. Eğitim programları, öğretmen adaylarını sadece alan bilgisiyle değil, aynı zamanda pedagojik becerilerle de donatarak, onların öğretmenlik mesleğine hazırlıklı ve istekli olmalarını sağlayabilir. Bu bağlamda, öğretmen adaylarının profesyonel kimliklerini oluştururken, üniversite öğretim üyeleri ve okul deneyimi derslerindeki rehber öğretmenlerin de önemli bir rolü olmaktadır. Üniversite öğretim üyeleri, adayların gelişen kimliklerini ve yeterliliklerini değerlendirebileceği etkinlikler düzenleyebilir. Bu etkinlikler; sınıf simülasyonları, rehberli öğretim deneyimleri ve öz-değerlendirme görevleri gibi uygulamalarla desteklenebilir.

Öğretmen adaylarının profesyonel kimlikleri dinamik ve sürekli gelişen bir süreçtir. Bu süreçte, öğretim yeterliliği inançları ve öğretim motivasyonu gibi faktörler birbirini etkileyerek profesyonel kimlik gelişimine katkı sağlamaktadır. Öğretmen adaylarına, profesyonel kimliklerinin sadece eğitim programlarıyla şekillenmediği, bunun aynı zamanda deneyim ve etkileşimlerle de evrilen bir süreç olduğu bilinci aşılanmalıdır. Gelecek araştırmalar, öğretmen adaylarının profesyonel kimlik gelişimi ile öğretim yeterliliği inançları ve motivasyonları arasındaki ilişkinin zaman içindeki evrimini incelemeli ve eğitim programlarının bu süreçte nasıl daha etkili olabileceğini araştırmalıdır.

Son olarak, öğretmen adaylarının profesyonel kimlik gelişiminin, profesyonel kaygılar, mesleki bağlılık gibi önemli değişkenlerle ilişkili olduğu ve bu konularda yapılacak ek çalışmaların eğitim programlarını daha verimli hâle getirebileceği düşünülmektedir.

International Journal of Curriculum and Instructional Studies

15(*2*), 2025, 155-182

www.ijocis.com

A Bibliometric Analysis of Research on Curriculum Literacy

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Keywords

Bibliometric analysis
Curriculum
Curriculum literacy

Article Details:

Research Article

Received : 24-09-2025
Accepted : 12-12-2025
Published : 31-12-2025

DOI: 10.31704/ijocis.1790213

Abstract

The aim of this study is to conduct a comprehensive bibliometric analysis of curriculum literacy literature through a holistic perspective. Adopting a descriptive research design, the study utilizes the bibliometric analysis method. The data were obtained from the Web of Science (WoS) database through an extensive search conducted using the keyword "curriculum literacy" on May 27, 2025. The resulting dataset, consisting of 208 articles, was analyzed using Microsoft Excel, R software, and the Biblioshiny application. Covering publications between 1988 and 2025, this analysis reveals key trends in the field, prominent academic contributors, influential institutions, and the temporal evolution of research on curriculum literacy. The findings indicate a notable increase in academic output on this topic in recent years. Countries such as the United States, Australia, and the United Kingdom have emerged as leading actors shaping the field, both theoretically and practically. Higher education institutions, particularly in Australia and China, stand out due to their high levels of scholarly productivity and significant contributions to international research collaborations. Thematic analyses reveal that the concepts of "education," "information," and "curriculum" are among the most frequently addressed themes in the literature. In light of these findings, it is recommended that future research expand the scope of analysis by incorporating publications from additional databases to enable comparative assessments. Furthermore, enhancing international and interdisciplinary collaborations is likely to contribute to more comprehensive and impactful outcomes in the field of curriculum literacy.

To cite this article: Dede, O., & Ataseven, H. (2025). A bibliometric analysis of research on curriculum literacy. *International Journal of Curriculum and Instructional Studies, 15*(2), 155-182. https://doi.org/10.31704/1790213

Introduction

The term "literacy" is generally used to describe basic competencies such as reading, writing, and performing necessary tasks (Horton, 2008). However, advances in information and communication technologies have expanded traditional understandings of literacy (Kress, 2003). Examination of various definitions shows that literacy is not limited to reading and writing skills but also involves higher-order cognitive processes. In other words, literacy is closely related to an individual's social environment and everyday experiences (Fellowes & Oakley, 2020). The Organization for Economic Co-operation and Development (2000) conceptualizes literacy as a multifaceted competence that involves interpreting, appraising, and effectively employing written texts to function meaningfully in society, pursuing personal aspirations, and enhancing one's knowledge base and capacities. Kurudayıoğlu and Tüzel (2010) describe literacy as a skill required by the century in which societies exist, noting that as societal characteristics evolve over time, literacy is shaped accordingly.

Curriculum literacy, which began to appear in the literature in the 1980s, was initially influenced by Shulman's (1987) work that aimed to explain teachers' professional knowledge. In this early context, curriculum literacy was associated primarily with the organization of instructional materials and learning environments within the framework of teachers' curriculum knowledge. However, Ariav (1991) emphasized that limiting teachers' curriculum knowledge solely to material preparation and classroom organization was insufficient and therefore introduced curriculum literacy. The notion of literacy underlying this concept encompasses not only the skills of reading and writing but also the abilities to understand, interpret, and apply knowledge. Accordingly, curriculum literacy can be defined as the process of analyzing, making sense of, interpreting, and effectively implementing the curriculum through informed planning based on the understanding gained (Aslan, 2018). According to Aygün (2019), curriculum literacy involves a teacher's awareness of the curriculum, the ability to comprehend it, and the capacity to accurately reflect this understanding in the implementation process. Keskin and Korkmaz (2021) define curriculum literacy as the competence to possess knowledge about the curriculum, analyze and interpret it, evaluate it from a critical perspective, and implement it effectively in educational settings. Expanding upon these definitions, Aslan (2019) conceptualizes curriculum literacy as the ability to understand the structure and characteristics of the curriculum; identify the relationships among its components and evaluate the coherence among these components, as well as to determine the curriculum's relevance to contemporary demands and cultural contexts.

The quality of education is heavily influenced by the nature of the interaction between teachers and the curriculum (Aslan, 2018). Teachers assume various roles within instructional programs (Sünbül, 1996). Wiles and Bondi (2007) outline teachers' responsibilities regarding the curriculum as: determining learning tasks and outcomes, aligning learning outcomes with student competencies, planning the instructional process, implementing the official curriculum, receiving feedback to analyze the curriculum and instructional activities, and adapting the teaching process as necessary. For teachers to use the curriculum effectively in instructional activities, create appropriate learning environments, and succeed in educational processes, it is essential that they possess knowledge of and awareness about the curriculum and related concepts (Özkan, 2016), recognize the components of the curriculum, identify the relationships among these components, and comprehend the curriculum accurately (Aslan, 2019).

When examining educational practices, it is evident that the intended curriculum often differs from the implemented curriculum. Even when teachers within the same subject area follow the same curriculum, variations in implementation can occur (Bümen et al., 2014). These differences are influenced by numerous factors, including school resources, learning environments, lack of materials, teacher competencies, and decision-making (Aykaç & Ulubey, 2012; Çobanoğlu, 2011). To ensure that desired behaviors and outcomes are effectively achieved among students, the gap between the designed and implemented curriculum must be minimized (Büyükkaragöz, 1997; Karaman & Bakaç, 2018). Regardless of the quality of the curriculum itself, if it is not implemented correctly by teachers, the intended program goals cannot be attained, resulting in ineffective learning for students and a lack of program success (Aslan, 2018; Ogar & Awhen, 2015). Therefore, curriculum literacy competence is considered one of the fundamental skills that teachers and prospective teachers must possess (Aslan, 2018; Bolat, 2017; Gündoğan, 2019; Kahramanoğlu, 2019; Pinar et al., 1995).

When teachers possess curriculum literacy competence, the curriculum can be implemented as planned, program objectives can be achieved, the program can reach its intended success (Aslan, 2018), and, consequently, educational objectives can be met while enhancing the quality of education (Aslan, 2019). Moreover, having sufficient curriculum literacy allows teachers to overcome concerns related to curriculum materials, including their content, adaptability to diverse student groups, the lack of necessary knowledge for creating and using instructional materials, and the ability to act autonomously in decision-making processes concerning the curriculum (Ben-Peretz, 1990).

From this theoretical vantage point, investigating curriculum literacy as an academic construct requires attention to both its pedagogical implications and its epistemological trajectory within curriculum studies. The expansion of empirical and conceptual scholarship in recent decades signals a shift from perceiving teachers as mere implementers to recognizing them as informed agents who actively co-construct the meaning of curriculum (Goodson, 2014; Priestley et al., 2015). Despite this growing interest, research on curriculum literacy still lacks a comprehensive synthesis that systematically maps its intellectual structure, theoretical underpinnings, and developmental trajectory. A bibliometric approach therefore offers an effective means of examining how the concept has evolved, which paradigms have shaped it, and what gaps persist in the global research landscape. In this respect, the present study moves beyond cataloguing publication patterns to situating curriculum literacy within the broader lineage of curriculum theory and teacher professionalism. By providing a data-driven overview of research trends, key themes, and emerging intellectual patterns in the Web of Science (WoS) corpus, it seeks to contribute to the conceptual consolidation of the field. Accordingly, the study addresses the following research questions:

1. What are the prominent periods in studies on curriculum literacy, the geographical distribution of studies, and the characteristics of the most productive countries?
2. What is the distribution of prominent universities, journals, and researchers in the curriculum literacy literature?
3. What are the key concepts addressed in studies on curriculum literacy and the characteristics of the temporal trends observed in these studies?

By addressing these questions, this study contributes to a theoretical understanding of curriculum literacy as a developing field of inquiry and offers insights into its evolving global discourse. The findings are expected to inform future research directions, highlight potential gaps in the literature, and contribute to a more integrated conceptualization of curriculum literacy within educational theory and practice.

Method

Research Design

In this study, the bibliometric analysis method, which is one of the quantitative research designs, was preferred. Bibliometric analysis stands out as an effective method that aims to examine the historical development, current status and emerging new research trends of scientific production in a specific academic field with a systematic and quantitative approach (Donthu et al., 2021). This method not only analyzes the numerical distribution and bibliographic relations of publications produced in the relevant field; it also makes scientific interaction networks, collaboration structures and academic impact levels visible. In the literature, bibliometric analysis studies not only map the existing knowledge on a research topic in detail but also enable the development of meaningful predictions about the future trends in the field in question (Zupic & Čater, 2015). Bibliometric analysis is both a functional tool in the form of a literature review and a strategic methodological approach in terms of evaluating the developmental dynamics of the research field.

Data Source

The dataset of this research was obtained from scientific articles scanned in WoS database. WoS is a selective citation database that indexes academic publications including journals, conference proceedings, books and data sets, and is considered a source that provides access to internationally accepted, reliable and high-quality literature (Birkle et al., 2020). Thanks to its multidisciplinary structure and editorial policy based on high standards applied in content selection, WoS provides systematic access to quality publications related to research conducted in different academic fields. In addition, it offers researchers comprehensive and filtered data analysis opportunities through subindexes structured according to thematic areas and publication types (Pranckutė, 2021). Due to these aspects, WoS was chosen as a data source in this study to determine academic publications with high impact level on curriculum literacy, to analyze these publications and to reveal the trends in the field. In addition, the fact that WoS allows multi-dimensional bibliometric analyses through different citation indexes provides an important advantage in terms of research.

Although this study utilized WoS as the primary data source, it is important to acknowledge that WoS alone may not capture the full breadth of research on curriculum literacy. This potential underrepresentation does not imply that these contributions are negligible; rather, it reflects the inherent indexing selectivity and disciplinary biases of individual bibliographic databases. Given these constraints, WoS was selected for this study because of its systematic indexing standards, and wide international acceptance. However, the findings should be interpreted with the understanding that they represent the WoS-indexed segment of curriculum literacy research, not the field in its entirety.

Data Collection Process

The dataset was obtained from WoS database on May 27, 2025, following a structured query process designed to include publications related to curriculum literacy. As part of the research, the curriculum literacy literature was first examined in detail, the key concepts and conceptual variations in the field were identified, and a comprehensive and inclusive search string was created accordingly. This keyword-based search strategy is considered an effective method frequently used in scientific research for systematically scanning the relevant literature and reliably selecting studies that are directly related to the topic (Gümüş et al., 2019).

To support a clear and auditable systematic review process, the study adhered to the reporting principles set out in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009). In line with PRISMA, clear inclusion and exclusion criteria for the articles were determined, and the data filtering, screening, and analysis processes were organized into a systematic structure. In this way, the scientific validity and reliability of the research were enhanced, and the findings could be associated with the general trends in the literature.

As part of the research, the following search string was constructed in WoS database: TS = "curriculum literacy" OR "curricular literacy" OR "curriculum understanding" OR "curriculum knowledge" OR "curriculum competence" OR "curriculum awareness" OR "curriculum proficiency" OR "curriculum expertise" OR "knowledge of curriculum" OR "curriculum-related knowledge" OR "curriculum orientation" OR "curriculum design knowledge" OR "curriculum pedagogical knowledge" AND ("teacher education" OR "teacher knowledge" OR "teacher competence" OR "curriculum development" OR "curriculum studies". The search query was intentionally constructed with a broad set of terms because curriculum literacy is not a standardized descriptor in the international literature, and the concept is reflected through multiple related constructs. Studies addressing teachers' understanding, knowledge, competence, awareness, and expertise regarding curriculum often use different terminology to describe what are, in essence, dimensions of curriculum literacy. Prior literature defines curriculum literacy as a multidimensional construct that encompasses teachers' ability to interpret, understand, enact, and make informed decisions about curriculum (Pinar, 2012; Priestley et al., 2015; Shulman, 1987). Therefore, terms such as curriculum understanding, curriculum knowledge, curriculum competence, curriculum design knowledge, and curriculum orientation were included because they represent core theoretical components of curriculum literacy rather than unrelated concepts. Excluding these terms would risk omitting substantial parts of the literature that address the phenomenon under different labels. In addition, bibliometric research requires capturing the full conceptual landscape of a field, especially when the terminology is diffuse or evolving. Methodological guidelines emphasize that comprehensive term sets are essential for retrieving all relevant publications and avoiding systematic bias caused by narrow keyword selection (Donthu et al., 2021; Zupic & Čater, 2015). Accordingly, the inclusion of broader terms such as teacher knowledge or curriculum development aligns with established bibliometric practices, as these constructs frequently intersect with and operationalize aspects of curriculum literacy in empirical research. The search strategy thus reflects both the theoretical complexity of the concept and the methodological requirements of a systematic bibliometric analysis.

This search was conducted across the title, abstract, author keywords, and system-generated keywords (Keyword Plus), initially yielding a total of 522 publications. In the subsequent filtering process, the scope was limited to research articles, review articles, and early access publications. Publications outside this scope such as conference proceedings, book chapters, and reports were excluded, reducing the dataset to 332 articles. In the next stage, only articles published in journals indexed in Science Citation Index, Social Sciences Citation Index, Emerging Sources Citation Index and Arts & Humanities Citation Index were included. Seventy-nine articles that did not meet this criterion were excluded, bringing the dataset down to 253 articles. This limitation was adopted because journals in these indexes are known for their high academic impact and adherence to scientific merit, ethical standards, blind peer review, and transparent evaluation procedures. Following this, a language filter was applied to include only studies published in English, and 20 non-English articles were excluded, reducing the count to 233. In the final stage, each article was screened by the researcher. Twenty-five articles that were not directly focused on education and curriculum literacy were excluded. These exclusions were largely due to Keyword Plus terms generating contextually irrelevant associations. As a result of this structured and multi-stage filtering process, a total of 208 articles published between 1988 and 2025 and directly related to the topic were identified as the final dataset and prepared for bibliometric analysis. This methodological consistency was aimed at ensuring the scientific validity and thematic integrity of the literature under analysis.

Data Analysis

During the analysis of the structured dataset, various software tools capable of conducting bibliometric data analysis were employed. Microsoft Excel was used for preliminary analyses and data cleaning; R software was utilized for advanced bibliometric analyses; and Biblioshiny application, which enables bibliometric visualization, was also preferred (Aria & Cuccurullo, 2017). These tools facilitated the systematic examination of the dataset, classification of publications based on various variables, and the exploration of multidimensional relationships. In line with the aim and research problem of the study, the analysis process was initiated by presenting descriptive data. Within this scope, key bibliometric indicators such as the distribution of studies across years, productivity levels based on countries and institutions, as well as author and journal profiles were examined. Furthermore, prominent academic institutions, researchers, and journals identified as influential in the field of curriculum literacy were analyzed to evaluate their multifaceted contributions to the development of the field. To reveal thematic shifts and research trends in the literature, conceptual analyses were conducted based on key terms. These analyses enabled a detailed mapping of the prominent topics and the intellectual structure within the domain of curriculum literacy. In doing so, the study aimed to provide a comprehensive and integrative perspective that reflects the current state of the field and offers insights into potential future research directions.

Validity and Reliability

In bibliometric research, validity and reliability are among the fundamental methodological principles that ensure the scientific consistency of the study and the credibility of its findings. In this regard, to ensure internal validity, the selection process for the publications included in the literature review was structured according to predefined and theoretically grounded inclusion and exclusion criteria. To prevent these criteria from being based solely on the subjective judgments of the researcher, the opinions of two academic experts in the field of

curriculum and instruction were consulted, and the criteria were finalized based on their input. Clearly stating these criteria also contributed to the external validity of the study by defining the boundaries of its scope.

The data collection and analysis processes of the study were reported in detail, adhering to the principle of scientific transparency. This ensured the traceability of the process and maintained methodological consistency, thereby reinforcing the study's external validity. To ensure internal reliability, the findings were presented systematically and supported with textual, tabular, and visual data, with a focus on consistency, objectivity, and measurability in reporting. For external reliability, the analytical results and interpretations were reviewed by two independent experts recognized for their expertise in curriculum and instruction. Based on the feedback obtained from these experts, the objectivity and contextual accuracy of the interpretations were reassessed. This process demonstrates that the research was constructed not only on a technical level but also on a theoretical level to reflect the perspective of curriculum literacy.

Overall, the adopted methodological framework reflects a research process grounded in widely accepted scientific norms, not only methodologically but also epistemologically and analytically. Therefore, these procedures ensured the methodological and analytical consistency of the study, strengthening its validity as a bibliometric analysis in the field of curriculum literacy.

Results

In this section, the findings related to the research questions of the study are presented under separate headings.

Results Related to the First Research Question of the Study

In this section, bibliometric data on the prominent periods in curriculum literacy studies, the geographical distribution of studies, and publication performances of the most productive countries are presented in line with the first research question. The data in question were analyzed to reveal the development dynamics of curriculum literacy literature over time, production centers and scientific interaction networks on a global scale. The distribution of publications by year was examined and the periods in which the field gained momentum were determined; the total number of publications and citation levels were reported visually and numerically. The findings obtained provide an analytical framework for understanding the academic visibility of curriculum literacy at the international level and geographical centers of density.

Table 1

Descriptive Information about the Dataset

Variables	*Result*
Timespan	1988-2025
Documents	208
Annual growth rate	6.7%
Document average age	8.33

Table 1 (*Continued*)	
Average citations per doc	13.96
References	9126
Author's keywords	620
Authors	482
Authors of single-authored documents	71
International co-authorships	11.06%

Table 1 offers an overview of the dataset's descriptive indicators, showing that the body of literature on curriculum literacy encompasses publications dated between 1988 and 2025. It is essential to note that the data for 2025 are incomplete, as the data collection process concluded on May 27, 2025. Therefore, the publication count for this year reflects only the first five months and should not be interpreted as an indicator of an annual decrease or increase. During this period, a total of 208 articles consistent with the criteria of the study were published in WoS database. The annual growth rate of the curriculum literacy literature was found to be 6.7%. The average age of the publications is 8.33 years, indicating the recency and continuity of the literature. Furthermore, the average number of citations per article was determined to be 13.96. The total of 9.126 citations across the articles suggests that curriculum literacy studies are grounded in a rich and evolving theoretical background. A total of 620 keywords were used by researchers, reflecting the conceptual diversity and terminological richness of the field. The total number of contributing authors is 482, of whom 71 authored their publications individually. Another noteworthy finding is that 11.06% of the articles were produced through international collaborations. This indicates that studies on curriculum literacy are open to global academic cooperation and that the field is developing in interaction with the international scholarly community.

Figure 1

Chronological Distribution of Published Articles in the Dataset

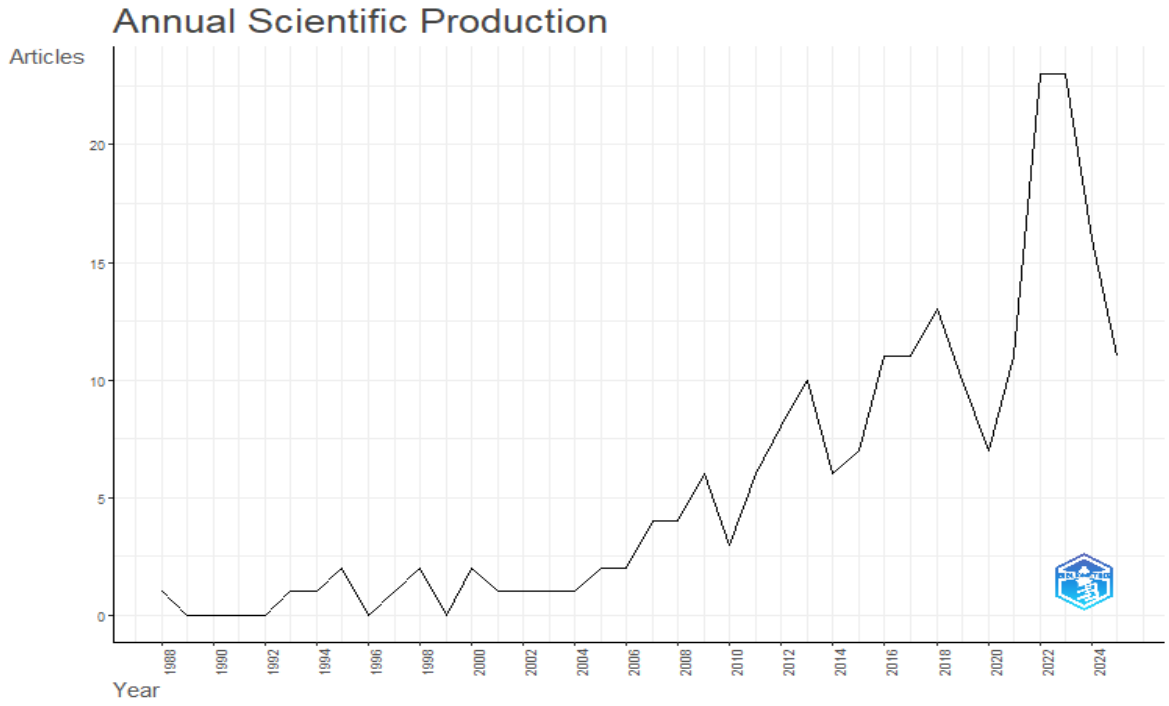


Figure 1 illustrates the chronological distribution of articles related to curriculum literacy indexed in WoS database. Upon examining Figure 1, it becomes evident that the number of studies published between 1988 and 2006 was quite limited. This period can be characterized as an early phase during which curriculum literacy had not yet gained substantial academic attention and was addressed by a relatively small group of researchers. However, starting from 2006, a noticeable upward trend in publication frequency emerges, indicating growing scholarly interest in the topic. The period following 2020 stands out as a phase of marked acceleration in publication activity. In particular, the years 2022 (Number of Articles = 23) and 2023 (Number of Articles = 23) represent the peak of academic output in the field, signaling heightened research activity and visibility. In contrast, a slight decline is observed in 2024, with the number of articles dropping to 16. While this decrease may be temporary, it highlights the importance of ongoing monitoring of publication trends to better understand the evolving dynamics of the field. Most importantly, the data for 2025 are partial, as only publications available up to May 27, 2025, were included in the analysis. Therefore, the count for 2025 should not be viewed as evidence of a declining trend, since the year had not yet concluded at the time of data collection. Any comparison involving 2025 must take this methodological constraint into account to avoid misleading inferences about publication dynamics.

Figure 2

Scientific Production by Country in the Dataset

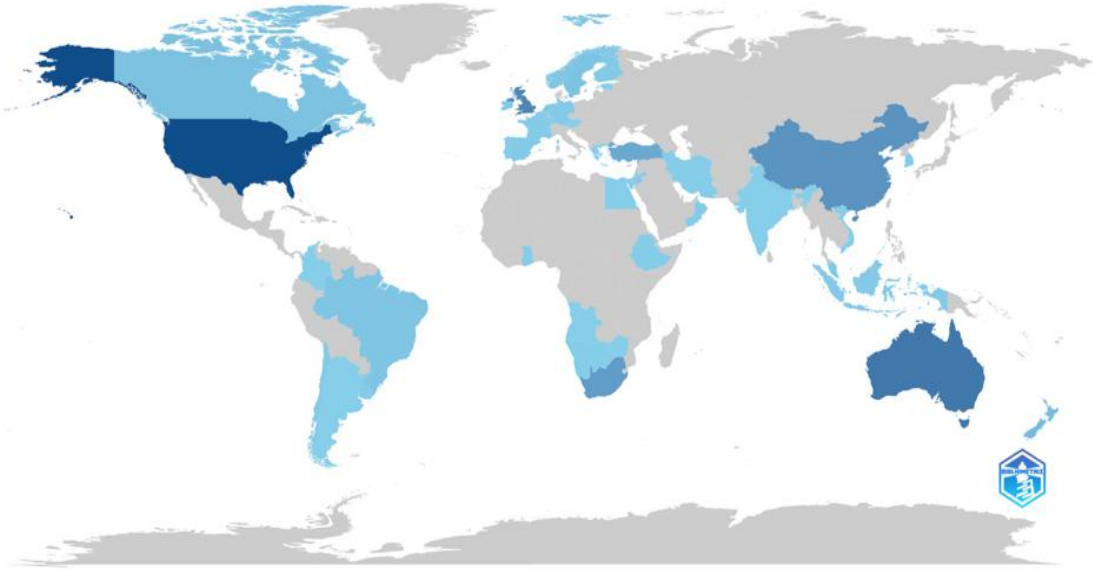


Figure 2 visualizes the distribution of scientific output on curriculum literacy by country, based on publications indexed in WoS database. The color gradients on the map reflect the intensity of academic production, with darker blue tones representing countries that have made the most substantial contributions to the literature, while lighter shades indicate relatively lower levels of scholarly output. According to the data, the United States of America (the USA) (Number of Articles = 134) and Australia (Number of Articles = 87) stand out as the leading countries in curriculum literacy research, contributing significantly to both theoretical and practical dimensions of the field. The United Kingdom (the UK) (Number of Articles = 73)

and China (Number of Articles = 58) also emerge as prominent contributors, reinforcing their influential roles in shaping the discourse. These findings highlight that curriculum literacy has found a particularly strong foothold within the Anglo-Saxon academic tradition, suggesting that the dominant theoretical frameworks in the field are largely informed by perspectives developed within this context. The concentration of scholarly activity in these regions points to a well-established research culture and suggests potential models for other countries aiming to expand their contributions to curriculum literacy research.

Figure 3

Top 10 Most Cited Countries in the Dataset

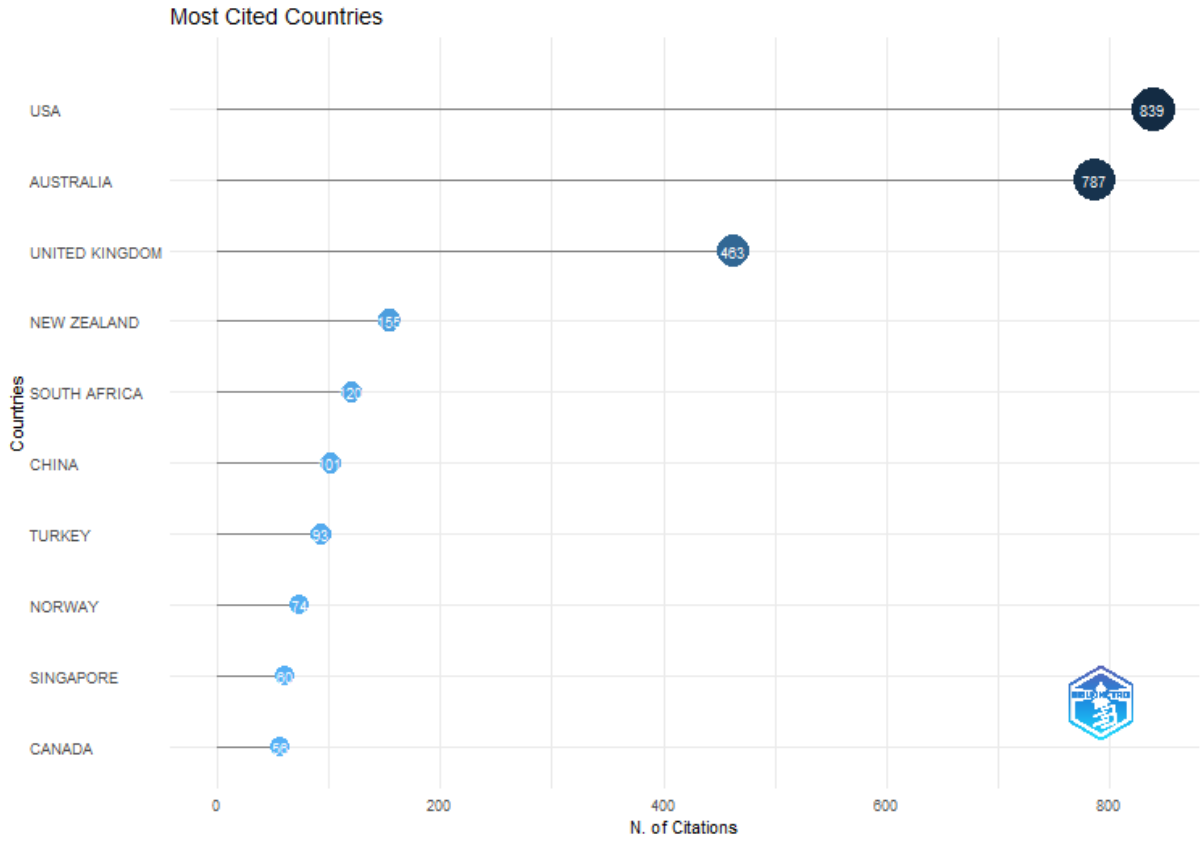


Figure 3 shows the total number of citations received by publications on curriculum literacy indexed in WoS database, categorized by country. These data allow for an evaluation of each country's academic impact in this field, not only in terms of publication quantity but also based on the scientific resonance generated through citation counts. According to the data, the USA (Total Citations = 839) holds a leading position in the curriculum literacy literature. This finding indicates that the USA is not only prolific in terms of publication volume but also serves as one of the central hubs producing foundational contributions that shape the intellectual development of the field. Australia (Total Citations = 787) and the UK (Total Citations = 463) also demonstrate high levels of scientific visibility and impact through their highly cited studies. Additionally, countries such as New Zealand (Total Citations = 155) and South Africa (Total Citations = 120), despite having relatively fewer publications, stand out with their high average citation counts. This suggests that the research produced in these countries offers in-depth, contextually rich, and original contributions. Furthermore, countries like China (Total Citations

= 101) and Türkiye (Total Citations = 93) contribute to the curriculum literacy literature by restructuring their contributions within distinct cultural, pedagogical, and political contexts, thereby adding diversity and global inclusivity to the field. Overall, the findings suggest the emergence of a globally multi-centered structure of academic production in the field of curriculum literacy-one that supports the theoretical development of the field across varied contexts.

Figure 4

Publication Performance of the Top 5 Most Productive Countries by Year in the Dataset

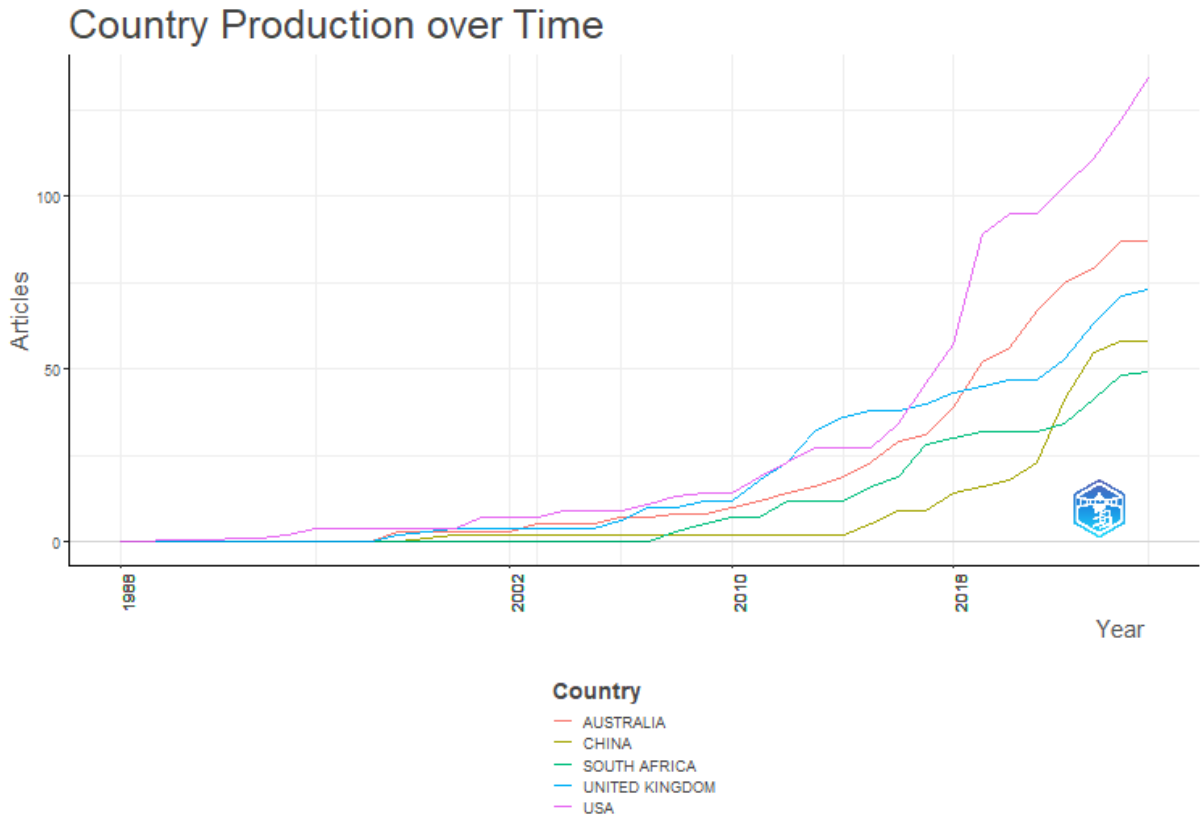


Figure 4 presents the annual publication performance of the top five most prolific countries in the field of curriculum literacy, based on data from WoS database. According to the data, the five countries with the highest number of publications in this area are the USA (Number of Articles = 134), Australia (Number of Articles = 87), the UK (Number of Articles = 73), China (Number of Articles = 58), and South Africa (Number of Articles = 49). A review of Figure 4 reveals that the USA has maintained its leading position in curriculum literacy research for an extended period, with a noticeable and consistent increase in publications, particularly since the early 2000s. Following the USA, Australia and the UK have steadily expanded their academic contributions, emerging as strong actors in the literature. On the other hand, countries such as China and South Africa have shown a marked increase in academic interest in curriculum literacy in recent years. This upward trend indicates that these countries are becoming more actively and visibly integrated into the global educational research landscape. Overall, the findings suggest that academic production in curriculum literacy is becoming geographically

more diverse, with countries from different continents increasingly contributing to the development of the literature.

Results Related to the Second Research Question of the Study

This section presents data or results on the distribution of the leading universities, journals, and researchers in the field of curriculum literacy studies.

Table 2

Top 10 Most Productive Universities in the Dataset

University	*Country*	*Number of publications*
The University of Melbourne	Australia	12
The Chinese University of Hong Kong	China	11
The University of Sheffield	the UK	11
Edith Cowan University	Australia	9
Middle East Technical University	Türkiye	9
The University of KwaZulu-Natal	South Africa	9
Michigan State University	the USA	8
The University of Auckland	New Zealand	8
University of Texas at Austin	the USA	8
University of Cape Town	South Africa	7

Table 2 presents the universities that have produced the highest number of publications in the field of curriculum literacy, based on data from WoS database. According to the findings, The University of Melbourne (Number of Publications = 12) stands out as the most productive institution. It is followed by The Chinese University of Hong Kong (Number of Publications = 11) and The University of Sheffield (Number of Publications = 11). Edith Cowan University (Number of Publications = 9), Middle East Technical University (Number of Publications = 9), and The University of KwaZulu-Natal (Number of Publications = 9) demonstrate an equal level of productivity in terms of publication count, jointly occupying the third position in the ranking. These institutions can be considered key regional hubs representing academic interest in curriculum literacy. Notably, universities based in the USA, Australia, and South Africa are prominently represented in the list, indicating a strong academic focus on curriculum literacy in these countries. However, the inclusion of universities from China, the UK, Türkiye, and New Zealand demonstrate that the curriculum literacy literature spans a broad geographical scope and has attracted global scholarly interest.

Table 3

Journals Publishing the Most Articles in the Dataset

Journal	*Number of publications*	*Year of establishment of the journals*
The Curriculum Journal	9	1990
Chemistry Education Research and Practice	7	2000
Journal of Curriculum Studies	7	1968
Australian Journal of Teacher Education	6	1976
Journal of Science Teacher Education	6	1989

Table 3 (*Continued*)		
BMC Medical Education	4	2001
Journal of Baltic Science Education	4	2002
Journal of Education	4	1892
Journal of Teacher Education	4	1950
International Research in Geographical and Environmental Education	3	1992

Table 3 presents the ranking of the top 10 journals that have published the most articles in the field of curriculum literacy, based on data obtained from WoS database. It includes the number of articles published in each journal as well as their starting publication years. This information serves as an important resource for identifying the main scientific publication platforms that guide the curriculum literacy literature and for determining the leading journals contributing to the academic development of the field. According to Table 3, The Curriculum Journal (Number of Articles = 9) stands out as the journal with the highest volume of publication in the curriculum literacy literature. Chemistry Education Research and Practice (Number of Articles = 7) and Journal of Curriculum Studies (Number of Articles = 7) rank second in terms of academic productivity in the field. Additionally, Australian Journal of Teacher Education (Number of Articles = 6) and Journal of Science Teacher Education (Number of Articles = 6) are among the influential publications in curriculum literacy and contribute to the diversification of the literature. Overall, these journals play a fundamental role in the academic dissemination of curriculum literacy research and are considered active actors in shaping the disciplinary foundations of the field.

Figure 5

Publication Performance of the Top 5 Journals with the Most Articles Published over the Years in the Dataset

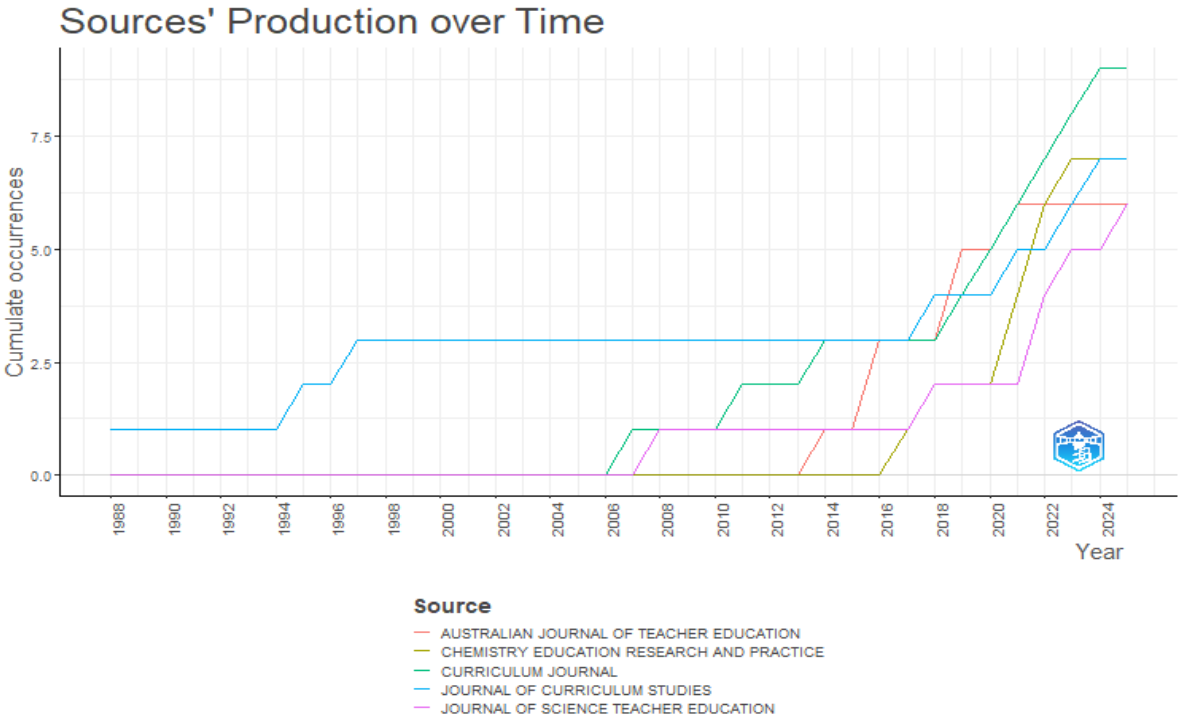


Figure 5 illustrates the increasing trend in cumulative publication output by academic journals in the field of curriculum literacy over the years, based on data obtained from WoS database. Upon examining the figure, it is evident that The Curriculum Journal (number of articles = 9), Chemistry Education Research and Practice (number of articles = 7), Journal of Curriculum Studies (number of articles = 7), Australian Journal of Teacher Education (number of articles = 6), and Journal of Science Teacher Education (number of articles = 6) stand out as the five most productive journals in this field. Notably, the prominent leadership position of The Curriculum Journal indicates that it is one of the leading platforms where the curriculum literacy literature is extensively published and shaped. Figure 5 demonstrates that the substantial increase in research output on curriculum literacy from 2016 onward reflects an intensified scholarly focus on the topic.

Table 4

Ten Most Productive Authors in the Dataset

Journal	*Number of publications*	*Total citations*
Winter, C.	5	5
Boz, Y.	3	3
Sen, M.	3	2
Akkus, H.	3	1
Harris, B.	3	1
Modiba, M.	3	1
Cornbleth, C.	3	-
Moon, B.	3	-
Annala, J.	2	1
Chien, C.W.	2	-

Table 4 presents the authors with the highest number of publications in the field of curriculum literacy based on data retrieved from WoS database. The analysis reveals that Winter, C. (Number of Publications = 5; Total Citations = 5) stands out as the most prolific researcher in this area. Following Winter, Boz, Y. (Number of Publications = 3; Total Citations = 3) and Şen, M. (Number of Publications = 3; Total Citations = 2) are identified as other leading contributors to the field. In addition, researchers such as Akkus, H. (Number of Publications = 3; Total Citations = 1), Harris, B. (Number of Publications = 3; Total Citations = 1), and Modiba, M. (Number of Publications = 3; Total Citations = 1) are also considered prominent in terms of publication frequency. However, a general examination of the table indicates that the number of publications and corresponding citation counts among the most productive authors remain relatively low. This finding suggests that the academic literature on curriculum literacy is still in a developmental phase, and the individual impact of researchers in the field is currently limited.

Table 5

Corresponding Author's Countries in the Dataset

Country	*Number of publications*	*Single country publication*	*Multiple country publication*
USA	38	36	2
Australia	32	27	5
the UK	29	28	1

Table 5 (*Continued*)			
China	19	17	2
South Africa	19	17	2
Türkiye	14	13	1
New Zealand	8	7	1
Brazil	4	4	-
Canada	4	3	1
Sweden	4	3	1

Table 5 presents the distribution of studies published in the field of curriculum literacy according to the countries of the corresponding authors and indicates whether these publications were produced through single-country or multinational collaborations. Based on data retrieved from WoS database, the USA emerges as the leading country in terms of corresponding authorship (Number of Publications = 38). Australia (Number of Publications = 32) and the UK (Number of Publications = 29) also stand out as prominent contributors in this respect. The vast majority of publications were produced within the scope of single-country collaborations. In particular, the USA (Number of Publications = 36), the UK (Number of Publications = 28), and Australia (Number of Publications = 27) lead in the number of publications generated solely within national contexts. In contrast, the number of publications resulting from multinational collaborations remains relatively limited. Among these, Australia has the highest number of internationally co-authored publications (Number of Publications = 5). These findings suggest that research outputs in the field of curriculum literacy are predominantly generated within national frameworks; and that international collaborations remain relatively scarce.

Table 6

Top 10 Most Cited Articles in the Dataset

Author	*Year*	*Article*	*Journal*	*Total citations*
Cervantes-Soon, C.G. et al.	2017	Combating inequalities in two-way language immersion programs: Toward critical consciousness in bilingual education spaces	Review of Research in Education	282
Gibbons, P.	2003	Mediating language learning: Teacher interactions with ESL students in a content-based classroom	TESOL Quarterly	207
Bybee, R & McCrae, B.	2011	Scientific literacy and student attitudes: Perspectives from PISA 2006 science	Journal of Science Education	133
Karseth, B & Sivesind, K.	2010	Conceptualizing curriculum knowledge within and beyond the national context	European Journal of Education	73
Oreck, B.	2004	The artistic and professional development of teachers: A study of teachers' attitudes toward and use of the arts in teaching	Journal of Teacher Education	71

Table 6 (*Continued*)

Beck, J.	2013	Powerful knowledge, esoteric knowledge, curriculum knowledge	Cambridge Journal of Education	62
O'Connor, K.	2022	Constructivism, curriculum and the knowledge question: tensions and challenges for higher education.	Studies in Higher Education	57
Young, M.	2013	Powerful knowledge: An analytically useful concept or just a 'sexy sounding term'? A response to John Beck's 'Powerful knowledge, esoteric knowledge, curriculum knowledge'	Cambridge Journal of Education	57
Yoshida, M.	2012	Mathematics lesson study in the United States: Current status and ideas for conducting high quality and effective lesson study	International Journal for Lesson and Learning Studies	53
Rata, E.	2016	A pedagogy of conceptual progression and the case for academic knowledge	British Educational Research Journal	52

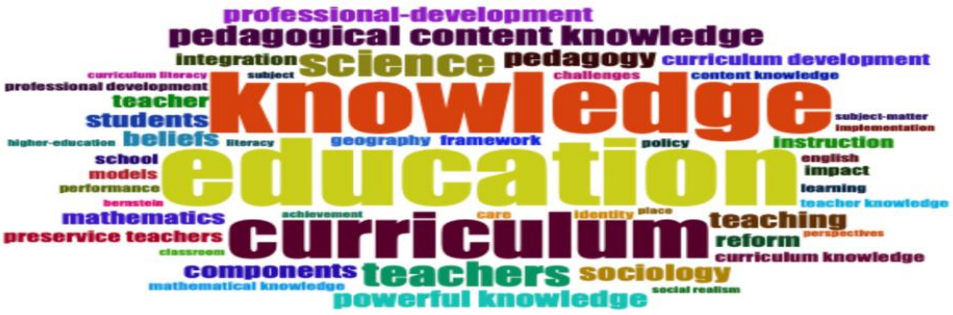
Table 6 presents information on the academic journals in which the most highly cited studies in the field of curriculum literacy have been published, along with their total citation counts. Based on data obtained from WoS database, it is observed that the studies in question revolve around various themes such as critical consciousness, scientific literacy, teachers' professional development, and constructivist approaches. These contributions have played a significant role in strengthening the theoretical foundations of the field and enriching its practical applications. One of the most prominent studies is the article titled "Combating Inequalities in Two-Way Language Immersion Programs: Toward Critical Consciousness in Bilingual Education Spaces" by Cervantes-Soon, C.G. et al. (2017), published in Review of Research in Education, which has received a total of 282 citations. This publication has made a notable impact on the field by advocating for the development of critical consciousness within the context of bilingual education. Another influential work is Gibbons' (2003) article "Mediating Language Learning: Teacher Interactions with ESL Students in a Content-Based Classroom", published in TESOL Quarterly (Total Citations = 207). This study demonstrates how teacher interactions with English as a Second Language (ESL) students in content-based classrooms facilitate language acquisition. Additionally, the study by Bybee and McCrae (2011), published in the Journal of Science Education, also stands out. Titled "Scientific Literacy and Student Attitudes: Perspectives from PISA 2006 Science" (Total Citations = 133), this article explores the relationship between scientific literacy and students' attitudes toward science, drawing on data from the PISA 2006 assessment.

Results Related to the Third Research Question of the Study

In this section, bibliometric data on the key concepts and trend topics in curriculum literacy studies is presented in line with the third research question.

Figure 6

Word Cloud of Analyzed Articles



The word cloud presented in Figure 6 illustrates the key concepts that are most frequently emphasized in the academic literature on curriculum literacy. Among the most prominent terms in the visual representation are education (Frequency = 41), knowledge (Frequency = 37), and curriculum (Frequency = 28), which reflect the core focus areas shaping the theoretical framework of curriculum literacy. Surrounding these central terms are others such as teachers, pedagogical content knowledge, professional development, science, teaching, and students. These indicate that the literature often engages with topics related to teacher education, types of instructional knowledge, professional development, and discipline-based pedagogical approaches. In this regard, the word cloud clearly reflects the multidimensional nature of research in the field of curriculum literacy and its emphasis on the theoretical interplay between pedagogical and societal knowledge.

Figure 7

Trend Topics

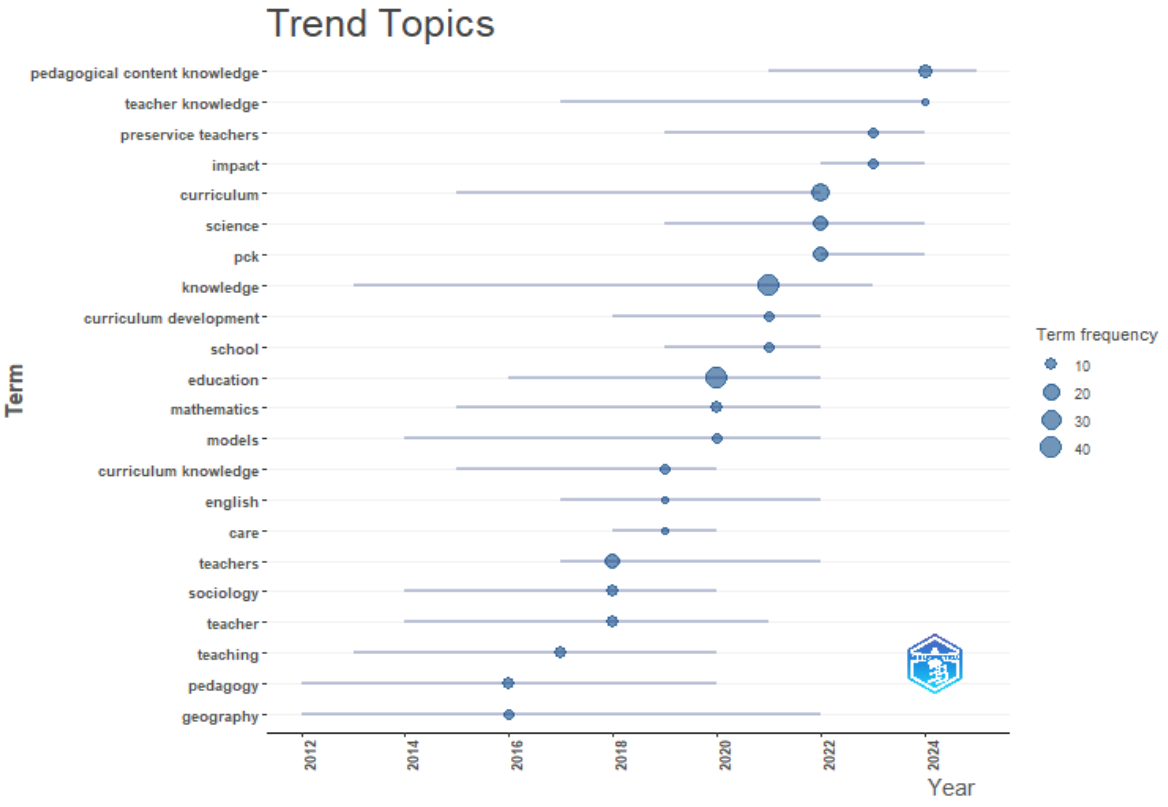


Figure 7 illustrates the trends in topic focus and shifts in research areas within studies on curriculum literacy over time (data obtained from WoS database). The horizontal axis represents the years, the vertical axis denotes the thematic focuses, and the circles indicate the intensity of research interest. Additionally, the extension of lines suggests that certain topics have maintained their relevance over the years. An examination of Figure 7 reveals that specific concepts have gained prominence at various times, indicating notable changes in research trends. For instance, "pedagogy" (f=10) emerged as a prominent topic in 2016, while "teaching" (f=10) became more central in 2017. "Teacher" (f=15) stood out in 2018, and "curriculum knowledge" (f=6) in 2019, the onset year of the global COVID-19 pandemic. In subsequent years, "education" (f=41) in 2020, "knowledge" (f=37) in 2021, and "curriculum" (f=28) in 2022 emerged as key research themes. More recently, "preservice teachers" (f=7) in 2023 and "pedagogical content knowledge" (f=12) in 2024 have come to the forefront of academic inquiry.

Discussion and Conclusion

The bibliometric analysis conducted in this study offers a comprehensive and theoretically grounded overview of how curriculum literacy has developed as an academic field between 1988 and 2025. Beyond mapping descriptive patterns such as publication frequency, institutional productivity, and citation distributions; the findings illuminate the conceptual, epistemological, and policy-driven conditions that have shaped the emergence and evolution of curriculum literacy in the international literature. By situating these trends within broader debates on teacher professionalism, curriculum theory, and educational change; this section critically interprets the major findings and articulates their implications for the development of the field.

A central contribution of the study lies in clarifying the historical trajectory of the concept. The noticeable increase in publications after 2006 marks an important intellectual and practical turning point. This rise cannot be interpreted merely as a quantitative expansion; instead, it corresponds to structural changes in global educational discourse. Beginning in the early 2000s, accountability-oriented reforms, standards-based curriculum, and outcome-driven educational policies reshaped the relationship between teachers and curriculum (Au, 2011; Goodson, 2014). As teachers were increasingly expected to implement centrally prescribed curriculum under intensified policy pressures, concerns emerged regarding their autonomy, interpretive capacity, and professional agency (Apple, 2004; Priestley et al., 2015). Curriculum literacy emerged as a conceptual framework emphasizing teachers' ability to read, interpret, critique, and reconstruct curriculum texts. Thus, the pronounced growth in studies after 2006 reflects the global shift from viewing teachers as implementers toward understanding them as curriculum makers who actively participate in the co-construction of curriculum meaning (Deng, 2018, Goodson, 2014).

The findings also demonstrate that the period between 2020 and 2023 represents a second and more accelerated wave of scholarly attention. This surge coincides with the COVID-19 pandemic, which exposed significant gaps between intended and enacted curriculum across countries. Teachers were required to adapt curriculum expectations to unprecedented learning environments, prompting renewed interest in curriculum literacy as a competence necessary for curriculum adaptation, pedagogical flexibility, and professional judgment. The presence of

trend topics such as "teacher," "curriculum knowledge," "education," and "pedagogical content knowledge" after 2020 indicates a deepening concern with equipping teachers to make informed pedagogical decisions in rapidly changing educational contexts.

A significant critique raised by reviewers concerns the explanation of how the rise in curriculum-literacy research connects to social-justice-oriented pedagogical approaches. The bibliometric findings reveal that the increase in publications is not solely a response to technical or pedagogical concerns; it also reflects deeper theoretical commitments in contemporary curriculum debates. Highly cited studies included in the dataset (e.g. Cervantes-Soon et al., 2017), which foreground critical consciousness in bilingual education, point to an expanded understanding of curriculum literacy as a socially and culturally situated construct. Literacy-oriented curriculum frameworks inspired by Freire and Macedo (2005) and Giroux (2007) do not treat curriculum as a neutral text but as a socially embedded discourse that requires critical reading, interpretation, and interrogation. Therefore, the growing scholarly interest in curriculum literacy parallels a broader movement advocating pedagogies grounded in equity, cultural responsiveness, and democratic participation. In this sense, the increasing visibility of curriculum literacy research contributes to establishing a theoretical bridge between curriculum studies and critical educational thought, thus aligning with global calls for socially just curriculum reform.

Despite the overall growth of the field, the analysis reveals striking geographical disparities. Although the USA is the most productive country in terms of publication count, its university-level productivity is considerably lower than that of Australia or the UK. This discrepancy reflects structural characteristics of the USA research landscape, where curriculum studies are dispersed across diverse subfields and institutional traditions. In contrast, Australia and the UK demonstrate more cohesive institutional research cultures, reflected in the concentration of influential universities such as the University of Melbourne and the University of Sheffield. These institutions have historically played a central role in advancing curriculum theory, teacher education, and literacy studies, providing fertile ground for the conceptual development of curriculum literacy.

Equally noteworthy is the finding that countries such as New Zealand and South Africa, despite producing relatively fewer publications, have disproportionately high citation averages. This suggests that scholarship emerging from these contexts contributes novel, theoretically rich, and contextually responsive perspectives. For instance, South African studies engaging with postcolonial curriculum theory offer powerful insights into how curriculum literacy is shaped by histories of inequality, linguistic diversity, and sociopolitical transformation (Jansen & Taylor, 2003). These patterns underscore that academic influence in the field is not determined solely by productivity but by the theoretical originality and contextual relevance of contributions.

Another critical structural issue revealed in the findings is the low rate of international co-authorship (11.06%). This indicates that curriculum-literacy research remains predominantly national, limiting the field's epistemological depth and global coherence. Although curriculum is often embedded in national policy frameworks, curriculum literacy as a construct concerned with interpretation, agency, and decision-making clearly benefits from comparative and cross-cultural inquiry. Prior scholarship on research collaboration demonstrates that international partnerships generate higher-quality, more innovative outcomes by enriching intellectual

diversity and broadening methodological approaches (Barrett et al., 2011; Freshwater et al., 2006). Thus, increasing cross-national collaboration represents one of the most urgent needs for advancing curriculum literacy as a global field of study.

The thematic analyses conducted in this study reveal important shifts in the intellectual structure of curriculum literacy. Earlier research primarily focused on curriculum knowledge, implementation fidelity, or the technical aspects of reading curriculum documents (Ariav, 1991; Shulman, 1987). Over time, however, the field has moved toward understanding curriculum literacy as a multidimensional competence encompassing critical interpretation, reflective judgment, pedagogical adaptation, and curriculum decision-making. The emergence of terms such as "pedagogical content knowledge," "teacher identity," and "preservice teachers" in recent years demonstrates that curriculum literacy has become increasingly integrated into teacher-education discourse. This shift is consistent with theoretical arguments emphasizing the role of teachers as intellectuals (Giroux, 2007) and curriculum makers who interpret, negotiate, and transform curriculum expectations in classroom settings (Schwab, 1969; Stenhouse, 1975). From a policy perspective, the findings suggest that curriculum literacy must be explicitly positioned as a foundational competence in both initial teacher education and continuous professional development. The persistent gap between intended and enacted curriculum- widely documented across educational systems (Aykaç & Ulubey, 2012; Bümen et al., 2014)- highlights the need for teachers who can navigate curriculum complexity with professional autonomy and critical insight. Strengthening curriculum literacy is therefore a strategic response to ensuring curriculum coherence, pedagogical responsiveness, and educational equity.

In conclusion, this study provides a theoretically and empirically grounded map of curriculum-literacy research, identifying its historical turning points, geographical centers, conceptual shifts, and structural limitations. The field has grown significantly over the past two decades, driven by global educational reforms, critical pedagogical movements, and increasing recognition of teachers' curriculum agency.

Implications

The scope of this study has been deliberately limited to publications indexed in the WoS database. The preference for WoS in bibliometric analyses is a widely adopted practice, largely due to its standardized data structure and extensive content coverage. However, the indexing policies of WoS may prioritize certain disciplines while placing others in a relatively marginal position. This introduces a potential risk of implicit bias, particularly in interdisciplinary research (Mongeon & Paul-Hus, 2016). Therefore, the inclusiveness and representativeness of the selected database should be considered to ensure the validity and generalizability of bibliometric research findings. In this regard, extending similar bibliometric analyses to include studies indexed in other national and international databases would provide a broader perspective for the literature. Comparative evaluations of findings drawn from multiple data sources may allow for a more comprehensive analysis of prominent themes, gaps, and trends in the curriculum literacy literature. Such an approach would also offer a robust theoretical and methodological foundation for future meta-analytical studies. Moreover, fostering international collaboration among researchers is crucial for enhancing both the quality and the scholarly impact of studies in the field of curriculum literacy. Scientific collaboration enables

the pooling of knowledge, expertise, and resources, leading to more holistic and effective research outcomes. Increasing the number of co-authored publications and joint research projects will not only strengthen the theoretical underpinnings of the field but also enrich its practical contributions. Particularly, engagement with researchers from diverse cultural and geographical contexts can offer a more universal and multidimensional perspective on curriculum literacy, thereby enhancing its global visibility and relevance.

Author Contributions

Okan Dede: Conceptualization, literature review, methodology, visualization, data analysis, writing–original draft and interpretation.

Hüseyin Ataseven: Conceptualization, literature review, methodology, visualization, data analysis, writing and editing original draft.

Declarations

Ethical Approval and Informed Consent

There are no human subjects in this article and informed consent is not applicable. Ethical approval is not applicable to this study.

Supplemental Material

There are no supplemental materials for this article.

Disclosure of AI use

ChatGPT 5.2 was used in a limited and auxiliary manner during the preparation of this manuscript, solely to support language-related aspects such as improving grammatical accuracy, enhancing academic tone, and refining sentence-level clarity in selected sections. It was not used to generate research ideas, formulate research questions, design the methodology, analyze or interpret data, or draw conclusions. All conceptualization, theoretical framing, methodological decisions, data analysis, and scholarly interpretations are entirely the work of the authors.

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Uluslararası Eğitim Programları ve Öğretim Çalışmaları Dergisi
15(*2*), 2025, 155-182
www.ijocis.com

TÜRKÇE GENİŞ ÖZET

Eğitim Programı Okuryazarlığı Araştırmalarına İlişkin Bibliyometrik Bir Analiz

Giriş

Program okuryazarlığı kavramı 1980'li yıllardan itibaren öğretmenlerin program bilgisini açıklamaya yönelik çalışmalar bağlamında literatürde görünür olmaya başlamıştır. Shulman'ın (1987) öğretmen bilgi temellerini açıklayan yaklaşımı program bilgisinin öğretmenlik mesleğinin merkezi bir boyutu olduğunu vurgulamaktadır. Ariav (1991) öğretmenlerin program bilgisine ilişkin açıklamaların sınıf içi materyal hazırlama ve düzenleme ile sınırlı tutulmasının yetersiz olduğunu belirterek program okuryazarlığı kavramını ortaya koymuştur. Bu kavram okuryazarlığın yalnızca okuma ve yazma becerilerini değil; programı çözümleme, anlamlandırma, yorumlama ve uygulama süreçlerini kapsayan bütüncül bir yeterlik alanı olduğunu ifade etmektedir. Aslan (2018), Keskin ve Korkmaz (2021) gibi araştırmacılar program okuryazarlığını programın bileşenlerini anlama, analiz etme, yorumlama ve bilinçli bir planlama süreci ile uygulamaya dönüştürme becerisi olarak tanımlamaktadır. Öğretmenlerin programı doğru anlamlandırmaları, program bileşenlerini ilişkilendirebilmeleri ve uygulamaya yansıtabilecek bilgi ve farkındalığa sahip olmaları eğitim kalitesinin belirleyicilerinden biridir (Aslan, 2018; Özkan, 2016).

Son yıllarda program okuryazarlığına yönelik çalışmaların sayısında belirgin bir artış gözlenmektedir. Bununla birlikte, literatürün kapsamını, kavramsal eğilimlerini, üretim merkezlerini ve yapısal özelliklerini bütüncül biçimde inceleyen sistematik analizlerin sınırlı olduğu görülmektedir. Bu çalışma Web of Science (WoS) veri tabanında 1988–2025 yılları arasında yayımlanan akademik yayınları bibliyometrik bir yöntemle inceleyerek program okuryazarlığı araştırmalarının gelişimini, eğilimlerini ve yapısal özelliklerini ortaya koymayı amaçlamaktadır.

Yöntem

Araştırmada bibliyometrik analiz yöntemi kullanılmıştır. Veri seti WoS veri tabanında 27 Mayıs 2025 tarihinde gerçekleştirilen ve program okuryazarlığına ilişkin temel kavramları içeren geniş kapsamlı bir arama dizgesiyle elde edilmiştir. PRISMA sürecine uygun olarak tür, indeks, dil ve konuya uygunluk ölçütlerine göre aşamalı bir eleme yapılmış ve toplam 208 makale analiz kapsamına alınmıştır. Veri analizi Microsoft Excel, R yazılımı ve Biblioshiny kullanılarak gerçekleştirilmiştir.

Bulgular

Bibliyometrik analiz sonuçları 1988–2025 yılları arasında program okuryazarlığı alanında yayımlanan çalışmaların önemli ölçüde arttığını ortaya koymaktadır. Yıllara göre yayın dağılımı incelendiğinde 1988–2006 döneminde oldukça sınırlı sayıda çalışmanın bulunduğu; 2006 sonrasında ise belirgin bir artış eğiliminin ortaya çıktığı görülmüştür. Bu artış yıllık büyüme oranının %6,7 olarak hesaplanmasıyla da desteklenmektedir. 2020'den itibaren hızlanan üretim özellikle 2022 ve 2023 yıllarında en yüksek seviyesine ulaşmış, 2023 yılı veri setindeki en yoğun yayın yılı olmuştur.

Ülke bazlı analizde Amerika Birleşik Devletler (ABD) en fazla yayına sahip ülke olarak belirlenmiştir (134 makale). ABD'yi Avustralya (87), Birleşik Krallık (73) ve Çin (58) takip etmektedir. Bu ülkelerin yüksek yayın sayıları program okuryazarlığına ilişkin çalışmaların ağırlıklı olarak Anglo-Sakson ülkelerinde yoğunlaştığına işaret etmektedir. Öte yandan, literatürde yayın sayısı görece daha düşük olan bazı ülkelerin yüksek atıf ortalamasına sahip olduğu görülmektedir. Bununla birlikte, uluslararası ortak yazarlık oranının %11,06 gibi düşük bir düzeyde olması program okuryazarlığı araştırmalarının daha çok ulusal düzeyde yürütüldüğünü ve uluslararası iş birliklerinin sınırlı kaldığını ortaya koymaktadır. Kurumlar açısından bakıldığında "University of Melbourne" en yüksek yayın sayısına sahip kurum olarak tespit edilmiştir. Bu kurumun ardından "The Chinese University of Hong Kong" ve "University of Sheffield" gelmektedir. Bu dağılım program okuryazarlığı araştırmalarının birkaç önde gelen yükseköğretim kurumunda yoğunlaştığını göstermektedir. Ayrıca kurumlar arası iş birliği ağlarının düşük yoğunlukta olması kurumsal ortaklıkların da sınırlı düzeyde gerçekleştiğini göstermektedir. Dergiler açısından değerlendirildiğinde "The Curriculum Journal" program okuryazarlığına ilişkin en fazla yayına yer veren dergi olarak öne çıkmaktadır. Bu dergiyi "Journal of Curriculum Studies" ve "Chemistry Education Research and Practice" izlemektedir. Bu durum program okuryazarlığı çalışmalarının çoğunlukla program incelemeleri, eğitim bilimleri ve disipline özgü öğretim odaklı dergilerde yayımlandığını göstermektedir.

Yazar analizinde hem en üretken hem de en fazla atıf alan yazarlar belirlenmiştir. Bu analiz literatürde belirli araştırmacıların alanın şekillenmesinde önemli etkiler oluşturduğunu göstermektedir. En üretken yazarların profesyonel gelişim, öğretmen bilgisi, program uygulanması ve öğretmen adaylarının program farkındalığı gibi konulara odaklandığı görülmektedir. Anahtar kavram analizi program okuryazarlığı literatürünün tematik odaklarını açık biçimde ortaya koymaktadır. Veri setinde en sık kullanılan anahtar kelimeler arasında "eğitim", "bilgi", "program", "öğretmenler", ve "program bilgisi" bulunmaktadır.

Tartışma

Bu çalışma, program okuryazarlığı alanının 1988–2025 yılları arasında giderek gelişen bir araştırma alanı hâline geldiğini göstermektedir. Bulgular, özellikle 2006 sonrasında artış gösteren yayınların program okuryazarlığının literatürde kuramsal ve uygulamaya dönük bir odak olarak güçlendiğine işaret ettiğini ortaya koymaktadır. Araştırmanın İngilizce metninde tartışıldığı üzere, bu gelişim özellikle öğretmenlerin programı anlamlandırma, karar verme ve uygulamaya aktarma süreçlerinin öğretim programlarının başarısı açısından merkezî bir rol oynamasıyla ilişkilidir (Aslan, 2018; 2019; Keskin ve Korkmaz, 2021). Çalışmada programın

amaçlandığı gibi uygulanabilmesi için öğretmenlerin program bileşenlerini doğru bir şekilde kavrama ve karar verme süreçlerinde yeterli bilgiye sahip olmaları gerektiği vurgulanmaktadır (Özkan, 2016; Wiles ve Bondi, 2007).

Elde edilen bulgular, ülkeler arasındaki üretkenliğin farklılaştığını, ancak program okuryazarlığının küresel bir araştırma alanı olarak büyüdüğünü göstermektedir. Ayrıca, araştırmaların büyük bölümünün tek ülke kapsamında yürütülmesi, uluslararası iş birliklerinin sınırlı kaldığına işaret etmektedir. Literatürde öne çıkan kavramların büyük ölçüde öğretmen bilgisi, program bilgisi ve pedagojik karar verme süreçleri etrafında yoğunlaştığı görülmektedir. Eğilim analizinde yer alan kavramların artışı, program okuryazarlığının öğretmen yetiştirme, öğretmen yeterlikleri ve program uygulama süreçleriyle daha bütünlüklü bir şekilde ilişkilendirildiğini göstermektedir.

Sonuç ve Öneriler

Bu çalışma 1988–2025 yılları arasında program okuryazarlığına ilişkin WoS kapsamında yayımlanan 208 makalenin incelenmesiyle alanın gelişim eğilimlerini, üretim merkezlerini ve kavramsal yönelimlerini ortaya koymaktadır. Bulgular program okuryazarlığı araştırmalarının özellikle 2006 sonrasında ivme kazandığını, yayınların coğrafi olarak belirli ülkelerde yoğunlaştığını ancak uluslararası ortak yazarlık oranlarının düşük olduğunu göstermektedir. Ayrıca anahtar kavram ve eğilim analizleri literatürün ağırlıklı olarak öğretmen bilgisi, program bilgisi ve öğretmen yetiştirme süreçleri etrafında şekillendiğini ortaya koymaktadır. Bu doğrultuda çalışma alanın yapısal özelliklerini görünür kılarken bazı sınırlılıkları da işaret etmektedir. Bu sınırlılıklar doğrultusunda gelecekte yürütülecek çalışmaların WoS dışındaki veri tabanlarını da kapsayacak biçimde genişletilmesi önerilmektedir. Ayrıca uluslararası ortak yazarlık oranlarının oldukça düşük olması nedeniyle farklı ülkeler ve kurumlar arasında ortak araştırmaların teşvik edilmesi alanın küresel etkileşimini güçlendirebilir. Anahtar kavram analizinde öğretmen bilgisi, program bilgisi ve öğretmen adaylarıyla ilgili çalışmaların öne çıkması program okuryazarlığının özellikle öğretmen eğitimi bağlamında önem taşıdığını göstermektedir. Bu nedenle gelecekteki çalışmaların öğretmenlerin programı anlama ve uygulama süreçlerine ilişkin niteliksel ve niceliksel incelemeleri derinleştirmesi alan yazının mevcut yönelimleriyle uyumlu olacaktır. Son olarak, çalışma yalnızca makale türündeki WoS yayınlarıyla sınırlı olduğu için farklı türdeki yayınların veya daha geniş bir zaman aralığının incelendiği bibliyometrik araştırmalar program okuryazarlığına ilişkin genel görünümü daha bütüncül biçimde tamamlayabilir.

International Journal of Curriculum and Instructional Studies

15(2), 2025, 183-210

www.ijocis.com

Adaptation of Curriculum by Classroom Teachers: A Case Study of Mathematics Curriculum[1]

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Keywords

Curriculum adaptation
Mathematics curriculum
Classroom teachers
Case study

Article Info:
Research Article

Received : 27-09-2024
Accepted : 25-12-2025
Published : 31-12-2025

DOI: 10.31704/ijocis.1557381

Abstract

The purpose of this study is to investigate the adaptation of the national primary school mathematics curriculum through the lesson plans designed and their implementations in class by classroom teachers and the factors affecting these adaptation processes. To achieve this purpose, a case study design was used. Using the maximum variation sampling method, data were collected from 12 classroom teachers in the central district of a city located in Türkiye's Central Anatolia Region. The data sources consisted of semi-structured interviews, lesson plans, weekly schedules, daily practice evaluation forms, teaching materials, lecture notes, student assignments, worksheets, activities, and supplementary resources. The thematic content analysis approach was used to analyze the data. The findings showed that teachers did not strictly adhere to the official curriculum; instead, they adapted it at a modest level. Their adaptations included extending content, omitting surface-level material, and replacing or revising content elements. Teachers´ adaptations of the curriculum were primarily affected by teacher-related factors, followed by student-, school-, parent-, and curriculum-related considerations.

To cite this article: Kılıç, B, & Peker Ünal, D. (2025). Adaptation of curriculum by classroom teachers: a case study of mathematics curriculum. *International Journal of Curriculum and Instructional Studies, 15*(2), 183-210. https://doi.org/10.31704/1557381

[1] This article is based on the first author's master's thesis entitled "Investigation of the process of adapting the mathematics curriculum of classroom teachers", completed at Yozgat Bozok University, Institute of Postgraduate Education, Department of Curriculum and Instruction under the supervision of the second author.

Introduction

Effective curriculum implementation is largely influenced by teachers´ planning, implementation, and evaluation of teaching and learning processes. Curricula are adapted by teachers for various reasons. According to Glatthorn (2000), there are seven types of curricula: recommended, written, taught, supported, learned, assessed, and implicit curricula, and it is important to achieve compatibility among different types of curricula to ensure student success and the achievement of outcomes. One may state that it is not usually possible to completely adhere to a curriculum in centralized education systems, such as in Türkiye (Ünver, 2021). It was reported that teachers did not exactly implement the existing curricula, but they instead altered these curricula according to various factors, including the structure and objective of their sessions, and student characteristics, knowingly or unknowingly (Bümen & Yazıcılar, 2020). While these adjustments are necessary for an effective teaching process, they may also lead to negative consequences. Therefore, it is crucial to investigate the adjustments teachers make, the reasons behind these adjustments, and their impact on teaching efficiency. This study is based on the assumption that curriculum adaptation is not a deviation from the official curriculum but as a natural outcome of a teacher's professional competence and agency. Teachers consciously or unconsciously make curricular decisions based on specific classroom conditions, subject matter, and student needs (Bümen & Yazıcılar, 2020). In our study, we built upon the idea that in a centralized educational system like Türkiye's, not only is perfect fidelity not possible, but a blind adherence to the curriculum can negatively impact a teacher’s creativity and the overall efficiency of the teaching process (Ünver, 2021). Adaptation is considered an inevitable process that enhances the curriculum's effectiveness and makes learning more contextually relevant.

In various studies, researchers have sought to identify the types of adjustments teachers make when they deviate from the curriculum (Drake & Sherin, 2006; Li & Harfitt, 2017). Yazıcılar and Bümen (2019) stated that the types of curriculum adaptations made by teachers included omitting, extending, and replacing or revising, thereby revealing patterns of curriculum adaptation. Studies conducted in Türkiye have shown that the most prevalently employed patterns of adaptation by teachers are "extension" (enriching the existing content, adding to it), "revision" (changing the order or content of targeted outcomes), and "omission" (skipping some topics or targeted outcomes, or discussing them superficially) (İlhan & Bümen, 2023; İlhan, 2022; Koç, 2022; Yazıcılar Nalbantoğlu, 2021; Bümen & Yazıcılar, 2020; Yazıcılar & Bümen, 2019). The usage frequency and style of these patterns may vary depending on some factors. It is seen that teachers make various adjustments due to factors such as the support provided by school administrators and families, the pre-service education of the teachers, the readiness levels of their students, and the curriculum literacy levels of the teachers (İlhan & Bümen, 2023; Karakuyu, 2023; Kasap Erdal et al., 2023; Uludağ Çınar, 2023).

While all subjects are important in the process of achieving the general goals of the Turkish national education system, mathematics education at the primary school level is of particular importance. This is because it involves mathematics skills used in daily life, forms the basis for other skills, and lays the foundations for the development of problem-solving and analytical thinking skills in students. However, considering that mathematics achievement levels in Türkiye are below the average of the Organisation for Economic Co-operation and Development (OECD) countries, it is clear that the quality of mathematics education needs to

be improved (OECD, 2023). Given that the mathematics curriculum is structured progressively in terms of learning outcomes and content and that prior knowledge is critical for future learning, it is important to pay special attention to the adaptation efforts made by teachers in the mathematics curriculum (Ministry of National Education-MoNE, 2018). Nevertheless, there are few studies conducted in Türkiye on the adaptations made by primary school teachers compared to other educational levels (e.g., Akbulut Taş, 2022; Bilgiç & Batu, 2023; Gelmez Burakgazi, 2020; Güzel Yüce, 2022; İlhan & Bümen, 2023; Kasap Erdal et al., 2023; Koç, 2022; Tokgöz Can & Bümen, 2021; Yazıcılar Nalbantoğlu, 2021).

Studies in the field of mathematics education have shown that teachers adapt the official curricula in various ways. Bümen and Holmqvist (2022) demonstrated that Turkish and Swedish primary school mathematics teachers adjusted their curricula through extensions, revisions, and omissions; however, their reasons for these adjustments were different from each other. Yazıcılar Nalbantoğlu (2021) found that a professional development program for middle school mathematics teachers improved the curriculum adaptation skills and awareness of teachers, and teachers took part in adaptations, especially omissions, more deliberately and frequently. Studies focusing on high school mathematics teachers have revealed that they implement adaptations such as omission, addition, time adjustment, and usage of different materials for reasons including the perceived needs of students, central examinations, and the education system, they implement these adaptations during classes even though they do not reflect them in their lesson plans, and their reasons for adaptations vary according to the student profiles of their schools (Yazıcılar & Bümen 2019; Yazıcılar 2016). Furthermore, Dikbayır (2018) reported that there was a moderate degree of compatibility among the designed, implemented, and assessed curricula for high school mathematics; however, teachers did not completely adhere to the designed curriculum due to reasons such as a lack of knowledge and physical resources. Dikbayır and Bümen (2016) demonstrated that 9th-grade mathematics teachers were unable to fully adhere to the curriculum's teaching and evaluation processes; instead, they made adaptations based on the characteristics of their students, and they did not utilize alternative measurement instruments. All these studies have demonstrated that during the mathematics education process, teachers actively intervene in curricula and make adaptations influenced by various factors, such as the flexibility of the curriculum, student needs, examination pressure, and professional development. In particular, considering the significant role that national exams play in the implementation process of curricula, it is important to understand the decisions teachers make during the curriculum adaptation process and the variables that influence this process. This helps identify the adaptations made by classroom teachers in mathematics classes, which, in turn, positively contribute to mathematics teaching and, consequently, student achievement (İlhan, 2022).

In line with this need, the aim of this study is to investigate the adaptations that classroom teachers make to the primary school mathematics curriculum during its implementation, as well as the factors influencing these adaptations in relation to the national curriculum, the lesson plans they design before classes, and the plans they implement during classes. In line with this general purpose, the following questions are addressed:

1. How do the official curriculum and the lesson plans designed by teachers differ with respect to their objectives, content, learning experiences, and evaluation components?

2. How do the lesson plans designed by teachers and the plans they implement in the classroom differ with respect to objectives, content, learning experiences, and evaluation components?

3. What are the factors affecting teachers´ adaptations of the national curriculum in the context of the lesson plans designed by them and the plans they implement?

Method

Research Design

In this study, a case study design was used to examine how classroom teachers adapt the primary school mathematics curriculum. According to Creswell (2013), a case study is a qualitative research design in which one or more cases, bound by time, are examined in depth using various data collection tools, and themes related to the cases are revealed. The case in this study is the mathematics curriculum and its adaptation, which is studied through multiple data sources.

The latest primary school mathematics curriculum was developed in 2018. The curriculum comprises learning outcomes organized under four main learning areas: Numbers and Operations, Geometry, Measurement, and Data Processing. Designed with a spiral structure based on the Basic Law of National Education No. 1739 and contemporary educational approaches, the curriculum aims to cultivate individuals who possess 21st-Century Skills, critical thinking abilities, and the capacity to relate mathematical concepts to daily life. It targets the development of students who can integrate mathematical language into their lives, demonstrate basic numerical and scientific reasoning, and possess self-confidence alongside moral integrity. The content is designed to progress across grade levels, starting from basic natural numbers and geometric shapes in the first grade to more complex operations, fractions, and data analysis by the fourth grade, while explicitly providing teachers with the flexibility to adapt instructional methods, material use, and assessment strategies according to student characteristics and environmental factors.

Participants

The participants are 12 classroom teachers working at public primary schools in the central district of a city located in Türkiye's Central Anatolia region, during the fall semester of the 2023-2024 academic year. Teachers were selected through correspondence with the Provincial Directorate of National Education regarding the study, and from among those who voluntarily wanted to participate in the study. Maximum variation sampling was employed to select participants (Yıldırım & Şimşek, 2021), considering differences in gender, seniority, classroom size, and grade level to include diverse participants in the study. Table 1 presents key characteristics of the participants.

Table 1

Characteristics of the Participants

Teacher	*Gender*	*Seniority (Year)*	*Classroom Size*	*Grade Level*
T1	Female	5	47	4
T2	Female	7	25	1

Table 1 (Continued)

T3	Female	8	38	4
T4	Female	4	25	1
T5	Female	4	48	1
T6	Female	17	33	4
T7	Female	12	24	1
T8	Female	5	30	3
T9	Female	28	20	4
T10	Male	13	18	2
T11	Female	21	28	1
T12	Male	10	10	4

Data Collection Instruments

Data were primarily collected through a Semi-Structured Interview Form, a Weekly Schedule Form and a Daily Practice Evaluation Form, supplemented by the primary school mathematics curriculum, teachers´ plans, lecture notes, and student assignments.

Semi-structured interview form, designed to identify the adaptations made by the participants in the curriculum and underlying factors, was established by reviewing the relevant literature (İlhan & Bümen, 2023; İlhan, 2022; Koç, 2022; Yazıcılar Nalbantoğlu, 2021; Bümen & Yazıcılar, 2020; Yazıcılar & Bümen, 2019), requesting the opinions of three experts in educational sciences, and the regulations of MoNE (2018). The interview form was finalized after a pilot implementation with two teachers.

Weekly schedule and daily practice evaluation forms were created by the researchers through the literature review and curriculum mapping techniques (Hale, 2008). Curriculum mapping primarily serves as a tool for visualizing the alignment and relationships between a curriculum's components. In this study, curriculum mapping is employed as an analytical tool to identify inconsistencies and adaptation points between the participants' lesson plans and the official curriculum. Specifically, Hale's (2008) classifications of horizontal and vertical alignment allowed us to systematically examine the changes the participants made to the objectives, content, and evaluation components within their lesson plans. This approach enabled us to pinpoint exactly the moments during the transition from the official curriculum to the lesson plans when participants engaged in specific adaptation practices, such as extension, omission, or revision. We focused on aligning the elements within a specific unit, as well as tracking how topics and objectives evolved over time to identify where participants expanded upon content (extension), superficially covered or skipped material (omission), and revised or replaced curricular elements to better suit their students.

The draft daily practice evaluation and weekly schedule forms were submitted to two curriculum experts to receive feedback and then piloted with two teachers.

These forms included areas such as “Code-Classroom of the Participant”, “Learning Area/Sub-Area”, and “Outcomes”, “Learning and Teaching Methods”, “Materials Used” (the participants were asked to specify supplementary resources and specific materials such as

video links and activity photos), and "Measurement and Evaluation" (with the photos of the instruments used, as well as explanations if necessary). In addition, it included the headings of "Date" and "Expected Time to Achieve the Outcome", as well as sections about a brief summary of the classes that day ("Please briefly describe the process that you followed in your mathematics classes today") and practices applied differently from the weekly schedule and the reasons for these differences ("Considering your teaching process today, what did you do differently from your previously planned weekly schedule, and what were the factors affecting your plans?"). Under the heading "Measurement and Evaluation", the participants were asked to provide reasons in cases when they had not implemented a practice planned beforehand.

Data Collection Procedures

Data were collected during the fall semester of the 2023-2024 academic year, with the participation of 12 classroom teachers from primary public schools in the central district of a city located in Türkiye's Central Anatolia region. First, data were collected using the daily evaluation and weekly schedule forms; which were completed by the participants. The participants were informed about the timing of completing the daily practice evaluation form, as well as the points to pay attention to while filling it out. After the form was filled out, and the targeted outcomes were completed, the notebooks of the students, the assignments/worksheets given to the students, textbooks, supplementary materials, and Education Information Network (EBA) materials were collected by visiting the schools of the teachers as supporting data.

After analyzing these materials, two interviews were conducted with the teachers. Before the interviews, the teachers were provided with information about the purpose of the interview, its expected duration, and the number of questions to be asked.

The primary school mathematics curriculum was downloaded from the website https://mufredat.meb.gov.tr/ on June 16, 2023, as the official document implemented by teachers.

Data Analysis

Data from the daily practice evaluation forms and interview transcriptions were transferred to a qualitative data analysis program. The content analysis was used through a codebook established based on the literature. Initially, a code list was developed based on the framework of factors affecting curriculum fidelity identified by Bümen et al. (2014) and the curriculum adaptation patterns outlined by Yazıcılar, Bümen, and Uslu (2021). At this stage, the relationships between the results obtained from the interviews with the participants and those obtained using the forms were also examined. Deductive and inductive processes were used in data analysis to work with codes, categories, and themes (Creswell & Plano Clark, 2014).

Deductive code list for curriculum adaptations included extension, omission, and revision. The codes for the factors affecting curriculum adaptation were teacher characteristics, student characteristics, education system, central examinations, curriculum characteristics, the school environment, and regional factors (Bümen et al., 2014). The inductive code list for curriculum adaptations involved the utilization of web-based applications, the inclusion of topics and objectives for different grade levels, and the implementation of additional activities. Their adaptations in the form of omission included superficial discussion of some topics and

objectives, skipping others, and not utilizing textbooks. Finally, their adaptations, in the form of revisions, involved discussing objectives under a different learning area and using methods that differed from those officially required by the objectives.

The teacher-related factors that affected curriculum adaptations included the teaching-learning approach adopted by the teacher, the teacher's attitude toward the curriculum, the teacher's classroom management skills, and psychological factors. The student-related factors included cognitive characteristics, physiological factors, differences in student levels, student absenteeism, and classroom accidents and injuries. The curriculum-related factors included textbook-curriculum compatibility, the structure of the curriculum, and compatibility between the curriculum and the preparedness of students. School-related factors included the physical structure of the school, the activities conducted at the school, the funding of the school, human resources, and differences in working hours. Parent-related factors consisted of the support provided to students by parents, the socio-economic structure of families, and the communication between parents and teachers.

In analyzing the interview data, the adaptations and influencing factors were examined to derive the codes. The consistency of the codes was assessed by comparing them with those used in similar previous studies to enhance the reliability of the analysis.

In our analysis of the weekly schedule and daily practice evaluation forms obtained from teachers, we employed a systematic and multi-layered approach. For the weekly schedule forms, we examined each targeted learning outcome and its taxonomic level, assessing whether the instructional process was designed in accordance with Bloom's taxonomy. We evaluated the appropriateness of the selected teaching methods and techniques, as well as the validity of the assessment strategies employed, specifically considering their alignment with the expectations set forth in the mathematics curriculum. Additionally, teachers were asked to provide detailed information regarding the supplementary resources referenced in their planning, as well as video and photographic records of the activities conducted during lessons. This enabled us to obtain more reliable data about the instructional process and to identify adaptations that teachers themselves may not have been consciously aware of.

For the daily practice evaluation forms, we sought to capture teachers' feedback regarding the fidelity of classroom implementation to the processes outlined in their weekly schedule forms. This enabled us not only to document the adaptations made by teachers but also to report the underlying reasons for these modifications. Furthermore, we identified deviations from the weekly plans and systematically analyzed these discrepancies.

Throughout this process, we addressed the following core questions during the analysis of the forms and their appendices:

1. Is alignment between the national curriculum and the teachers' weekly schedule forms evident in terms of targeted learning outcomes?
2. Is alignment between the national curriculum and the teachers' weekly schedule forms evident in terms of content?
3. Is alignment between the national curriculum and the teachers' weekly schedule forms evident in terms of the instructional process?

4. Is alignment between the national curriculum and the teachers' weekly schedule forms evident in terms of assessment?
5. Is alignment between the weekly schedule forms and the daily practice evaluation form evident in terms of targeted learning outcomes?
6. Is alignment between the weekly schedule forms and the daily practice evaluation form evident in terms of content?
7. Is alignment between the weekly schedule forms and the daily practice evaluation form evident in terms of the instructional process?
8. Is alignment between the weekly schedule forms and the daily practice evaluation form evident in terms of assessment?

Subsequently, examined the patterns of curriculum adaptation that emerged from these discrepancies and investigated the underlying factors contributing to such adaptations.

Trustworthiness

To establish credibility, measures such as prolonged engagement with participants, data triangulation, member-checking, and expert consultation were implemented. The draft form created for qualitative interview questions was reviewed by experts and revised based on their feedback. Additionally, the draft interview form was used in a pilot implementation with a group of teachers to determine whether the questions were understood correctly, leading to the final version of the form. This ensured that the questions were appropriately aligned with the aims of the study. The interviews were recorded, and after transcription, the recordings were analyzed. Points that were unclear in the responses of the participants were verified by them. The findings were supported by including direct quotes from the participants, providing detailed descriptions of the results. Furthermore, data triangulation was achieved through the use of a weekly schedule form, a daily practice evaluation form and a semi-structured interview form. Consistency was established through coherence in the design of data collection tools in line with the aim and design of the study, the data collection process, data analysis, and the reporting of findings.

Results

The results obtained from the analyses of the collected data are presented in this section based on the research questions.

Adaptation of the National Curriculum through Teachers´ Instructional Plans

Classroom teachers did not fully adhere to the official curriculum but made various adaptations such as extension, omission, replacement, or revision. In the context of extension, most participants utilized supplementary resources and used web-based applications. Most frequent adaptations were utilizing supplementary resources, followed by the utilization of web-based applications, incorporating topics and learning outcomes from a different grade level, associations with other subjects, and conducting additional activities. One statement that represents this adaptation process is below:

> I generally use some pages from the internet, and in fact, while filling out this form and creating the lesson plan, I included a few of them. I usually make use of these sources,

> and then I check if the material I obtained is suitable for the levels of my students, making reductions or additions as needed. We don't use textbooks at all. We always progress in teaching by using different resources. (Interview, T4)

In the context of extension, some teachers made adaptations by conducting extra activities and making connections to other subjects, while others addressed topics and achievements related to different grade levels.

> For example, let's say a topic I taught in fourth grade… It might have been forgotten, so I might go back and expand on the topic, such as fractions, if it had been overlooked. Since it might have been skipped over previously, and considering that a year has passed, it may have been forgotten, so I revisit that targeted achievement in more detail and provide examples for reminder purposes. (Interview, T9)

> In my third lesson, I will ask for the English equivalents of the mathematical results that come up during the math group competition game. (Weekly schedule, T10)

> Then, I will make the topic enjoyable and help students grasp it by using online interactive games. (Weekly schedule, T1)

In the context of the adaptations made by the teachers in terms of omission, most addressed the topic and targeted outcomes superficially, while some participants did not use the textbooks and made adaptations by omitting topics and some targeted outcomes. Furthermore, while some rarely ignored textbooks and targeted outcomes, most also made superficial adaptations to topics and targeted outcomes more frequently.

> Sometimes I skip topics. The reason is that I covered these topics last year and spent a lot of time on them, so I don't want to spend more time on them. Instead, we focus more on new topics that the students haven't learned before. For known topics, I generally skip or briefly address them. (Interview, T11)

In the context of replacement and revision, one teacher used a different teaching method required by the targeted outcome in the curriculum

> I said I don't change the position of the targeted outcomes, but actually, I do change them sometimes if I face difficulties. (Interview, T10)

The interview and daily practice evaluation data revealed that, overall, teachers adhered to the structural aspects of the mathematics curriculum, including content and goals. Nevertheless, they primarily implemented extensions to improve the learning and teaching process. All teachers occasionally made adaptations related to the topic and targeted outcomes. Based on these adaptations, while teachers tried to adhere to the stated aspects of the mathematics curriculum, they did not always follow them completely.

> I pay attention to these (aspects mentioned in the curriculum) because I believe it is important. Otherwise, there really is no lasting learning. (Interview, T8)

Adaptation of Lesson Plans through Classroom Implementation

The teachers made various adjustments between their lesson plans and their classroom implementation. They primarily made adaptations in the form of extension, followed by replacement or revision, and finally, omission.

In the context of extension, teachers mostly added supplementary activities, then included topics and objectives from different grade levels, and made connections with other subjects.

> At the end of this process, if there are students who do not understand the topic, I consider briefly reviewing the topic. Otherwise, since the topics are in a spiral form, they will struggle to understand future topics. (Daily practice evaluation, T1)

Regarding the replacement or revision, some teachers used different methods and materials than originally planned, others postponed previously planned activities, and others used time allocated for other subjects. They mostly used different methods and materials, followed by using time allocated for other subjects and postponing planned activities.

> I wanted to teach place value using spaghetti and Play-Doh, but the students ate the spaghetti. (Interview, T4)

> In my weekly planning, I stated that I would use the geometry board, but I couldn't find the material at the stationery store. Instead, I had the students do an activity using sticks and buttons. (Daily practice evaluation, T11)

Overall, the adaptations by teachers between their designed and implemented lesson plans involved adding supplementary activities and providing fewer activities than planned. This indicated that they made omissions in their lesson plans during implementation, but attempted to maintain a teaching process that represents the curriculum at a general level.

Factors Affecting Curriculum Adaptations

Teachers´ individual approach to learning and teaching was the most frequently cited factor in influencing their decisions on curricular adaptations.

> I might extend it for another week if necessary; in the first three days of the following week, I will try again to present the topic in a way that they can understand it. I don't give the targeted outcome within a specific period. Whenever they understand it, then I move on to the next topic. There is no point in moving on to another topic without understanding. Let them digest it first, then we can move on. (Interview, T1)

With a goal of student-centered teaching, teachers made various adaptations to the mathematics curriculum according to their students' understanding and learning speeds, thus adjusting the suggested durations and content or participating in teaching activities aimed at further learning.

In addition to their approach to learning and teaching, teachers made adaptations due to their attitudes toward the curriculum, their classroom management skills, and due to various psychological factors. Some participants had a flexible attitude toward the adaptation of the curriculum based on their professional experience. However, the general opinion among the participants was to adhere to the curriculum, but if adaptations were to be made, they should be aimed at reinforcing and enriching the teaching process. Nonetheless, it was also found that the participants, regardless of their seniority, experienced helplessness in implementing the curriculum. Additionally, classroom management skills emerged as another influential factor in their adaptations of the mathematics curriculum. Specifically, sudden situations occurring during classes influenced the implementation of the lesson plans and led to various modifications in the designed plans.

> I want to make changes. For example, when talking about primary school-level mathematics, very limited information is provided on geometry. I generally see that students can handle more, so additional content can be included in those areas. (Interview, T12)

Regarding the student-related factors, it was observed that most teachers made adaptations primarily based on the cognitive characteristics of their students. Students' attitudes toward mathematics, participation in classes, learning difficulties, attention deficits, and self-discipline significantly influenced the adaptations.

> I have students do their homework in the classroom instead of leaving it at home because when I leave it, it usually comes back torn or with food stains. They don't care as much, or they bring it back scribbled. I have them do it one by one in the classroom. (Interview, T5)

In terms of school-related factors affecting the adaptations made to the designed and implemented lesson plans, teachers made adaptations due to the physical structure of their schools. Teachers faced issues in obtaining materials for classes due to limitations in school resources and tried to compensate for these deficiencies through their own efforts. Furthermore, malfunctions of equipment like smart boards, which were used extensively by teachers to capture the attention of their students and compensate for the lack of tangible materials, and power outages led the participants to make various adjustments in the implementation of their designed lesson plans.

> There is no math-related material at the school, so I have to either make it myself or show visuals to the children. There are no ready-made materials. For example, we are thinking of buying materials for [teaching] prisms and other topics in the future. (Interview, T3)

Regarding the parent-related factors, most teachers made adaptations in relation to the support of parents for students. The level of parental involvement and support in the education of their students affected the adaptations of the participants in the time allocated for specific topics or learning outcomes and the quality of the activities they conducted.

> …but textbooks are inadequate for the child, and parents do not buy additional resources. They see spending on the child's education as unnecessary. Although a few parents may buy them, I cannot advance with just those books for some students, which disrupts the classroom environment as others fall behind. (Interview, T5)

Some teachers made adaptations due to the socio-economic status of their students' families and communication issues with parents. Additionally, challenges such as communication issues with the families of foreign students, students experiencing adaptation problems, lack of family integrity, various family issues, and the quality of communication between parents and teachers led to adaptations in topics or targeted learning outcomes in the classes held by the participants.

Regarding the curriculum-related factors affecting the adaptations made to the designed and implemented lesson plans of the participants, teachers made adaptations due to the alignment of the textbook with the curriculum, the structure of the mathematics curriculum, and the lack of suitability of the curriculum for student readiness. The findings showed that

because the curriculum was not suitable for the levels of students and as there was a lack of alignment between the textbook and the curriculum, the participants supported their teaching processes using various additional resources, revisited the targeted learning outcomes of the previous year due to gaps in the structure of the curriculum, or placed learning outcomes in different learning areas that they believed in which their students would understand better. Some participants noted that the structure of the mathematics curriculum progressed more smoothly compared to the curricula of other subjects. Frequent adaptations made to extend content were related to the grasping speed of students regarding the targeted learning outcomes foreseen in the curriculum, as well as the approaches of the participants to learning and teaching, and the spiral nature of the targeted learning outcomes or the characteristics of the topic.

Discussion

The findings reveal a notable discrepancy between the stated efforts of the participants to align their designed lesson plans with the official curriculum and the way this alignment was actually established in practice. Although the participants reported in the interviews that they tried to adhere to the curriculum, their responses in Daily Practice Evaluation Forms indicated that this adherence was shaped not through direct engagement with the official curriculum, but rather indirectly through textbooks and other supplementary materials. Similarly, Güzel Yüce (2022) and An (2020) found that teachers tried to adhere to the official curriculum by following the order of topics and objectives in the textbooks. While following the textbook and diverse resources is a positive behavior in terms of commitment to the goals and content of the mathematics curriculum, it does not guarantee that teachers will perform teaching and assessments in line with the cognitive processes required by the objectives (Tarr et al., 2006).

It was observed that the participants' engagement was not with the primary curriculum document itself, but rather with its interpretation as presented in textbooks and supplementary resources. This reveals a prevalent behavioral pattern where the textbook is treated as a substitute for, rather than a guide to, the official curriculum. Teachers may follow the sequence of topics and objectives presented in the textbook, yet often remain unaware of the broader philosophical underpinnings, overarching goals, and specific cognitive processes mandated by the actual curriculum document. Therefore, our finding is not merely that teachers use textbooks—a point also noted in studies by Güzel Yüce (2022) and An (2020). Rather, we highlight that this reliance often becomes an exclusive one, effectively rendering the textbook the de facto curriculum. This disconnect is crucial, as it explains why adaptations often fail to align with the curriculum's intended cognitive complexity, a point further elaborated by Tarr et al. (2006). This is because, as found in this study, even though teachers frequently use the curriculum and express opinions that they adhere to it, their awareness of adapting and adhering to the curriculum in the teaching process is limited. This leads to adaptations that are limited and of low efficiency (Dikbayır, 2018; Karaca, 2022; Tan Şişman, 2021). As a result, as seen in this study and various others, teachers often make adjustments in learning-teaching processes and assessment components that do not align with the cognitive processes required by the objectives or the specifics stated in the curriculum (Avcu & Haser, 2020; Dikbayır & Bümen, 2016; Kara et al., 2017; Karabacak, 2018; Karaca, 2022; Kurz et al., 2009; Miller Day et al., 2013; Seitz, 2017; Uludağ Çınar, 2023). Hence, it can be stated that teachers generally act

more autonomously in making adaptations because the official curriculum contains more general expressions about learning, teaching, and assessment elements than about specific goals and content.

Our finding that teachers exhibit greater autonomy in teaching processes and assessment rather than in content planning is an anticipated outcome within Türkiye's centralized curriculum system. However, this study moves beyond simply stating this reality to explore how teachers strategically navigate their practice within these systemic constraints. The adaptations observed in this process are not merely isolated pedagogical choices. They represent a delicate balancing act in response to powerful institutional and socio-political pressures. For instance, the institutional pressure from school administrations and the socio-political emphasis on high-stakes centralized exams often compel teachers to prioritize content coverage over in-depth learning. This context explains why adaptations like 'superficial treatment' are common. They allow teachers to meet the formal requirement of 'finishing the book' while creating space for other topics they deem more important. Similarly, a teacher's decision to use an additional web-based application (an adaptation in process) can be interpreted as an act of reclaiming professional autonomy in a system that rigidly defines content. Thus, by examining these micro-level classroom adaptations, our study sheds light on the macro-level discrepancies between centrally mandated policies and the practical realities of teaching, as well as between the demand for curriculum fidelity and the enduring professional drive for autonomy.

Most participants in this study made adaptations in their designed lesson plans concerning the official curriculum in the form of extension, followed by omission, and finally, replacement or revision. Bümen and Holmqvist (2022) found that teachers most frequently made adaptations in the form of extension, followed by replacement or revision and omission. In contrast, Akbulut Taş (2022) reported that teachers frequently made adaptations referred to as replacement. Differences in findings obtained across various studies may be attributed to variations in student and teacher characteristics.

The findings also showed that teachers benefited from supplementary resources and web-based applications. Most frequent adaptations involved using supplementary resources and web-based applications, followed by incorporating topics and objectives from different grade levels, relating content to other subjects, and conducting additional activities. Various studies have indicated that teachers frequently use additional activities and resources to support teaching and allocate more time to certain subjects (Kasap Erdal et al., 2023; Miller Day et al., 2013; Muzata & Mahlo, 2019; Otukile Mongwaketse et al., 2016; Ünsal & Çetin, 2019; Yazıcılar, 2016; Yazıcılar & Bümen, 2019). It is noted that teachers prefer various commercial applications over utilizing the (EBA) in Türkiye. This suggests that teachers incorporate various extracurricular activities through the use of non-standard applications. These findings suggest that the use of web-based applications should be monitored, and their contributions to the teaching process should be effectively examined.

In the context of omission, most participants in this study made adaptations in the form of superficial discussions of topics and objectives, while less than half of them skipped the use of textbooks or omitted certain topics and objectives. Various studies have shown that teachers adapt by not using textbooks, partially addressing content, and downplaying objectives to lower class levels (Kasap Erdal et al., 2023; Li & Harfitt, 2017; Miller Day et al., 2013). This may be due to the low level of curriculum awareness among the participants and factors such as

their desire for greater autonomy. Indeed, some studies have shown that the awareness and autonomy of teachers regarding curriculum adaptations have various effects on the adaptations they make (Tokgöz Can & Bümen, 2021; Yazıcılar Nalbantoğlu, 2021). A closer examination of the omission pattern reveals a critical distinction between superficially discussing topics and omitting them entirely. This distinction is not arbitrary. Rather, it highlights the nuanced and highly contextual nature of teachers' practical decision-making. Superficial treatment often appears to be a pragmatic compromise. Teachers resort to this strategy for topics they perceive as mandatory but for which they lack sufficient time or believe their students are not ready for in-depth engagement. It is a way of acknowledging the official curriculum while yielding to classroom realities. In contrast, outright omission signals a more definitive and autonomous pedagogical judgment. This adaptation is typically made when teachers deem a topic irrelevant to the immediate needs of their students, redundant with other material, or simply unteachable due to a lack of resources or extreme time constraints.

In this study, within the scope of the replacement or revision pattern, fewer than half of the participants used different teaching processes than required by the objectives of the curriculum or placed the objectives under different learning areas. Previous studies have suggested similar adaptation patterns, such as changing the amount of time allocated to the subject or using different resources and materials (Miller Day et al., 2013; Yazıcılar & Bümen, 2019). It can be argued that in this study, the participants were reluctant to make reorganizations in their lesson plans during the planning process. However, in some studies, it was found that teachers frequently resorted to adaptations in the form of reorganization (Akbulut Taş, 2022; Muzata & Mahlo, 2019). This finding may indicate potential challenges in the literacy levels of the participants in the curriculum. However, explaining this phenomenon solely through curriculum literacy might be insufficient. A more holistic perspective is offered by the concept of Pedagogical Design Capacity (PDC), which refers to a teacher's ability to perceive and mobilize existing resources to design instructional experiences (Brown, 2009). From this viewpoint, the tendency of teachers to adapt the curriculum might not just signal a lack of knowledge, but rather an active, albeit sometimes inaccurate, attempt to design learning environments they deem more suitable for their students. For instance, reorganizing objectives could be seen as an exercise of their PDC, where they repurpose curricular elements based on their own pedagogical reasoning. While our study was not designed to measure PDC directly, this framework provides a valuable lens for interpreting our findings cautiously, suggesting that teacher adaptations are complex acts of design, not merely errors in fidelity.

It was found that most participants did not adhere to the lesson plans they designed and made more frequent adaptations in their implemented lesson plans than in their designed lesson plans. This situation shows that teachers are influenced by different variables both during the lesson plan design process and the implementation of the designed lesson plan. A teacher who lacks sufficient information about the student group during the lesson plan design process may create a plan unsuitable for the group, and upon facing difficulties in implementing this plan in the classroom, they may be forced to make alterations. Similarly, this influence can be positive (e.g., adjusting the plan according to student reactions, briefly covering topics once comprehension is ensured) or negative (e.g., forming the perception that "students will not understand anyway" or being affected by unforeseen classroom events like external noise, temperature issues, the teacher's fatigue, or incidents like a student having a nosebleed). These factors can also lead to both beneficial and detrimental impacts on the

delivery of classes (Güzel Yüce, 2022). Various studies have also revealed that teachers do not adhere strictly to their designed lesson plans but make many adjustments to their plans (Aykaç & Ulubey, 2012; Öztürk, 2012; Štolcová et al., 2023; Yazıcılar, 2016).

When examining the extensions made between the implemented and designed lesson plans by classroom teachers, it was found that most participants included additional activities and topics or objectives from different grade levels to reinforce teaching. Apart from these observed adaptation patterns, less than half of the participants also made adaptations such as relating content to other subjects. Moreover, in examining the frequencies of adaptations made within the scope of extension, it was found that the most frequent adaptations involved conducting additional activities, including topics or objectives from different grade levels, and relating content to other subjects. Findings from related studies have indicated that, similar to these findings, teachers often include additional activities to enhance the understanding of the topic and promote further learning (Kasap Erdal et al., 2023; Li & Harfitt, 2017; Yazıcılar, 2016).

In the context of the adaptations made between the implemented and designed plans by the participants within the scope of the replacement or revision pattern, it was determined that half of the participants used different methods and materials than planned, while fewer than half postponed planned activities or used time allocated to other subjects. The use of different methods than planned by the participants was interpreted as that they designed methods that were not suitable for the classroom dynamics, but they felt the need to make changes when they thought their students would have difficulties during the in-class implementation process. This may suggest that the participants were not determined, and they may not have been familiar with the levels of their students, the facilities of their classrooms, or even themselves. Teachers may also fail to implement the materials they have designed beforehand for various reasons, primarily including economic constraints (Batmaz, 2017).

Within the scope of the omission pattern, the adaptations made by the participants between their implemented and designed lesson plans involved the inclusion of fewer activities than planned in the designed plans. Although the participants seemed hesitant about omission during the interviews, it was revealed that most could not fully implement their designed curriculum due to different factors during the process of teaching their classes.

Among the factors influencing the adaptations made by the participants of this study between their designed and implemented lesson plans, the most prominent factors were teacher-related factors, followed by student-related, school-related, curriculum-related, and parent-related factors. Despite the significant effects of these factors on the curriculum adaptations of the participants, no findings related to regional and centralized exam-related factors affecting their curriculum adaptations were encountered in this study. This could be due to the fact that the participants worked at the primary school level, and no significant regional factors affecting curriculum adaptations were observed.

The teacher-related factors influencing the adaptations between their designed and implemented lesson plans included the learning and teaching approach they held as a significant factor with an impact on their adaptations. Since teachers were inclined to adopt student-centered teaching processes, they made various adaptations based on the comprehension and learning speed of their students; they skipped over some topics, or they expanded the official curriculum's suggested class durations and content scope for further

learning. Previous studies have also demonstrated that the learning and teaching approaches of teachers are some of the influential factors in their curriculum adaptation processes (Baş & Şentürk, 2019; Gelmez Burakgazi, 2020; İlhan & Bümen, 2023; Li & Harfitt, 2017; Meidl & Meidl, 2011; Öztürk Akar, 2005; Tan Şişman, 2021). Similar studies have also indicated that the attitudes of teachers toward the curriculum and their competencies related to curriculum literacy are the most frequently encountered teacher-related factors in curriculum adaptation processes (Aykaç & Ulubey, 2012; Bilgiç & Batu, 2023; Dikbayır, 2018; Güzel Yüce, 2022; İlhan & Bümen, 2023; Li & Harfitt, 2017; McCarthey & Woodard, 2018; Muzata & Mahlo, 2019; Roehrig et al., 2007; Tekbıyık & Akdeniz, 2008). Within the scope of this study, another factor affecting the curriculum adaptations was classroom management skills. Teachers made various adjustments to their designed lesson plans due to sudden developments during their classes. Some effectively coped with these sudden situations and managed to implement their designed lesson plans efficiently, while others postponed the activities or conducted their classes in a more superficial manner.

Considering the student-related factors influencing the adaptations made by the teachers between their designed and implemented lesson plans, most made adaptations in line with the cognitive characteristics of their students. The cognitive preparedness of students, their attitudes toward mathematics, their participation in the classroom, learning difficulties, attention deficits, and self-discipline had a significant impact on the curriculum adaptations of the participants. It was considered that the participants attempted to implement their plans with an attitude focusing on lecturing and expecting anyone who was supposed to learn to learn. Other studies have also pointed out that the cognitive and affective characteristics of students are frequently encountered factors influencing the adaptation processes of teachers (Bümen & Yazıcılar, 2020; Karaca, 2022; Kurz et al., 2009; Li & Harfitt, 2017; McCarthey & Woodard, 2018; Miller Day et al., 2013; Molla & Lee, 2012; Ünsal & Çetin, 2019; Yazıcılar, 2016; Yazıcılar & Bümen, 2019).

School-related factors influencing the adaptations included the physical structure of the school in most cases. Teachers faced challenges in procuring materials for their classes, and therefore, they tried to compensate for this deficiency by making adaptations within their means. While some took precautions in this process, others postponed activities or conducted their classes more superficially through direct instruction. The results of previous studies have suggested that the physical infrastructure and facilities of a school are among the factors influencing the curriculum implementation processes of teachers (Arslan Çelik, 2020; Dikbayır, 2018; Gelmez Burakgazi, 2020; Gürbüz, 2020; İlhan, 2022; Öztürk Akar, 2005; Ünsal & Çetin, 2019).

The parent-related factors influencing the adaptations included the support provided by parents to their students. Parental support affected the time allocated to a particular topic or objective, as well as the quality and efficiency of the activities conducted. In addition to parental support. About half of the participants made adaptations due to the socio-economic structure of their students' families, while fewer than half made some adaptations due to factors such as communication between parents and teachers. Furthermore, due to the presence of foreign students in their classes, the participants experienced communication and adaptation problems with both parents and students, and they made various adjustments, such as simplifying or enhancing the topic or objective, due to issues related to family integrity, some

family problems, and the quality of their communication with parents. Although not frequently encountered in this study, relevant studies showed that the socio-economic levels of parents are among the influential factors on the adherence of teachers to curricula, as well as their adaptations (Güleş, 2022; Özbaş, 2018).

In the context of curriculum-related factors influencing the adaptations between their designed and implemented lesson plans, teachers made adaptations due to factors such as textbook-curriculum alignment, the structure of the mathematics curriculum, and the alignment between the curriculum and the preparedness levels of students. the participants adapted the curriculum because they did not find the official curriculum suitable for the levels of students. They supported teaching with different supplementary resources due to inconsistencies between the textbook and the curriculum. They made adaptations such as revising objectives from previous years or reorganizing objectives under different learning areas and changing their sequence, due to various gaps in the structure of the curriculum. It has been reported that teachers experience problems in implementing official curricula or make adaptations for the reasons including but not limited to those mentioned above (Akbulut Taş, 2022; Arslan Çelik, 2020; Asri, 2018; Bümen & Yazıcılar, 2020; Dikbayır & Bümen, 2016; Döş et al., 2017; Dursun, 2022; Gelmez Burakgazi, 2020; Hacısalihoğlu Karadeniz, 2011; İlhan, 2022; İlhan & Bümen, 2023; Kaya et al., 2012; Li & Harfitt, 2017; Öztürk, 2012; Tan Şişman, 2021; Tokgöz Can & Bümen, 2021; Turan Özpolat, 2015; Uludağ Çınar, 2023; Yeşilpınar Uyar & Eti, 2022).

Conclusion and Implications

The main conclusion of this study is that while teachers express a strong commitment to the national curriculum, their adherence is mediated almost exclusively through textbooks. However, the textbook serves not merely as a resource but as the de facto curriculum. This commitment may create a disconnect; while the sequence of topics is maintained, the deeper philosophical goals and specific cognitive processes mandated by the official curriculum are often overlooked.

The findings demonstrate that curriculum adaptation is not a static but a dynamic process that evolves from the planning to classroom implementation. In the design phase, adaptations are largely shaped by the availability of resources and the textbook's structure. However, during implementation, the implemented curriculum diverges significantly from the designed. Teachers frequently engage in extension, incorporating supplementary materials and web-based applications as a primary form of adaptation. This suggests that teachers are actively seeking to bridge the gap between curriculum goals and the concrete realities of their students' needs.

These adaptations are not arbitrary deviations but are sophisticated responses to a complex ecology of factors. Teacher-related factors, student-related factors, and school-related factors collectively shape the instructional process. The discrepancy found between designed and implemented lesson plans underscores that teachers are often forced to negotiate between the rigid demands of a centralized system and the immediate pedagogical needs of their students.

Several implications for educational policy and practice emerge. First, shift teacher professional development from textbook-centered training to curriculum literacy, enabling teachers to understand and utilize the curriculum document as their primary guide. This process also enables the implications to support teachers in developing pedagogical design capacity by focusing on designing for flexibility, equipping them to create adaptable lesson plans that cater to student variability and contextual constraints. On the other hand, according to the ministry several improvements on curriculum materials are necessary. Rigorously scrutinize the alignment between textbooks and the official curriculum, ensuring that textbooks reflect the curriculum's pedagogical approach and cognitive complexity. Thus, enable the curriculum to be understood by teachers. Educational technologies are also emerging and empowering in today's classroom settings. Educational technologies are increasingly emerging as transformative tools that empower both teachers and students in today's classroom settings. Therefore, it is essential for teachers not only to understand the pedagogical potential of these applications but also to integrate them effectively into their instructional practices. By doing so, teachers can enhance student engagement, personalize learning experiences, and foster the development of 21st-century skills. Moreover, the ability to critically select and utilize appropriate digital resources enables teachers to bridge the gap between curriculum goals and the diverse needs of their students, ultimately contributing to more effective and meaningful learning outcomes.

Author Contributions

Berkay Kılıç: Conceptualization, literature review, methodology, data collection, data analysis, writing and editing original draft, validation and interpretation.

Dilşat Peker Ünal: Conceptualization, data analysis, writing and editing original draft, validation and interpretation.

Declarations

Ethical Approval and Informed Consent

This study was approved by Yozgat Bozok University Institutional Ethical Review Board. All procedures in this study were conducted in accordance with Yozgat Bozok University Institutional Review Board's approved protocols. Written informed consent was obtained from the participants for their anonymized information to be published in this article.

Supplemental Material

There are no supplemental materials for this article.

Disclosure of AI Use

Google Gemini generative artificial intelligence tool was utilized for translation and proofreading in the preparation of this article.

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Uluslararası Eğitim Programları ve Öğretim Çalışmaları Dergisi
15(*2*), 2025, 183-210
www.ijocis.com

TÜRKÇE GENİŞ ÖZET

Sınıf Öğretmenlerinin Program Uyarlamaları: İlkokul Matematik Dersi Öğretim Programına İlişkin Bir Durum Çalışması

Giriş

Eğitim programlarının belirlenen hedeflere ulaşmasını sağlamak, etkisini belirlemek ve verimini artırmak için planlama, uygulama ve değerlendirme süreçlerinin birbiri ile uyumlu olması gerekmektedir. Bu uyumun sağlanmasında en önemli görev programın uygulayıcısı olan öğretmenlere düşmektedir. Nitekim öğretim programları, uygulama sürecinde çeşitli gerekçelerle öğretmenler tarafından uyarlanmaktadır. Öğretmenlerin programa uymadıkları durumlarda yaptıkları uyarlamaların türleri, çeşitli çalışmalarda belirlenmeye çalışılmıştır (Drake & Sherin, 2006; Li & Harfitt, 2017). Yazıcılar, Bümen ve Uslu (2021) tarafından gerçekleştirilen bir çalışmada, öğretmenlerin yaptıkları program uyarlama örüntülerinin, atlama, genişletme ve yeniden düzenleme şeklinde olduğu belirtilmiş ve bu sayede program uyarlama örüntüleri ortaya konulmuştur. Program uygulama sürecine ilişkin araştırmalar incelendiğinde, okul yöneticileri ve aileler tarafından programın uygulamasına verilen destek, öğretmenlerin hizmet öncesi eğitimi, öğrencilerin hazırbulunuşluk düzeyleri ve öğretmenlerin program okuryazarlık düzeyleri gibi faktörler öne çıkmaktadır (İlhan & Bümen, 2023; Karakuyu, 2023; Kasap Erdal et al., 2023; Uludağ Çınar, 2023). Bu nedenle öğretmenler tarafından yapılan uyarlamaların neler olduğu, hangi sebeplerden kaynaklandığı ve bu uyarlamaların öğretim verimliliğine etkileri incelenmelidir.

Eğitim programlarının amaçlarına ulaşma sürecinde bütün dersler önem taşımaktadır ancak Türkiye'deki matematik başarısının PISA bulguları ve Ekonomik İşbirliği ve Kalkınma Örgütü [OECD] ülkelerinin ortalaması (OECD, 2023) altında olduğu göz önünde bulundurulduğunda, matematik öğretiminin ayrıca önem kazandığı söylenebilir. Bu nedenle bu araştırmada, sınıf öğretmenlerinin ilkokul matematik dersi öğretim programını uygulama sürecinde; resmî program, dersten önce tasarladıkları plan ve ders esnasında uyguladıkları plan ile gerçekleştirdikleri uyarlamalar ve bu uyarlamalar üzerinde etkili faktörlerin incelenmesi amaçlanmıştır. Bu genel amaç doğrultusunda aşağıdaki araştırma sorularına cevap aranmıştır:

1. Resmî öğretim programı ile öğretmenlerin ders planları; amaç, içerik, öğrenme-öğretme süreçleri ve değerlendirme ögeleri açısından ne tur farklılık göstermektedir?

2. Öğretmenlerin ders planları ile sınıfta uygulama amaç, içerik, öğrenme-öğretme süreçleri ve değerlendirme ögeleri açısından ne tür farklılık göstermektedir?

3. Öğretmenlerin ders planlarında ve uygulamada resmî öğretim programından yapılan uyarlamaları etkileyen faktörler nelerdir?

Yöntem

Araştırmada nitel araştırma yöntemlerinden durum çalışması deseni kullanılmıştır. Araştırma soruları kapsamında veriler, 2023-2024 eğitim-öğretim yılı güz döneminde, İç Anadolu bölgesinde bulunan bir ilin merkez ilçesinde, ilkokul düzeyinde görev yapan 12 sınıf öğretmeninin katılımı ile elde edilmiştir. Katılımcılar maksimum çeşitlilik örnekleme yöntemi ile belirlenmiştir. Verilerin toplanması için yarı yapılandırılmış görüşme formu, haftalık planlama ve günlük uygulama değerlendirme formu yanında öğretmenlerin öğretim sürecinde yararlandıkları materyaller, öğrenci ödevleri, çalışma kâğıtları kullanılmıştır. Nitel verilerin analizinde alanyazından faydalanıp oluşturulan kod kitapçığı ile içerik analizi yürütülmüştür. Veri analizinde tümdengelimsel ve tümevarımsal süreçler birlikte yürütülmüş ve verilerin önceki araştırma bulgularıyla eşleştirilmesi aynı zamanda bu araştırmaya özgü kod, alt tema ve temaların da açığa çıkarılması sağlanmıştır (Creswell & Plano Clark, 2014). Araştırmanın geçerlik ve güvenirliğini sağlamak amacıyla katılımcılarla uzun süreli etkileşim, veri çeşitlemesi, katılımcı teyidi, uzman görüşü alınması yönünde çalışmalar yapılmıştır.

Bulgular

Elde edilen bulgulara göre katılımcı öğretmenlerin resmî programa tam olarak uymadıkları, özellikle matematik öğretim programının öğretim sürecinde çeşitli uyarlamalar yaptıkları görülmektedir. Bu uyarlamalara ilişkin frekanslar incelendiğinde katılımcı sınıf öğretmenlerinin sırasıyla en çok genişletme, ardından atlama ve son olarak yeniden düzenleme uyarlamaları yaptıkları belirlenmiştir. Genişletme kapsamında gerçekleştirilen uyarlama sıklıkları incelendiğinde sırasıyla en çok yardımcı kaynaklardan faydalanma, web tabanlı uygulamalardan faydalanma, farklı bir sınıf düzeyine ait konu ve kazanıma yer verme, diğer derslerle ilişkilendirme, ek etkinlikler yaptıkları; atlama örüntüsü kapsamında sırasıyla en çok kazanımı yüzeysel ele aldıkları görülürken ders kitabı kullanmama ve konu/kazanımı eleme şeklinde uyarlamalar gerçekleştirdikleri; yeniden düzenleme şeklinde uyarlamalar yapma konusunda çekimser davrandıkları söylenebilir.

Araştırmaya katılan sınıf öğretmenleri uyguladıkları programda kendi hazırladıkları planlara da tam olarak bağlılık gösterememekte ve uyarlamalar yapmaktadırlar. Bu uyarlamalara ilişkin frekanslar incelendiğinde katılımcı öğretmenlerin sırasıyla en çok genişletme, daha sonra yeniden düzenleme ve atlama şeklinde uyarlamalar yaptıkları görülmektedir. Genişletme örüntüsü kapsamında yapılan uyarlamalar incelendiğinde sırasıyla en çok etkinlikler ekleme, farklı bir sınıf düzeyine ait konu ve kazanıma yer verme, diğer derslerle ilişkilendirme; yeniden düzenleme örüntüsü kapsamında sırasıyla en çok planlanandan farklı yöntem ve materyalleri kullanma, başka bir derse ait saati kullanma, planlanan etkinliği erteleme yapıldığı belirlenmiştir. Atlama örüntüsü kapsamında ise katılımcı öğretmenlerin büyük çoğunluğunun planlanandan daha az etkinliğe yer verdiği görülmektedir.

Katılımcı sınıf öğretmenlerinin planladığı ve uyguladıkları programlar ile gerçekleştirdikleri uyarlamaları etkileyen çeşitli faktörler incelendiğinde en fazla öne çıkan faktörün öğretmenden kaynaklı faktörler olduğu, ardından öğrenciden kaynaklı, okul kaynaklı, veli kaynaklı, öğretim programı kaynaklı olduğu görülmüştür. Katılımcı sınıf öğretmenlerinin gerçekleştirdikleri uyarlamalar üzerinde öğretmenlerin öğrenme ve öğretme yaklaşımının, öğrencinin bilişsel özelliklerinin, okulun fiziki altyapısının, velilerin öğrenciye desteğinin ve ailenin sosyo ekonomik

yapısının programın öğrenci hazırbulunuşluğuna uygun olmamasının uyarlamalar üzerinde en sık görülen alt faktörler olduğu görülmektedir.

Tartışma ve Sonuç

Araştırma kapsamında yapılan görüşmelerden elde edilen bulgular incelendiğinde katılımcı öğretmenlerin planlarında resmî programa bağlılık sergilemeye çalıştıkları, fakat bu bağlılığı doğrudan resmî program ile etkileşime girmektense dolaylı olarak ders kitapları ve diğer yardımcı kaynaklar üzerinden sağlamaya çalıştıkları görülmektedir. Uyarlamaların görülme sıklıkları incelendiğinde de sırasıyla en çok genişletme daha sonra atlama ve yeniden düzenleme yapıldığı görülmüştür. Bümen ve Holmqvist (2022) tarafından gerçekleştirilen araştırmada sınıf öğretmenlerinin en çok genişletme yaptıkları, daha sonra yeniden düzenleme ve atlama şeklinde uyarlamalar gerçekleştirdikleri görülmüştür. Akbulut Taş (2022) tarafından yapılan araştırmada ise öğretmenlerin genellikle yeniden düzenleme olarak adlandırılan uyarlamaları daha sık bir şekilde gerçekleştirdiklerine rastlanmıştır. Bu bulgulardan görüldüğü üzere öğretmenlerin gerçekleştirmiş oldukları uyarlama örüntüleri farklı sıklıktadır.

Bulgular, öğretmenlerin çoğunun planlarına bağlı kalamadığını ve uyguladıkları programda sıklıkla uyarlamalar yaptıklarını göstermektedir. Bu kapsamdaki uyarlamaların çoğunun genişletme, daha sonra yeniden düzenleme ve atlama şeklinde olduğu ve ders esnasında çeşitli değişkenlerin öğretim sürecine dâhil olmasından dolayı doğaçlama bir şekilde gerçekleştiği söylenebilir. Çeşitli araştırmalar incelendiğinde de öğretmenlerin tasarladıkları programa sadık kalamadıkları ve planları üzerinde çeşitli uyarlamalar yaptıkları görülmüştür (Aykaç & Ulubey, 2012; Öztürk, 2012; Štolcová vd., 2023; Yazıcılar, 2016). Konuyu atlama (omission) örüntüsünün daha yakından incelenmesi, konuları yüzeysel olarak işlemek ile tamamen çıkarmak arasında kritik bir ayrım olduğunu ortaya koymaktadır. Bu ayrım keyfi olmaktan ziyade, öğretmenlerin pratik karar verme süreçlerinin incelikli ve son derece bağlamsal doğasını vurgulamaktadır. Yüzeysel işleme, genellikle pragmatik bir uzlaşma olarak ortaya çıkmaktadır. Öğretmenler bu stratejiye, zorunlu olarak algıladıkları ancak yeterli zamana sahip olmadıkları veya öğrencilerinin derinlemesine bir öğrenmeye hazır olmadığına inandıkları konular için başvurmaktadır. Bu, uyarlama öğrencilerin hazırbulunuşlukları ile resmî program arasında denge kurma çabası olarak yorumlanabilir. Buna karşılık, bir konuyu tamamen atlama, daha kesin ve özerk bir pedagojik karara işaret etmektedir. Bu uyarlama türü genellikle öğretmenler bir konuyu öğrencilerinin acil ihtiyaçları için ilgili olduğu düşünülmeyen, gereksiz bir tekrar olarak veya kaynak eksikliği ya da aşırı zaman kısıtlamaları nedeniyle yapılmaktadır. Bu kritik fark, öğretmenlerin program uyarlamalarının tek tip olmadığını aksine, öğretmenle ilgili (örneğin pedagojik inançlar), öğrenciyle ilgili (örneğin algılanan hazırbulunuşluk) ve okulla ilgili (örneğin zaman baskısı) faktörlerin karmaşık bir etkileşimiyle şekillenmektedir.

Araştırmaya katılan sınıf öğretmenlerinin planladıkları ve uyguladıkları programlar arasında farklılıklar olmasının (uyarlamaların) altında yatan çeşitli faktörler olduğu görülmüştür. Bu faktörlere ilişkin frekanslar incelendiğinde en fazla öne çıkan faktörün öğretmenden kaynaklı faktörler olduğu, bu bulgunun diğer kaynaklarla uyumlu olduğu (Akbulut Taş, 2022; An, 2020; Arslan Çelik, 2020; Asri, 2018; Batmaz, 2017; Bilgiç & Batu, 2023; Bümen & Yazıcılar, 2020; Dikbayır, 2018; İlhan & Bümen, 2023; Kasap Erdal vd., 2023; Li & Harfitt, 2017; McCarthey & Woodard, 2018; Ünsal & Çetin, 2019; Yazıcılar & Bümen, 2019), bunu sırasıyla öğrenciden kaynaklı, okul kaynaklı, öğretim programı kaynaklı ve veliden kaynaklı faktörlerin izlediği

görülmüştür. Bu bulgu bütüncül bir bakış açısıyla incelendiğinde öğretmenlerin program uyarlamaları üzerinde etkili faktörleri sıralayan alanyazındaki araştırmaların (Bümen & Yazıcılar, 2020; Li & Harfitt, 2017; Miller Day vd., 2013; Ünsal & Çetin, 2019) bulguları ile örtüşmektedir. Başka bir deyişle, bu araştırmada öğretmenlerin program uyarlamaları üzerinde etkili olan bölgesel faktörler, eğitim sisteminin merkeziyetçi yapısı ve merkezî sınavlardan kaynaklı faktörlere yönelik bulgulara rastlanmamıştır.

International Journal of Curriculum and Instructional Studies

15(2), 2025, 211-235

www.ijocis.com

Web 2.0-Based Peer Assessment: Padlet as a Digital Feedback Environment

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Keywords

Peer assessment
Padlet
Critical thinking development
SAMR model
Educational technology

Article Details:

Research Article

Received : 07-09-2025
Accepted : 27-12-2025
Published : 31-12-2025

DOI: 10.31704/ijocis.1779495

Abstract

This study examines the pedagogical potential of Web 2.0–based digital peer assessment through the example of Padlet, demonstrating how digital tools transform assessment processes. Designed as a qualitative case study, the research investigates the integration and effectiveness of Padlet in the peer assessment process within an English language course. The study was conducted with one English teacher and twenty-seven seventh-grade students at a public middle school in the Mamak district of Ankara. Padlet was deliberately selected among Web 2.0 tools due to its pedagogical and practical advantages. Data was collected through a semi-structured interview with the teacher and three focus group interviews with students. Within the scope of content analysis, the data were independently coded by two researchers, and a Cohen's Kappa coefficient of 0.85 indicated a high level of inter-code reliability. The resulting codes were analytically reclassified according to the four levels of the SAMR model. The findings indicate that Padlet-supported peer assessment reduces time and space constraints, ensures the retention of feedback, and supports continuous assessment. Anonymity reduced social pressure and enabled more honest evaluations. Students reported improvements in critical thinking, comparison, and self-regulation skills, while the teacher emphasized the platform's usefulness in monitoring participation and structuring the assessment process. Overall, Padlet aligns with all levels of the SAMR model, transforming peer assessment into a more collaborative and student-centered learning experience.

To cite this article: Kocabatmaz, H., & Saraçoğlu, G. K. (2025). Web 2.0-Based Peer Assessment: Padlet as a Digital Feedback Environment. *International Journal of Curriculum and Instructional Studies,* 5(2), 211-235. https://doi.org/10.31704/1779495

Introduction

The teaching process consists of planning, implementation, and evaluation stages. The evaluation phase plays a critical role in education by providing feedback to monitor students' progress, identify learning difficulties, and improve teaching practices. It also helps students recognize their strengths and weaknesses, thereby making learning more effective. Assessment practices include exams, project work, homework, observations, rubrics, performance tasks, portfolios, peer assessment, and self-assessment. Peer assessment is defined as a process in which students evaluate each other's learning outcomes and the quality of their work based on specific criteria (Bushell, 2006).

Peer assessment is grounded in constructivist learning theory, which emphasizes learning through social interaction and feedback (Vygotsky, 1978). It encourages student interaction and shared responsibility for learning (Panadero & Brown, 2017), while supporting critical thinking, self-reflection, and deeper understanding of learning tasks (Çil, 2022; Falchikov, 2005; Orabah et al., 2022; Topping, 2021). Through evaluating peers' work, students gain multiple perspectives and improve their own learning processes (Curran et al., 2020; Speyer et al., 2011). Consequently, peer assessment enhances participation, collaboration, critical thinking, and self-evaluation skills.

Web 2.0 tools have significantly transformed pedagogical processes by providing interactive and collaborative learning environments. These tools contribute to students' learning performance, extend opportunities for giving and receiving feedback (Brehaut et al., 2016; Wang, 2024), facilitate more detailed and objective assessment, and enrich learning experiences (Hepplestone et al., 2011).

The SAMR (Substitution, Augmentation, Modification, Redefinition) model offers a framework for understanding levels of technology integration in education and highlights technology's potential for pedagogical transformation rather than mere instrumental use (Puentedura, 2014). The model describes four levels of integration: substitution, augmentation, modification, and redefinition. Web 2.0 tools such as Padlet exemplify this framework by enabling learners to share ideas simultaneously, provide feedback, and engage in collaborative learning environments that extend beyond traditional classroom boundaries (Puentedura, 2014).

Padlet is a digital collaborative platform described as an online wall or bulletin board that supports communication and information sharing across devices without requiring advanced technical skills or account creation (Karsenti & Bugmann, 2017). It can be used both inside and outside the classroom to share multimedia content and to support discussions, peer feedback, and brainstorming activities. Padlet allows real-time participation, enables students to view and comment on peers' contributions, and supports peer learning through instant access to shared content. In addition, teachers can utilize Padlet to guide instruction and assess student learning based on shared products and responses (Fuchs, 2014). Privacy settings and anonymous posting options further support flexible and unbiased evaluation.

A review of Padlet-related studies indicates that most research focuses on students' attitudes, motivation, and academic achievement (Aljanabi et al., 2024; Sugiarni et al., 2025; Uğraş, 2024). However, studies examining how Padlet is pedagogically structured and

integrated into the teaching process, particularly within peer assessment practices, remain limited. Therefore, this study aims to explore how a teacher involved in the Future Classroom Lab (FCL) project implemented peer assessment using Padlet, to identify the advantages and challenges of this process, and to develop recommendations based on student feedback. By doing so, the study contributes original and in-depth insights into the pedagogical functioning of Web 2.0-based digital peer assessment in classroom learning contexts. In line with this aim, the following research questions were addressed:

- How do teachers and students use Padlet in peer assessment?
- What are the teacher's views on the use of Padlet in peer assessment?
- What are the students' opinions about peer assessment with Padlet?
- How does peer assessment with Padlet align with the stages of the SAMR Model according to participants in the study?

Method

Research Design

In this study, a case study, one of the qualitative research methods used to examine a specific phenomenon or situation in depth, was employed. A case study enables a comprehensive and detailed analysis of an event, individual, group, or organisation within its own context (Yin, 2018; Stake, 1995; Yıldırım & Şimşek, 2021). The case study method can be applied in various contexts. For example, it can be used to evaluate the effects of a new curriculum implemented in a school, analyze a company's cultural transformation process, or understand social change processes within a community. This method is particularly effective when we aim to understand how and why a specific event, process, or program occurred. In this context, the peer review process using Padlet was analyzed through the personal experiences and perceptions of the participants.

Selection of Padlet as a Peer Assessment Tool

The selection of Padlet as the peer assessment tool in this study is based on strong pedagogical and contextual justifications. First, Padlet was already an actively used Web 2.0 tool by the teacher in the public school where the research was conducted. This familiarity facilitated students' adaptation to the digital environment, enabling data collection to occur naturally within the existing classroom setting. The teacher's active use of Padlet in lessons increased students' familiarity with the tool and supported the smooth and practice-based implementation of the digital peer assessment process.

The researchers' expertise in instructional technologies and instructional material development, along with their knowledge of the pedagogical functions and usage differences of Web 2.0 tools, ensured that the tool selection was both informed and theoretically grounded. Within this framework, Padlet was evaluated as more suitable for peer assessment compared to alternative tools such as Google Drive, Google Classroom, Edmodo, and Moodle. While Drive and Classroom support file sharing, they do not allow all student work to be viewed simultaneously on a single screen; similarly, platforms such as Edmodo and Moodle offer more complex interfaces, which makes them less practical for middle-school learners. In contrast, Padlet displays all student products on a single digital wall, thereby strengthening visibility, comparison, collaboration, and a collective feedback culture (Balta et al., 2020; Fisher, 2017).

Padlet's features—including quick access without account requirements, drag-and-drop upload functionality, anonymous commenting, and support for multimedia—make the tool highly accessible and motivating, especially for middle-school students. With its low technical load, high interaction capacity, and pedagogical effectiveness, Padlet was identified as the most appropriate tool for the context of this research.

Study Group

This qualitative study aims to develop a rich and contextual understanding by examining phenomena in their natural settings. The study group was determined using the typical case sampling method. Typical case sampling involves selecting one or more cases that best represent the environment in which a new application or innovation is implemented (Yıldırım & Şimşek, 2021). Merriam (1988) emphasises that for a single case to be worthy of research, it must be typical, unique, critical, or exemplary. In this context, the selected school was chosen because it represents common educational practices while also distinguishing itself by adopting innovative teaching approaches. The study was conducted at a state school in the Mamak district of Ankara. Peer assessment activities were implemented in a 7th-grade English language course conducted by a single English teacher. Within the scope of the study, a semi-structured interview was carried out with the teacher who implemented the intervention, and 27 students enrolled in the teacher's class participated in the application. The activities focused on improving students' writing performance and their ability to provide constructive written feedback to their peers. The school where the study was conducted represents a typical public lower secondary school context, with adequate technological infrastructure and an openness to innovative teaching practices. Therefore, the findings can be transferred to other educational environments with similar characteristics. It was determined that all students had access to computers, enabling them to use Padlet at home.

Research applications were conducted in a 7th-grade English language course based on the English Language Curriculum of the Ministry of National Education. This course is structured around a spiral, holistic, and interactive approach in which listening/viewing–comprehension, reading–comprehension, speaking–production, and writing–production skills are addressed in an integrated manner, enabling the simultaneous development of all language skills. This holistic structure provided a particularly suitable context for supporting writing skills through peer feedback.

The selection of the teacher was based on experience in technology integration, professional seniority, and voluntary participation in the study. The teacher is currently at the thesis stage of a master's degree in Educational Technology, has approximately ten years of professional teaching experience, and integrates technology into pedagogical practices in a deliberate and informed manner.

Student participants were determined using a purposive sampling approach. Accordingly, the inclusion criteria required that students be enrolled in the relevant class, have participated in Padlet-based peer assessment activities for at least one academic term, volunteer to take part in the study, and be available to participate in interviews. All volunteer students who met these criteria were included in the research.

During the data collection process, 27 students participated in interviews organized into three focus groups, each consisting of nine students. The number and size of the focus groups

were determined to encourage interaction among students and to facilitate the mutual elicitation of experiences. Throughout the interviews, data saturation was observed; no new themes or meaningful variations emerged in subsequent stages.

Data Collection Tools

The data was collected using semi-structured interview forms prepared by researchers for teachers and students. This interview type was preferred because it allows for the detailed exploration of participants' interests, views, attitudes, and experiences, and enables the collection of in-depth data related to the research topic (Merriam & Tisdell, 2015). The interview questions were developed through a review of the relevant literature and refined based on expert feedback. Although the teacher and student interview forms were structured around similar themes, they were differentiated in accordance with the characteristics of the participant groups.

The teacher interview questions focused on the design and implementation of Padlet-supported peer assessment, the presentation of assessment criteria, the pedagogical affordances and challenges of the process, observed changes in feedback behaviors, and contributions to classroom interaction and learning. The student interview questions, in turn, addressed experiences related to the use of Padlet in peer assessment, perceptions of giving and receiving feedback, the impact of peer feedback on learning and revision, ease of use, anonymity and interaction, as well as the perceived advantages and limitations of the process.

In order to enhance the internal validity of the data collection tool, feedback was obtained from three academicians who are experts in the field, and the interview form was revised and refined accordingly.

Data Collection

The research data were collected through face-to-face interviews conducted at a public lower secondary school during the 2023–2024 academic year. A total of 27 students participated in the study, divided into three focus groups, each consisting of nine students. Approximately 30-minute interviews were conducted with each group. Student interviews were audio-recorded and supported by the researcher's field notes. The interview with the teacher was conducted via Zoom in two separate sessions, each lasting approximately 30 minutes.

In line with ethical research principles, all participants were informed about the purpose, scope, and procedures of the study, and voluntary informed consent was obtained. As the student participants were minors, written parental consent was secured prior to data collection, and the necessary official permissions were obtained from the school administration. Participant confidentiality was ensured, and all audio recordings and field notes were used solely for scientific purposes and securely stored.

The semi-structured interview forms developed for the teacher and students followed a common core structure but were adapted to the participant group. The teacher interview focused on the integration of Padlet into the peer assessment process, pedagogical opportunities and challenges encountered during implementation, observed changes in students' feedback behaviors, and the contribution of technology to the instructional process. Student interviews explored the ease of use of Padlet, its role in peer assessment, the perceived learning value of giving and receiving feedback, experiences related to anonymity and

interaction, and the perceived advantages and limitations of the process. Probing and follow-up questions were used when necessary to deepen participants' responses.

Data Analysis

Data analysis was conducted through a two-stage process using content analysis, a widely applied qualitative analysis approach (Miles & Huberman, 1994). In the first stage, interview recordings were transcribed verbatim and analyzed through thematic analysis. Meaningful units of data were coded, and codes sharing similar characteristics were grouped into sub-themes and then synthesized into higher-order themes. This stage was carried out in a fully data-driven manner, without the use of any predefined theoretical framework.

In the second stage of the analysis, the themes and codes derived from the thematic analysis were analytically reclassified using the SAMR model (Substitution, Augmentation, Modification, and Redefinition) to enable a deeper interpretation of the level of pedagogical technology integration. The SAMR model was employed solely as an analytical framework, not as an instructional design model, to determine whether Padlet functioned as a direct digital substitute or contributed to pedagogical transformation in the peer assessment process. Accordingly, codes reflecting features such as digital storage of feedback, anonymity, synchronous interaction, multimedia use, and remote assessment were aligned with the relevant SAMR levels.

This two-stage analysis approach enabled both the identification of themes grounded in participant experiences and a structured interpretation of these themes from a pedagogical technology integration perspective. The themes, sub-themes, and codes derived from participant data are presented in Table 1.

Table 1

Themes, Subthemes and Codes Identified by Participant Groups

Participant Group	Main Themes	Subthemes	Codes
Teacher	Introduction to Padlet	Initial exposure, motivation	Interest in Web 2.0 tools; Motivation to increase student interaction; Exposure through seminars/workshops; Desire to innovate classroom practices; Enhancing personal digital competence
	Padlet Usage Steps	Instruction, criteria explanation	Introducing Padlet and basic functions; Step-by-step usage guide; Explaining assessment criteria; Modeling constructive feedback; Demonstrating sample evaluations
	Padlet in Peer Assessment	Accessibility, collaboration, feedback	Easy access on multiple devices; All posts visible on one board; Permanent and reviewable feedback; Increased collaboration; Teacher monitoring and guidance

Table 1 (Continued)

Student	Learning Environment	Engagement, interaction	Reviewing peers' work; Collaborative learning; Gaining new perspectives; Reciprocal feedback exchange; Increased creativity
	Access	Viewing all posts, continuity	Viewing all posts simultaneously; Permanent written feedback; Ability to revisit comments; Tracking progress; Learning independent of time/place
	Comfort	Freedom, anonymity, reduced anxiety	Feeling safe when anonymous; Reduced social pressure; More honest feedback; Non-personalized critique; Lower fear of reactions
	Drawbacks	Technical issues, weak feedback, stress	Internet/device problems; Superficial comments; Stress from public visibility; Confusion from many comments; Distrust of anonymous feedback

The themes, subthemes, and codes derived from teacher and student data in Table 1 were further analyzed by reclassifying them according to the four levels of the SAMR model as presented in Table 2.

Table 2.

Classification of Codes According to the SAMR Model

SAMR Level	Description	Example Codes Related to Padlet Use
Substitution	The task is transferred directly to a digital environment without functional change.	Writing comments on Padlet instead of paper; Storing feedback digitally
Augmentation	The task is enriched with additional functional features.	Anonymous commenting; Adding images/videos; Continuous access to written feedback
Modification	The task is restructured through technology.	Simultaneous peer assessment; Comparing all work on a single screen; Revising work based on digital feedback
Redefinition	Technology enables tasks that were previously impossible.	Remote peer assessment; Creating multimodal feedback; Fully archiving the assessment process digitally

The frequency of repetition was taken into consideration when presenting the data (Johnson & Christensen, 2019). As shown in Table 2, the direct quotations presented in the results section were selected to represent the relevant themes and to support the interpretation of the findings. While teacher statements were reported without abbreviations, student statements were coded as S1, S2, S3, and so forth to ensure anonymity.

Trustworthiness of the Study

To ensure the reliability and validity of the study, rigorous procedures were applied throughout the qualitative data analysis process. Interview data obtained from teachers and students were independently coded by two researchers using MAXQDA 2022. The researchers, who designed the study, developed the interview protocol, conducted and transcribed the interviews, and analyzed the data, adopting a researcher-as-instrument stance while maintaining reflexivity to minimize bias. Inter-coder reliability was assessed using Cohen's Kappa, which yielded a value of 0.85, indicating a high level of agreement (Miles & Huberman, 1994). Coding discrepancies were resolved through consensus meetings.

Following the coding process, related codes were grouped into higher-order themes using the constant comparative method (Johnson & Christensen, 2019). Content validity was established through expert review by five faculty members in curriculum and educational technologies, who evaluated the interview questions using a 4-point scale. The overall Content Validity Index (CVI) was 0.92, demonstrating strong expert agreement (Polit & Beck, 2006). Additionally, thematic consistency between teacher and student responses was examined through cross-group comparisons. For example, the theme "Padlet's contribution to collaboration skills" showed an 85% convergence between groups, indicating substantial thematic coherence (Miles, Huberman, & Saldaña, 2014).

The participating teacher met the methodological requirements of the study, with 10 years of professional experience, active use of digital tools, participation in the FCL training programme, and a master's degree in Educational Technology. Prior to implementation, a briefing session was conducted to explain the study purpose, the configuration of Padlet for peer assessment, and the integration of the SAMR model into the process. This preparation minimized potential inconsistencies during implementation and strengthened methodological integrity. Throughout the study, a reflexive approach was maintained to reduce potential researcher bias, consistent with qualitative research principles (Lincoln & Guba, 1985; Yıldırım & Şimşek, 2021).

Findings

In this section, the findings obtained from the content analysis are presented in a thematic sequence. First, findings related to three themes derived from the teacher interviews (Introduction to Padlet, Steps of Padlet Use, and Padlet in Peer Assessment) are reported, followed by findings related to four themes based on student interviews (Learning Environment, Access, Ease of Use, and Disadvantages). The SAMR model was used not as a framework for organizing or presenting the findings, but as an interpretive analytical lens for understanding the level of pedagogical integration of Padlet in the peer assessment process. Therefore, the results were not structured under separate headings according to the stages of the SAMR model; instead, the thematic structure was maintained, and the relationships between the relevant codes and SAMR levels are illustrated through tables.

Findings from the Teacher Interview

Findings from the teacher interviews are presented according to themes (Introduction to Padlet, Padlet Usage Steps, and Padlet in Peer Assessment). These themes reflect the teacher's

experiences integrating Padlet into the peer assessment process, their pedagogical decision-making processes, and how digital tools influence student engagement and feedback behaviors. The teacher's narratives emphasize how Padlet supports not only technical processes but also interaction, collaboration, and reflective learning. Direct quotes supporting the teacher's views are included under each theme.

Introduction to Padlet

The interview revealed that the idea of using Padlet in peer assessment emerged from the teacher's ongoing engagement with educational innovations and her professional development in educational technology. She explained, "I realized the importance of peer assessment with the educational trends I encountered. I am currently pursuing a master's degree in educational technologies and am a teacher who tries to use Web 2.0 tools in my classes." Encountering Padlet in a seminar, she added, "Padlet was introduced as a tool that increases student interaction and can also be used for peer assessment. So, I decided to combine peer assessment with the ease of use of Padlet." These remarks reflect a deliberate attempt to merge technological affordances with pedagogical goals, consistent with constructivist principles emphasizing collaboration and reflection.

Padlet Usage Steps

At the preparatory stage, the teacher ensured students' digital readiness by explicitly introducing Padlet and providing hands-on guidance. As she explained, "First, I explained what Padlet is and provided hands-on information on how to use it… Then I distributed a guide I had prepared." This structured orientation promoted digital autonomy and equitable participation by fostering guided digital competence rather than assuming students' existing fluency.

Once students became familiar with the platform, the teacher clarified evaluation criteria and communication norms. She noted that students initially lacked clarity about what to evaluate, stating, "I explained which criteria they would use and that they should use constructive and respectful expressions," supported by examples of effective and ineffective feedback. By modeling evaluative discourse and emphasizing the use of concrete suggestions, peer assessment was framed as an educational dialogue that supports feedback literacy and ethical communication.

During implementation, the teacher created a dedicated Padlet wall for peer assessment, where students uploaded their work, reviewed peers' submissions according to the criteria, and reflected on the feedback received. She observed that while simple scoring required little time, written commentary demanded more sustained engagement. Following feedback, students were encouraged to revise their work, illustrating a formative and iterative assessment process supported by digital tools.

Throughout the process, the teacher maintained an active supervisory role, reviewing students' assessments and intervening when necessary. As she noted, this approach allowed her to evaluate both students' work and their assessment skills while providing additional guidance, thereby balancing student agency with pedagogical oversight and ensuring the quality and authenticity of peer feedback.

Padlet in Peer Assessment

Discussing Padlet's advantages, the teacher emphasized accessibility and efficiency, noting that "Padlet's user-friendly interface allows students to share their work quickly and easily" and that it is "practical and accessible from any device." She also highlighted its usefulness for tracking progress: "Feedback on Padlet helps me monitor students' progress more easily. I can see all feedback in aggregate and spend less time checking whether assessments have been done correctly." These reflections indicate that Padlet supports both student engagement and teachers' management of formative assessment data.

Another key benefit concerned interaction and collaboration. The teacher explained that while traditional peer assessment is often limited to paper-based or verbal feedback that students struggle to retain, Padlet enables instant feedback that can be accessed at any time. She further noted that in large classes, Padlet allows all students to view one another's work and evaluations simultaneously, thereby strengthening classroom interaction and transforming peer assessment into a collective and dialogic learning process. Additionally, she emphasized that "Padlet helps students develop critical-thinking skills by providing structured feedback" and motivates them to create visually enriched and more creative presentations.

The teacher also addressed the affective dimension of peer assessment, emphasizing anonymity as a key feature: "I can hide students' names, which allows them to feel more comfortable while providing feedback and prevents negative emotional reactions." This focus on emotional safety highlights how anonymity can reduce social anxiety and support fairness by depersonalizing critique.

Overall, the teacher described Padlet as a multifunctional pedagogical tool that enhances peer assessment through accessibility, transparency, and participation. By combining anonymity with visibility and automation with reflection, Padlet fosters an ongoing, participatory feedback culture in which learners engage critically and collaboratively with one another's work.

Findings from the Student Interviews

The findings obtained from the student interviews are presented under four themes (Learning Environment, Access, Convenience, Disadvantages). These themes indicate how students experienced the Padlet-supported peer assessment process, how the digital environment transformed feedback practices, and how this process influenced their learning motivation and engagement. The students' statements demonstrate that Padlet reshaped both the learning environment and the forms of interaction. Relevant student quotations are provided under each theme.

Learning Environment

The analysis of student narratives reveals that Padlet significantly transformed the peer assessment process by creating a learning environment grounded in accessibility, openness, collaboration, and reflection. Students consistently described Padlet as a platform that not only enabled them to share their work but also to engage in interactive and reciprocal feedback. As one student noted, "The teacher creates a Padlet board, and we all upload our work. We examine what our friends shared, write what they did well, and what to improve. Seeing different ideas and receiving feedback encourages me to try new things" (S1). This illustrates

how Padlet provided a structured yet creative digital space that supported mutual engagement and peer learning. Another student emphasized the reflective nature of this process: "Thanks to my friends' comments, I notice my mistakes and think about how I can improve and become more creative" (S21). Such remarks indicate that Padlet encouraged self-evaluation and intrinsic motivation—qualities essential for metacognitive learning (Hepplestone et al., 2011).

A recurring theme was the emergence of a collaborative learning community where students learned not only from the feedback they received but also from the evaluations they gave. One student stated, "Seeing everyone's work and comments gives me different perspectives. As I review feedback, my point of view changes" (S18). Another added, "When we use Padlet, we see our friends' work, write about what we liked or what could be better. Then they read our feedback and improve their work. So, we learn from each other" (S7). Students appreciated this dialogic and interactive quality, describing it as a process that broadened their perspectives and deepened their understanding of quality standards. One student reflected, "When my friend evaluates my work, another can agree or disagree, and this way we all learn better together" (S11). Padlet thus functioned as a collective reflective space where each learner contributed to the co-construction of meaning. As another participant summarized, "It fosters collaboration. The whole class can communicate with each other and the teacher, which is very impressive" (S5).

Access

Another important theme concerned the accessibility, visibility, and permanence of feedback. Students highlighted that Padlet's affordances allowed them to revisit peer comments repeatedly and use them as ongoing learning references. For instance, "Our feedback stays visible, so our friends can read suggestions anytime. This is very helpful" (S22), and "Since the comments are written, they don't disappear, and we can all see each other's feedback" (S16). The written and public nature of the comments also reinforced accountability and careful engagement: "Since the comments are written, we don't forget them and can look back later. This helps me understand how I can improve my work" (S27). For many, the permanence of digital records turned feedback into an ongoing learning resource rather than a one-time event. This continuous accessibility not only supported iterative improvement but also encouraged sustained reflection—an element often missing in traditional assessment environments.

Convenience

The transparency of peer submissions also encouraged students to reflect critically on the quality of their feedback and the tone of their communication. "By looking at my friends' work, I can get ideas. I realized I need to be more careful when writing comments because everyone can see them," one student remarked (S8). This awareness reflects how public visibility cultivates responsible digital citizenship and evaluative judgment. Similarly, another said, "Doing peer assessment on Padlet is better than in class because we can see everyone's comments, not just one person's opinion. It gives more hints for improving my work" (S12). This collective feedback created a pluralistic culture that broadened interpretive horizons and encouraged democratic participation. As one student pointed out, "Normally, paper comments can get lost, but here everything is permanent and organized. I can review what my friends said and make improvements" (S3). Observing others' evaluations also provided comparative

learning opportunities: "I can see both my friends' work and their feedback to me. This helps me realize my mistakes and learn how others work" (S26). Through this, students gradually developed not only feedback literacy but also digital collaboration skills crucial for 21st-century learning.

A particularly distinctive dimension of Padlet's use was anonymity, which students associated with greater honesty, openness, and fairness. They explained that anonymity reduced social anxiety and encouraged authentic critique. One student expressed, "It's nice not to see who gives feedback, because we can be more honest. I focus on how to improve my work, not who said it" (S15). Another added, "Not knowing who made the comment made me feel more relaxed. I can give criticism without hurting anyone" (S6). Similarly, "Instead of wondering if my friend wrote it, I focus only on the comment itself, which makes it fairer" (S4). These statements suggest that anonymity helped students detach feedback from interpersonal relations and focus on the content, aligning with objectivity and fairness in evaluative learning environments (Brehaut et al., 2016). This sense of fairness strengthened the trust students placed in the peer assessment process, fostering a psychologically safe space where critique could be seen as constructive rather than personal.

Disadvantages

Despite its pedagogical affordances, students identified several challenges related to Padlet-based peer assessment. Technical limitations such as outdated devices and poor internet access were frequently mentioned: "I had difficulty giving feedback until I learned how to use Padlet. My computer is old and slow, so the internet and computer need to work well" (S3). A few students felt that anonymity sometimes reduced the reliability of feedback: "Since I don't know who gave me the feedback, I sometimes ignore some comments. If I knew who made them, I'd take them more seriously" (S3). Others pointed to the quality and depth of comments: "Sometimes my friends' feedback is very simple or careless, like just writing 'good' or 'nice'—that doesn't really add value" (S1). Additionally, the public visibility of all feedback occasionally generated social pressure: "Having the feedback visible to everyone can be stressful. When I write something wrong and get criticized, I feel uncomfortable knowing everyone can see it" (S22). Some found it cognitively demanding to process multiple suggestions: "When there are too many feedback comments, I get confused about which ones to pay attention to. It's hard to fix everything at once" (S12).

Overall, these findings portray Padlet as a pedagogically rich yet complex tool that reshapes peer assessment from a unidirectional evaluative act into an ongoing, participatory, and reflective experience. Its affordances—visibility, permanence, and anonymity—support the development of critical thinking, metacognitive regulation, and a sense of learning community. However, these benefits depend on having adequate digital infrastructure and cultivating feedback literacy. The data thus highlight the dual nature of technology-mediated assessment: while tools like Padlet democratize participation and sustain reflective dialogue, they also require pedagogical scaffolding to prevent cognitive overload, ensure constructive feedback, and maintain emotional safety.

In conclusion, Padlet's integration into peer assessment practices exemplifies how digital environments can redefine classroom feedback culture. By making learning visible, encouraging reflection, and promoting collaboration, it bridges traditional assessment with

21st-century learning principles. Yet, its success relies on teachers' ability to guide students toward meaningful and responsible feedback. When used with intentional design and support, Padlet transforms peer assessment into a dynamic process of shared learning, self-awareness, and continuous improvement—a hallmark of effective digital pedagogy.

When teacher and student data are combined, it is evident that Padlet provides a student-centred, interactive, and reflective learning environment. The teacher's structured guidance and criteria explanations ensure that feedback is meaningful, while students gain benefits such as collaboration, transparency, repeated reflection, and skill development. According to teachers and students, Padlet is a flexible tool that can take on different roles in all stages of the SAMR model for peer assessment. Although it initially emerged as a simple digital board, when used effectively, it has the capacity to enrich and transform learning processes.

Table 3

Padlet in the SAMR Model According to Teacher and Student Opinions

SAMR	Padlet with Peer Assessment Application	Inference
Substitution	The teacher and students share their opinions on Padlet instead of writing them on the board or paper regarding the products.	The use of Padlet for peer assessment has been digitalized, but there is no fundamental change in the process.
Augmentation	Students provide feedback by commenting on Padlet. Students can evaluate by adding text, comments, videos, or visuals.	The feedback process becomes more interactive and richer, but there is no fundamental change in the process.
Modification	Students are able to apply real-time peer assessment, adjust their work, and improve it according to the feedback they receive. With the comments made, students who collaborate more move their work forward.	Students actively make adjustments to their work and collaborate, leading to a profound transformation.
Redefinition	Students move beyond the physical boundaries of the classroom. Students perform peer assessments remotely (from their homes).	Padlet enables learning independent of time and place.

As shown in Table 3, within the SAMR model framework, Padlet does not merely replace paper-based assessments; it increases interaction, changes classroom dynamics with visible and collaborative feedback, and makes peer assessment continuous, accessible, and reflective.

Discussion

The findings of this study indicate that the interviewed teachers' engagement in a master's degree program in educational technology and active participation in professional seminars played a significant role in the pedagogical structuring of the Padlet-supported peer assessment process. This professional background supported the teacher's deliberate and planned integration of digital tools into classroom practices, enabling technology to be used not merely as technical support but as a pedagogical component shaping learning processes.

As a result, students' learning experiences were enriched, and classroom engagement increased through the purposeful use of technology.

Within this framework, peer assessment activities conducted via Padlet created an interactive learning environment that promoted students' critical thinking, problem-solving, collaboration, and responsibility for learning. Students were observed to move beyond passive participation and assume an active role in giving feedback and engaging in evaluative processes.

Another important finding is that the teacher's conscious pedagogical use of digital tools contributed to the development of students' digital literacy and autonomous learning skills. Guided by the teacher, students were encouraged not only to use digital tools but also to understand their functions and roles within the learning process. This finding is consistent with Warschauer and Matuchniak (2010), who emphasize that the intentional integration of technology into pedagogy supports the development of students' critical digital literacy skills.

Similarly, Selwyn (2011) emphasizes the potential of technology to support learning by fostering greater student autonomy. The findings of the present study indicate that this potential was realized through structured Padlet-supported peer assessment activities, which enabled students to actively participate in feedback processes and to regulate and evaluate their own learning. In this respect, the study demonstrates that the pedagogical integration of digital tools can play a supportive role in strengthening students' sense of ownership and responsibility for learning.

Beyond describing a teacher who uses technology, this study highlights a pedagogically transformative approach in which digital tools are deliberately embedded into instructional practices. The findings suggest that teachers who prioritize professional development and engage with pedagogical innovations play a critical role in enhancing educational quality and supporting students' academic and cognitive development. Within a lower secondary school context, the study thus offers a practice-oriented contribution to the literature by illustrating how purposeful technology integration can positively influence student learning.

The teacher's practices—introducing Padlet to students, explicitly explaining peer assessment rules and criteria, structuring a shared Padlet wall, and actively monitoring the feedback process—underscore the importance of guided and hands-on implementation. Consistent with previous research, such structured guidance supports students' independent and effective use of digital tools (Halimah & Nawangsih, 2021) while fostering autonomy in learning (Nadeem, 2019). Moreover, studies emphasize that teachers' facilitative roles and clear instructional scaffolding are essential for promoting meaningful engagement with technology (Hwang et al., 2010; Udvaros et al., 2023). Together, these findings reinforce the view that digital tools yield pedagogical value not through their mere presence but through intentional, guided, and reflective use within the learning process.

Teacher guidance plays a central role in ensuring the effectiveness, fairness, and reliability of peer assessment processes. By clearly defining assessment rules and criteria, teachers support students in making more accurate and objective evaluations, increase consistency among peer assessments, and promote shared evaluative standards (Falchikov, 2005; Topping, 2009). Research further indicates that peer assessment practices conducted under structured teacher guidance not only deepen students' engagement in learning but also contribute

positively to academic performance (Nicol & Macfarlane-Dick, 2006; McLuckie & Topping, 2004).

The findings of the present study demonstrate that the teacher adopted a guided and closely monitored approach to the Padlet-supported peer assessment process. The teacher structured the process by creating a dedicated Padlet wall for peer assessment, sharing explicit criteria, and actively overseeing students' evaluations. Students reviewed their peers' work, provided feedback based on predetermined criteria, and revised their own work in response to the received comments. Through this structured cycle of feedback and revision, the teacher provided timely guidance to support students' progress and strengthen their assessment skills. This approach not only facilitated the effective integration of digital tools but also supported the development of critical thinking, independent learning, and peer evaluation competencies (Nicol & Macfarlane-Dick, 2006; Topping, 2009).

In this context, Padlet was perceived by the teacher as a pedagogical tool that supports collaboration, interaction, and visual engagement. Its user-friendly interface and real-time feedback features enhanced student participation and motivation, while enabling learners to benefit not only from feedback on their own work but also from reviewing feedback provided to peers. Consistent with previous studies highlighting Padlet's contribution to collaborative learning, language development, and project-based learning environments (Ardini, 2023; Aneros, 2023; Gawin, 2021), the findings of this study suggest that Padlet's pedagogical value lies in its capacity to make peer assessment more visible, interactive, and reflective. When combined with structured teacher guidance, Padlet supports a dynamic and participatory learning environment in which students learn with and from one another.

The findings of this study indicate that Padlet not only facilitates peer assessment but also enhances collaborative learning, critical thinking, and student engagement by providing a platform for real-time feedback and interaction. Both teachers and students reported that Padlet improves accessibility to feedback, reduces challenges related to storing and recalling peer assessments, and supports the monitoring of student development. The continuous availability of feedback enables students to revisit comments, reflect on their shortcomings, and track their progress over time, thereby supporting sustained learning and individual development (Gawin, 2021; Gill-Simmen, 2021; Kharis et al., 2020).

Another significant finding concerns the role of anonymity in the peer assessment process. According to both teachers and students, maintaining anonymity during feedback increased students' comfort and sense of security, encouraging more open and honest participation. Anonymity reduced peer pressure and anxiety, which in turn contributed to more constructive feedback and more positive attitudes toward peer assessment (Raes et al., 2013; Panadero & Alqassab, 2019). Consistent with previous research, anonymous peer assessment was associated with higher perceived fairness, improved feedback quality, and greater student engagement (Lin, 2016; Topping, 2021). These findings suggest that anonymity functions as a key pedagogical mechanism in digital peer assessment environments such as Padlet, supporting both the affective and cognitive dimensions of learning.

Overall, the results demonstrate that Padlet's pedagogical value lies not only in its technical affordances but also in how features such as continuous feedback access and anonymity are leveraged to create a supportive, reflective, and participatory learning environment. When

integrated purposefully into peer assessment practices, Padlet contributes to richer learning experiences and more meaningful student engagement.

Although digital platforms such as Padlet offer substantial pedagogical benefits for peer assessment, the findings and related literature indicate that their effective use is not without challenges. One important limitation concerns unequal access to technological resources. Students with limited access to digital devices or stable internet connections may experience difficulties engaging fully in Padlet-based activities, which can lead to frustration and reduced participation (Kharis et al., 2020). In addition, while anonymity is often perceived as an advantage, it may also result in feedback being taken less seriously by some students. Research suggests that open and visible feedback environments can cause discomfort for certain learners, potentially leading to reluctance in participation (Gawin, 2021). Moreover, receiving a large volume of peer feedback may overwhelm students, making it difficult to evaluate the relevance and quality of comments, particularly when feedback is perceived as vague or insufficiently constructive (Burgess & Mellis, 2015).

Beyond Padlet, the literature highlights several alternative tools that serve similar pedagogical purposes in peer assessment contexts. For instance, Peerceptiv, an AI-supported platform, enables structured and anonymous peer review and has been shown to improve students' writing performance and critical thinking skills (Ertmer & Koehler, 2023). Similarly, rubric-based e-portfolios are widely used in formative assessment to promote self-reflection and to document students' learning progress over time (O'Malley & Valdez Pierce, 2005). Comparative studies emphasize that no single digital tool is universally optimal; rather, the effectiveness of peer assessment platforms depends on contextual factors such as technological infrastructure, class size, instructional goals, and students' digital competencies. These findings underscore the importance of selecting assessment tools that align with both pedagogical intentions and the practical realities of the learning environment.

Finally, the present study is subject to several limitations. The findings are based solely on qualitative data collected through semi-structured interviews, and no additional data sources, such as classroom observations or document analysis, were included. As a result, the findings are not intended to be generalized but rather to provide in-depth insights applicable to similar educational contexts. Furthermore, the study focused exclusively on the use of Padlet; future research may examine a wider range of Web 2.0 or AI-based tools to enable broader comparisons and to deepen understanding of digital peer assessment practices.

Conclusion and Implications

Literature emphasizes the importance of educators' proficiency in digital tools as a prerequisite for integrating digital literacy into learning processes and preparing students for the demands of the 21st century. By modeling effective and purposeful use of digital technologies, educators can foster learning environments in which students are encouraged to explore digital tools independently, thereby developing confidence and competence in their use.

Traditional peer assessment practices are generally constrained by time, space, and communication-related factors and are often limited to face-to-face, one-time interactions. Such conditions may increase student anxiety and restrict the openness and depth of feedback.

In contrast, Padlet offers a more flexible and pedagogically effective alternative by enabling asynchronous peer feedback, which allows students to reflect on their evaluations and articulate more constructive responses. Moreover, unlike traditional approaches in which feedback is difficult to document or revisit, Padlet ensures that peer feedback remains accessible and permanent, supporting ongoing reflection and learning.

Moreover, when interpreted through a pedagogical framework such as the SAMR model, Padlet enhances peer assessment practices by creating a flexible, inclusive, and pedagogically rich digital environment that supports student interaction and feedback processes. Features such as asynchronous participation, anonymity, and the integration of audiovisual materials enable students to engage more thoughtfully in peer feedback, reduce social anxiety, and develop higher-order skills, including critical and reflective thinking. At the same time, Padlet allows teachers to monitor the assessment process, provide timely guidance, and reinforce feedback criteria, thereby ensuring instructional coherence and quality assurance.

From the perspective of the SAMR model, Padlet goes beyond functioning as a simple digital substitute for traditional peer assessment practices. By transforming feedback into a continuous, interactive, and revisitable process, it contributes to the modification—and potentially the redefinition—of assessment practices within the learning environment. However, effective implementation requires careful consideration of equity and pedagogical control. Unequal access to digital resources may lead to exclusionary practices, and anonymous feedback may pose challenges in terms of transparency and accountability if not properly scaffolded. Therefore, teachers should actively regulate the process through clear criteria, structured feedback strategies, and, when necessary, the temporary use of guided or non-anonymous assessment formats. Overall, this study demonstrates that when implemented under appropriate pedagogical conditions, Padlet can serve as a transformative tool that supports collaborative learning, feedback literacy, and meaningful digital engagement. Based on the findings, effective use of Padlet in peer assessment requires both pedagogical structuring and institutional support. Teachers should prepare students by clarifying evaluation criteria, modeling quality feedback, and monitoring the process to ensure fairness. Schools must provide equitable access to digital infrastructure to prevent technological barriers from affecting participation. Structured feedback frameworks and exemplary-based training can further enhance feedback quality, while anonymity should be used selectively and supported by teacher guidance.

Future research should investigate Padlet-based peer assessment across different subjects, age groups, and larger samples, as well as through longitudinal designs examining the development of feedback literacy over time. Comparative experimental studies involving alternative digital tools, such as Peerceptiv, CWPT, or rubric-based systems, are needed to determine contextual effectiveness. Further attention to anonymity, digital access, and technological proficiency may support the design of more inclusive and pedagogically sound peer assessment practices.

Author Contributions

Handan Kocabatmaz: research design, methods and results.

Gülçin Kezban Saraçoğlu: conceptualization, data collection, data analysis.Both authors contributed equally to the article.

Declarations

Ethical Approval and Informed Consent

This study was approved by the Institutional Ethics Review Board of Gazi University, and all procedures were conducted in accordance with the approved ethical protocols and the implementation permission granted by the Ankara Provincial Directorate of National Education. Written informed consent was obtained from the parents of participating students prior to the study, and participants were informed that their anonymized data would be used for publication purposes.

Supplemental Material

There are no supplemental materials for this article.

Disclosure of AI Use

ChatGPT 5.2 (OpenAI) was used solely for language editing and improving textual clarity. The intellectual content, data analysis, interpretation, and conclusions are entirely the responsibility of the authors.

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Web 2.0 Tabanlı Akran Değerlendirmesi: Dijital Bir Geri Bildirim Ortamı Olarak Padlet

Giriş

Öğretim süreci planlama, uygulama ve değerlendirme aşamalarından oluşmakta; değerlendirme ise öğrencilerin gelişimini izleme, öğrenme güçlüklerini belirleme ve öğretimi geliştirme açısından kritik bir rol üstlenmektedir. Öğrenci merkezli yaklaşımların öne çıkmasıyla değerlendirme, yalnızca sonuç odaklı bir ölçme işleminden ziyade öğrenmeyi destekleyen etkileşimli bir süreç olarak ele alınmaktadır. Bu bağlamda akran değerlendirmesi, öğrencilerin belirlenmiş ölçütler doğrultusunda birbirlerinin ürünlerini değerlendirmelerine olanak tanıyarak öğrenme sorumluluğunun paylaşılmasını ve geri bildirim kültürünün gelişmesini desteklemektedir.

Dijital dönüşümle birlikte akran değerlendirmesi giderek daha fazla çevrim içi ortamlarda uygulanmakta; Web 2.0 araçları etkileşim, kalıcı geri bildirim ve multimodal yorum imkânı sunmaktadır. Bu araçlardan biri olan Padlet, öğrencilerin çalışmalarını eş zamanlı paylaşmalarını, yazılı, görsel veya işitsel geri bildirim sunmalarını ve öğretmen tarafından sürecin kolaylıkla izlenmesini sağlayan etkileşimli bir dijital pano işlevi görmektedir. Anonim değerlendirme seçeneği, içeriklerin tek ekranda görüntülenebilmesi ve kalıcı olarak saklanabilmesi Padlet'i akran değerlendirmesinde pedagojik açıdan işlevsel kılmaktadır.

Bu çalışma, Padlet'in akran değerlendirmesinde kullanımını uygulamaya dayalı bir örnek olay üzerinden incelemeyi ve öğretmen ile öğrenciler açısından pedagojik sonuçlarını ortaya koymayı amaçlamaktadır. Katılımcı görüşlerine dayalı olarak Padlet'in öğretim süreçlerini SAMR modeli (Substitution, Augmentation, Modification, Redefinition) çerçevesinde hangi düzeylerde dönüştürdüğü analiz edilmiştir. Literatürde Padlet'in akran değerlendirmesine yönelik sınırlı sayıda çalışma bulunması, araştırmaya özgünlük kazandırmakta; çalışmanın dijital akran değerlendirmesine ilişkin pedagojik farkındalık oluşturması ve öğretmenlere uygulanabilir örnekler sunması beklenmektedir.

Yöntem

Bu araştırma, Padlet destekli akran değerlendirmesi sürecini öğretmen ve öğrenci deneyimleri üzerinden incelemek amacıyla nitel yaklaşımda durum çalışması olarak yürütülmüştür. Çalışma grubunu, eğitim teknolojileri alanında yüksek lisans yapan ve Web 2.0 araçlarını aktif kullanan bir İngilizce öğretmeni ile Padlet tabanlı akran değerlendirmesine en az

bir dönem katılmış, yedinci sınıf düzeyinde öğrenim gören ve çalışmaya gönüllü olan 27 öğrenci oluşturmaktadır.

Veriler, öğretmen ve öğrencilere yönelik yarı yapılandırılmış görüşmelerle toplanmıştır. Üç odak grup görüşmesi (her biri dokuz öğrenci) ve iki öğretmen görüşmesi gerçekleştirilmiş, görüşmeler ses kaydı alınarak yürütülmüş ve etik ilkelere uygun olarak gizlilik esasına göre saklanmıştır.

Verilerin analizi, iki aşamalı içerik analizi ile gerçekleştirilmiştir. İlk aşamada görüşmeler yazıya aktarılarak iki araştırmacı tarafından bağımsız kodlama yapılmış ve kodlayıcılar arası uyum Cohen Kappa=.85 ile doğrulanmıştır. İkinci aşamada temalar, Padlet'in pedagojik etkisini belirlemek amacıyla SAMR modeli (Substitution, Augmentation, Modification, Redefinition) doğrultusunda yeniden sınıflandırılmıştır. Böylece Padlet'in akran değerlendirmesindeki dönüşüm düzeyi hem veriye dayalı hem de kuramsal çerçeve ile ortaya konmuştur.

Bulgular

Araştırma bulguları, Padlet destekli akran değerlendirmesinin öğrenciler arasındaki etkileşimi artırdığını, değerlendirmeyi daha görünür, kalıcı ve iş birlikçi bir sürece dönüştürdüğünü göstermektedir. Öğretmen, Padlet'in tüm öğrenci ürünlerini tek ekranda sunması, yorumların kalıcı olarak saklanabilmesi, çoklu ortam destekli geri bildirimlere imkân tanıması ve sürecin kolayca izlenebilmesi sayesinde değerlendirme ve öğretimi daha yönetilebilir kıldığını belirtmiştir. Bu yönüyle Padlet'in yalnızca teknik bir araç değil, öğrencilerin değerlendirme ölçütlerini bilinçli kullanmalarını ve birbirlerinden öğrenmelerini destekleyen pedagojik bir ortam sunduğu ifade edilmiştir.

Öğrenci görüşleri de Padlet'in farklı bakış açıları kazandırdığını, eleştirel düşünme ve öz düzenlemeyi artırdığını ortaya koymaktadır. Öğrenciler, arkadaşlarının yorumlarını incelemenin kendi çalışmalarını geliştirmelerine yardımcı olduğunu, anonimliğin ise daha rahat ve dürüst geri bildirim sunduklarını belirtmiştir. Bununla birlikte bazı öğrenciler anonimliğin zaman zaman yüzeysel yorumlara yol açabildiğini, çok sayıda geri bildirimin kafa karıştırıcı olabildiğini ve teknik erişim sorunlarının süreci zorlaştırdığını ifade etmiştir.

SAMR analizine göre Padlet, akran değerlendirmesini yalnızca dijital ortama taşıyan bir araç olmanın ötesine geçmiştir. Padlet, önce kâğıt temelli değerlendirmeyi dijitalleştirerek yerine koyma, kalıcı ve görsel geri bildirimle zenginleştirme, eş zamanlı yorum ve yeniden düzenleme olanağıyla yeniden düzenleme, uzaktan ve multimodal değerlendirme ile yeniden tanımlama düzeyine ulaşmıştır. Bu sonuç, Padlet'in akran değerlendirmesini teknik bir uygulamadan çıkarıp pedagojik bir dönüşüm aracına dönüştürdüğünü göstermektedir.

Tartışma

Araştırma bulguları, öğretmenin teknolojiye yönelik farkındalığı ve süreci bilinçli biçimde yapılandırmasının Padlet destekli akran değerlendirmesinin başarısında belirleyici olduğunu göstermiştir. Öğretmenin aracı tanıtması, kullanım yönergeleri sunması ve değerlendirme ölçütlerini netleştirmesi, öğrencilerin sürece aktif katılımını artırmıştır. Bu durum teknoloji entegrasyonunda öğretmenin rehberlik rolünü vurgulayan araştırmalarla uyum göstermektedir (Halimah & Nawangsih, 2021; Hwang vd., 2010; Udvaros vd., 2023). Padlet'in eleştirel

düşünmeyi, öz düzenlemeyi ve iş birliğini desteklediği sonucuna ulaşılmıştır. Geri bildirimlerin kalıcı olması, öğrencilerin çalışmalarını tekrar gözden geçirerek geliştirmelerine katkı sağlamıştır. Bu bulgu, geri bildirimin öğrenmeye etkisini ortaya koyan literatürle tutarlıdır (Nicol & Macfarlane-Dick, 2006; Topping, 2009; Hattie & Timperley, 2007). Anonimlik özelliği, öğrencilerin daha özgür ve dürüst yorumlar yapmalarını sağlamış; sosyal kaygıyı azaltarak adalet algısını güçlendirmiştir. Bu sonuç, anonim akran değerlendirmesinin güvenli öğrenme ortamı sunduğunu belirten çalışmaları desteklemektedir (Panadero & Alqassab, 2019; Raes vd., 2013; Zhao, 2010; Lin, 2016; Topping, 2021). Bununla birlikte süreçte bazı sınırlılıklar görülmüştür. Teknolojik altyapı eksiklikleri katılımı etkilerken bazı öğrenciler yüzeysel yorumlar yapmış ve fazla geri bildirim yoğunluğu kafa karışıklığına neden olmuştur. Bu bulgular, dijital araçların etkisinin öğrenci donanımı, dijital okuryazarlık ve öğretmen rehberliğiyle ilişkili olduğunu gösteren çalışmalarla paralellik taşımaktadır (Kharis vd., 2020; Warschauer & Matuchniak, 2010; Burgess & Mellis, 2015). Son olarak SAMR modeli analizi, Padlet'in yalnızca dijitalleştirme değil, aynı zamanda pedagojik dönüşüm sağladığını ortaya koymuştur. Araç üst düzey entegrasyon basamaklarında iş birliğini, yaratıcılığı ve zamandan mekândan bağımsız öğrenmeyi desteklemiştir. Bu durum Puentedura'nın (2013) teknoloji entegrasyonu yaklaşımının geçerliliğini doğrulamaktadır.

Sonuç ve Öneriler

Padlet; öğrencilerin değerlendirme sürecine aktif katılımını teşvik eden, etkileşim ve iş birliğini artıran, eleştirel düşünme ve dijital geri bildirim becerilerini geliştiren etkili bir akran değerlendirme aracıdır. Süreç; erişilebilirlik, kalıcılık ve anonimlik özellikleriyle pedagojik açıdan destekleyici bir öğrenme ortamı sunmaktadır. Bununla birlikte platformun etkili kullanımını sağlamak için öğretmen rehberliği, teknoloji altyapısının iyileştirilmesi ve yapılandırılmış geri bildirim eğitimi önem taşımaktadır.

Çalışmada şunlar önerilebilir:

Öğrencilere geri bildirim okuryazarlığı kazandıracak örnek uygulamalar ve yapılandırılmış eğitimler verilmelidir.

Okullarda dijital araçları etkin kullanım için teknik donanım ve internet erişimi güçlendirilmelidir.

Anonimlik pedagojik amaçla kullanılmalı, gerektiğinde yarı-anonim veya açık kimlikli değerlendirme tercih edilmelidir.

Farklı sınıf düzeyleri, disiplinler ve dijital araçlarla karşılaştırmalı araştırmalar yapılmalıdır.

Boylamsal çalışmalarla öğrencilerin dijital akran değerlendirme becerilerinin gelişimi incelenmelidir.

International Journal of Curriculum and Instructional Studies

15(2), 2025, 236-268

www.ijocis.com

Examining the Relationship between Teachers' Digital Competence and Career Satisfaction

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Keywords

Teacher education
Teacher career
Digital competence
Career satisfaction

Article Info:

Research Article

Received : 19-05-2024
Accepted : 09-12-2025
Published : 31-12-2025

DOI: 10.31704/ijocis.1486452

Abstract

As digitalization increasingly shapes teachers' careers, the development of digital competencies brings about significant changes in both education systems and the labor market. This study aims to examine the relationship between teachers' perceptions of their digital competence and their career satisfaction, as well as to investigate whether these variables differ based on demographic factors. The research was conducted during the 2022-2023 academic year with 208 teachers working in public schools affiliated with the Ministry of National Education in Ankara, Türkiye. Data were collected using the Personal Information Form, the Digital Competence Scale for Educators, and the Career Satisfaction Scale. Data were analyzed using independent samples t-tests, one-way ANOVA, and Pearson correlation analysis. The findings indicate that the average digital proficiency score of teachers was 44.30, with the majority at the "integrator" level. The teachers' average career satisfaction score was found to be moderate ($\bar{X}$ = 3.04). The results showed that there were no statistically significant differences in digital proficiency and career satisfaction scores based on gender and position. A significant difference was found in digital proficiency scores according to education level, and it was observed that postgraduate teachers showed higher digital proficiency than those with a bachelor's degree. In addition, a significant difference was found in the perception levels of career satisfaction of teachers only according to the seniority variable. Furthermore, a low but statistically significant positive correlation was identified between teachers' perceptions of digital proficiency and their career satisfaction levels.

To cite this article: Altın, A., & Topcu, Z. (2025). Examining the relationship between teachers' digital competence and career satisfaction. *International Journal of Curriculum and Instructional Studies, 15*(2), 236-268. https://doi.org/10.31704/1486452

Introduction

Societies need to learn to live in a globalizing, digitalizing, intercultural and changing world (Ala-Mutka, 2011; Engzell et al., 2021; Romero García et al., 2020). With the rapid rise of online services impacting economic, political, cultural, and social spheres, societies face significant challenges in effectively utilizing Information and Communication Technologies (ICT). The labor market is undergoing a radical transformation due to relentless technological advancements. Digitalization has broadened the scope of the labor market and its qualification needs, while also influencing emerging generational issues. The gap between different generations working within the same organization has reached unprecedented depths (Nemeskeri et al., 2016). Consequently, achieving the desired goals in the 21st century requires the development of a workforce with the digital competencies necessary for creativity in knowledge production and expertise in problem-solving. For many individuals, the workplace is where they learn to use computer-based technologies and understand how they can be beneficial (Haddon, 2000). Those who are more digitally involved in their social lives are thought to have a comparative advantage over their digitally disadvantaged peers (Bergström, 2017). According to Rogers (2003), people with higher education levels are more likely to adopt technological innovations early. In this context, education enables individuals to develop their knowledge and skills, while an increase in digital competencies can significantly impact career development. The development of basic digital skills can substitute for educational requirements in many occupations, helping individuals advance in their careers (One, 2017). From this perspective, whether digital competencies play a key role in helping employees attain higher-level positions and increase career satisfaction is a subject of ongoing research in the rapidly evolving business world (Hazni & Nurhaida, 2024; Itsekor & Oyewole, 2021; Khan, 2021; Li & Yu, 2022; Oubibi et al., 2022; Sahito & Vaisanen, 2017; Soeprijanto et al., 2022).

Nowadays, it is becoming increasingly important for teachers and students in learning environments where online virtual learning platforms are used. The use of virtualization in teaching, which integrates various aspects of the teaching process, can be seen as a source of motivation for the teaching profession. Teachers with digital competence serve as role models for their students and colleagues, both in online and in-class settings. In fact, today’s students, often referred to as digital natives (Prensky, 2001), have grown up with technology, making their digital skills frequently surpass those of their teachers. The teacher's professional role as a pedagogue requires the ability to address students' problems (Li & Yu, 2021). International research links teachers' professional development to increased teacher efficacy (Coldwell, 2017). A teacher's commitment to professional development positively influences their performance, student success, career advancement, and overall commitment to the profession (Tantawy, 2020). From this perspective, it is essential for teachers to feel satisfied with their jobs and their careers.

Studies on digital competencies and teacher professional development often highlight the importance of digital competence. Nowadays, it is becoming increasingly important for teachers and students in learning environments where online virtual learning platforms are used.. However, there are several challenges associated with using technology in educational environments. In their research, Hew and Brush (2007) identified six key barriers that K-12 schools often experience when embedding technology within the curriculum to support instruction. Studies on teachers' use of technology in classrooms show that teachers' digital

competence is particularly low in areas such as content creation, information literacy, and problem-solving. However, they demonstrate stronger skills in digital content communication and collaboration (Garzón-Artacho et al., 2021). Many of these studies reveal deficiencies in teacher education and ICT training (Fernández-Batanero et al., 2020). In particular, the lack of adequate ICT training negatively affects teachers' digital competences. For instance, a study conducted with Spanish secondary school teachers found that, while teachers rated themselves as having average digital teaching competence, they acknowledged several gaps that hindered the full integration of these competencies into their teaching practices (Prieto-Ballester et al., 2021). These findings suggest that teachers require more support and opportunities for development in digital education.

Although institutional support for technology integration is important, it alone does not determine the use of technology in the classroom. Even with high levels of institutional support, teachers may experience low self-efficacy in using technology (Scherer et al., 2021), suggesting that teachers' beliefs about their own capabilities can hinder technology use. While the availability of digital tools and infrastructure is essential to support technology use, it is not sufficient by itself (Bingimlas, 2009). The presence of infrastructure in educational environments only partially explains teachers' use of technology (Drossel & Eickelmann, 2017). According to Bergström (2017), the digital divide is not only caused by a lack of infrastructure, but also by individuals' ages, education levels, and personal characteristics, which are the determinants of technology use. Especially in aging societies, differences in digital skills create a significant distinction between age groups, and these individual factors are much more effective than the existence of technological infrastructure. This supports the fact that the basic elements that shape individuals' access to and use of technology are characteristics such as personal beliefs, attitudes, and competencies rather than infrastructure. On the other hand, there are some studies that reveal that teachers' digital competencies and technology use tendencies are closely related to their pedagogical beliefs, self-efficacy perceptions, and demographic variables. Tondeur et al. (2008) state that teachers who share constructivist and traditional teaching beliefs have a higher frequency of computer use and that teachers' belief profiles are a determining factor in integrating technology into classroom practices. Antonietti et al. (2022) found that teachers' beliefs about their digital competencies significantly predicted their intention to use technology through ease of use and perceived usefulness of technology in the context of the Technology Acceptance Model. In the study conducted by Hatos et al. (2022), it was found that teachers' digital competencies differed depending on age, gender, professional status, field of study, and online teaching education background; competencies in office software were exhibited more by female teachers, while multimedia and online skills were adopted more by male teachers. These findings emphasize that teachers' digital competencies have a multidimensional structure and that effective technology integration should be strengthened by professional development processes and institutional support, as well as individual factors.

In 2013, the European Commission published a report on the professional development of teachers. This report defines teaching as a career-long endeavor and emphasizes the importance of teachers developing their knowledge, skills, values, and attitudes (European Commission/EACEA/Eurydice, 2018). Like all other employees, teachers seek success by shaping their careers based on their education, experience, and talents. Career satisfaction is a key indicator that helps organizations assess employees' intention to leave their jobs (Pachulicz

et al., 2008; Weng & McElroy, 2012). Research shows that individuals who are satisfied with their careers perform better in their roles and have lower intentions to leave the profession (Nauta et al., 2009). Therefore, it is increasingly important for organizations to identify and understand the factors that influence their employees' career satisfaction, which they consider when evaluating their careers, and to develop these factors to reduce the likelihood of employees leaving their jobs (Direnzo & Greenhaus, 2011).

Many studies in the literature emphasize the importance of developing digital competencies of teachers for their career development (Caena & Redecker, 2019; König et al., 2020; Lakkala et al., 2011). Studies aimed at improving the digital competencies of teachers and the workforce reveal that individuals need to be equipped in areas such as digital skills, collaboration, security, and problem solving in order to effectively take part in the information society. While Reisoğlu and Çebi (2020) emphasize that teacher candidates' digital content production and digital collaboration skills should be comprehensively supported in the educational processes, Falloon (2020) argues that digital competencies in teacher education are fundamental for safe and ethical use in the classrooms of the future and that these skills should be consciously imparted by teacher educators. Nemeskeri et al. (2016) show that digital transformation has deepened generational differences in the labor market and that digital skills have become indispensable in business life. However, it is revealed that digital competencies often remain superficial, and education systems are not effective enough in providing these skills. A study by Almås et al. (2021) concluded that prospective teachers are not sufficiently prepared for the professional digital challenges they will face in their careers. All studies jointly emphasize that digital competencies play a critical role in individuals' career journeys and lifelong learning. Teacher education should be considered not only for the use of digital tools, but also for encouraging more thoughtful and critical perspectives on technology use.

The role of teacher competence frameworks is also pivotal in this context. The competencies outlined in these frameworks generally include skills and knowledge related to the effective integration of technology into teaching and learning processes (Lakkala et al., 2011). The European Commission (2013) states that teacher competence frameworks are valuable for defining the outcomes of teacher education, recruiting teachers, and determining professional development needs. These frameworks serve as effective tools that can guide teachers' professional development while promoting their reflection and autonomy throughout their careers. In this regard, teacher competence frameworks also play a crucial role in recognizing educators' success in their careers. Another notable finding is the challenges teachers face regarding digital competence at the start of their careers. A case study by Reisoğlu and Çebi (2020), which used DigCompEdu to examine how future teachers plan to use digital competencies in their professional careers, revealed that future teachers require training in digital skills such as information and data literacy, communication and collaboration, digital content creation, security, and problem-solving. Challenges that early-career teachers face include using digital teaching tools such as online tutoring, presenting learning content, differentiating tasks, providing feedback, and conducting online assessments. Additionally, teachers must find ways to maintain social contact with students and parents (König et al., 2020). These findings suggest that digital competence is a critical requirement in teachers' professional lives. This competence includes not only the ability to use digital tools, but also the ability to apply these tools effectively within a social and pedagogical context.

In summary, studies in the literature primarily explore the connection between digital competence and the education of prospective teachers, as well as their professional careers, from various perspectives. While digitalization has become a crucial factor in teachers' careers, the process of developing digital competencies among teachers brings about significant changes in both education systems and the labor market. Examining the relationship between teachers' perceptions of digital competence and their evaluation of the teaching profession, as viewed by in-service teachers, can help assess the impact of digitalization in current educational environments. Such research will contribute to a comprehensive understanding of how professional seniority influences perceptions of digital competence and the extent to which these perceptions shape teachers' professional identities and commitments. This approach will provide policymakers and education stakeholders with the insights needed to develop more up-to-date strategies for integrating digital skills into professional development programs, ultimately fostering a more digitally competent teacher workforce.

Digital Competence

The concept of digital competence emerged in response to the social need to define the essential competencies for a knowledge-based society (Ilomäki et al., 2016). Digital competence is a multi-layered concept, and it is challenging, if not impossible, to reach a single, comprehensive, universally applicable, and agreed-upon definition (Ala-Mutka, 2011; Ilomäki et al., 2011; Ferrari, 2012). Digital competence began to be discussed as one of the fundamental conditions for lifelong learning in Europe in the early 2000s and gained broader acceptance with the EU recommendations in 2006. Some researchers define digital competence narrowly as the ability to use specific digital tools (e.g., word processors such as MS Word) (From, 2017). However, much of the literature focuses on basic ICT skills or sub-skills (Lakkala et al., 2011). Other authors consider digital competence as a broader concept, including different areas such as ICT policy competence, ethical use, integration with teaching and didactic methods (From, 2017). These different definitions show that the concept of digital competence is multifaceted and wide-ranging.

High-level cognitive skills, such as the ability to critically search for and select information or strategically pursue specific goals, do not necessarily develop through internet experience alone (Ala-Mutka, 2011). Digital competence refers to the ability to use ICT confidently, critically, and creatively in order to pursue objectives associated with employment, learning, daily life, social participation, and civic engagement (Redecker, 2017). According to Instefjord (2015), digital competence encompasses the knowledge, skills, and dispositions required to engage with technology in a critical and reflective manner, particularly when generating new knowledge. In Norwegian education policy, digital competence has been recognized as the fifth basic skill in teacher education (From, 2017). Krumsvik (2011), who criticizes the limitation of digital competence to the mere ability to use digital tools, argues that it should be a more specific pedagogical and subject-oriented concept for teachers.

Teachers' Digital Competence

According to the Organization for Economic Co-operation and Development (OECD) (2019), general or intermediate digital skills are often central to national digital strategies or policies aimed at enhancing the digital literacy or competence of the population. While digital competences are recognized as some of the most essential skills by experts in policy, education,

and science, the rise in online learning opportunities (European Commission, 2021; JISC, 2012; P21 Learning Framework, 2019) has made teachers' digital competence an increasingly important tool for utilizing technology in schools, developing students' skills for the digital future, and promoting innovative teaching methods. Teachers' abilities and attitudes play a key role in how ICT is used in the classroom, and consequently, their students' ability to leverage new technologies to their fullest potential (OECD, 2019). In recent years, as digitalization has increasingly penetrated society and schools, several studies have emphasized the importance of teachers' digital skills (Aditya, 2021; Almazova et al., 2020; Caena & Redecker, 2019; Falloon, 2020; Garzón Artacho et al., 2020; Garzón Artacho et al., 2021; Hatos et al., 2021). Consequently, digital competence includes not only the ability to use digital tools, but also the ability to use digital technologies pedagogically and contribute to students' digital education. Generally, teachers' digital competence can be expressed as the set of knowledge, skills, and attitudes required to operate effectively in a digital teaching environment (Zhao et al., 2021). The Technological, Pedagogical, and Content Knowledge (TPACK) framework developed by Mishra and Koehler (2006) is a prominent measure used to assess teachers' knowledge of how to integrate technology into their teaching. It defines the knowledge that teachers possess as effective technology integrators. Another framework, the ISTE Standards for Teachers (ISTE-ST), created by the International Association for Technology in Education (ISTE), specifies the technology-facilitated skills teachers need. Both frameworks serve as guides for teacher educators in developing curricula that help prospective teachers acquire the content, pedagogies, and technology skills essential for their careers.

European Framework for the Digital Competencies of Educators (DigCompEdu)

The DigComp 2.1 Framework, published by the Joint Research Centre (JRC), the evidence-based science and knowledge service of the European Commission, includes five dimensions (Carretero et al., 2017). The DigCompEdu Framework proposes 22 core competencies designed to capture and define digital competencies specific to educators, organized into six domains. It outlines six stages of development, illustrating how an educator's digital competence typically evolves. This framework helps educators identify their current stage and take specific steps to advance their competence. Each of the 22 core competencies is associated with a set of typical competence-defining activities, offering a more detailed understanding of how educators can develop their digital competencies and what it entails for educators to possess digital competence. In the first two stages, educators acquire new knowledge and develop foundational digital practices as newcomers (A1) and explorers (A2). In the subsequent stages, they apply, expand, and refine their digital practices as integrators (B1) and experts (B2). In the final two stages, they transfer their knowledge, critically evaluate existing practices, and innovate new ones as leaders (C1) and pioneers (C2) (Redecker, 2017).

The DigCompEdu framework provides a role descriptor that reflects the typical focus of digital technology use at each stage of competence in educators' digital development. According to this framework, educators at the A1 (Beginner) level recognize the potential of digital technologies to enhance pedagogical and professional practice. However, they primarily use these technologies for course preparation, management, or organizational communication. Educators at the A2 (Explorer) level also acknowledge the possibilities offered by digital technologies and a willingness to investigate how they can improve teaching and professional work. However, their use of digital technologies may be more limited and

inconsistent, as they may not yet adopt a comprehensive or structured approach. Educators at the B1 (Integrator) level integrate digital technologies into most aspects of their practice, experimenting with various tools and approaches across different contexts and for multiple purposes. They use these technologies creatively to enhance their professional involvement and actively seek opportunities to broaden their expertise. However, they are still working to identify the best tools for specific situations and to effectively incorporate digital technologies into their pedagogical strategies. Educators at the B2 (Expert) level confidently, creatively, and critically employ a wide array of digital technologies to strengthen and enrich their professional practice. They make deliberate choices about which technologies to use for specific circumstances and seek to explore the advantages and limitations of different digital strategies. They stay curious and open to new ideas, knowing there is always more to learn. Educators at the C1 (Leader) level demonstrate a coherent and well-rounded strategy for integrating digital technologies to strengthen both pedagogical and professional practice. At the C2 (Pioneer) level, educators challenge the effectiveness of current digital and pedagogical approaches, including those under their own leadership. Recognizing the constraints of existing practices, they are driven to continue innovating. As pioneers, they explore cutting-edge and sophisticated digital technologies and/or design novel pedagogical frameworks (Redecker, 2017).

Concept of Career

Although the concept of career began to be more widely studied in the business world in the 1970s, its origins can be traced back to the 16th century, with the development of the modern concept of public service. During this period, the idea of a career was particularly associated with civil service roles. The scientific exploration of the concept began with Anne Roe's 1956 book The Psychology of Occupations. This was followed by influential studies, such as Donald E. Supper's Career Psychology (1950) and Triedeman and O'Hara's Choice and Adaptation in Career Development (1963), which expanded the discussion around career development. Additionally, Borows' Industrial Sociology (1964) and John Holland's Theory of Occupational Choice (1966) further enriched the field's literature.

Working life is experiencing rapid change (Blau, 2001), which has amplified the significance of the concept of career, ensuring its relevance in contemporary society. As a result, career development has gained growing significance in individuals' professional lives. According to Griffin (1993), the key distinction between work and career lies in an individual's psychological commitment. For instance, individuals may fail to fully recognize the true importance of their work if they view it solely in terms of fixed hours or financial compensation. However, when individuals consider the quality of their work, as well as aspects like progress and self-realization, in addition to financial income, it indicates they perceive their work as a career (Drucker, 1994). In this context, Griffin (1993) argues that money is just one of many factors influencing the individual. While individuals typically begin their careers to meet basic needs such as salary and promotion, over time, they may strive to fulfill higher-level needs, such as career advancement, which go beyond these basic requirements. In other words, when individuals perceive their work as a career, they may become more engaged and invested in it. According to Cascio (2015), a career subjectively represents the transformation of an individual's values, attitudes, and motivations as they mature, while objectively, it refers to the sequence of positions held throughout their professional life. In general, a career is a process

related to professional practice and engagements shaped by both individual and organizational goals, with aspects that individuals can control and monitor throughout their lives (Orpen, 1994).

Career Satisfaction

Career satisfaction is defined as an individual's feelings or reactions to events related to career and work (Gattiker & Larwood, 1989). In their study, Williamson, Pemberton, and Lounsbury (2005) articulated the distinction between career satisfaction and job satisfaction.. They defined the level of happiness that individuals feel about their careers, which includes all the jobs they have worked in throughout their lives, as "career satisfaction", and the indicator of feelings related to a single job or position as "job satisfaction".

Career satisfaction was assessed by Greenhaus et al. (1990) based on the level of goal achievement in five key areas: occupational achievements, general occupational goals, income-related goals, career advancement, and the acquisition of new skills. An individual's success in achieving these goals plays a crucial role in their career satisfaction (Yüksel, 2005). Accurately identifying the factors that contribute to career satisfaction is essential not only for attracting qualified employees to an organization but also for ensuring that employees remain motivated and highly committed (Judge et al., 1995).

Less experienced teachers tend to have a limited perspective on teaching, and their perceptions of digital competence can vary depending on gender and university background (Zhao et al., 2021). Similarly, Hatos et al. (2022) found that digital skills are perceived differently by gender, according to the perceptions of Romanian teachers with an associate degree. A study by Ng et al. (2005) found no relationship between gender and career satisfaction. In contrast, Greenhaus et al. (1990) in the USA, Seibert and Kraimer (2001) (also in the USA), Tak and Lim (2008) in Korea, and Hirschi et al. (2016) in Germany found a relationship between gender and career outcomes among all genders. On the other hand, it has been reported that demographic variables can predict career satisfaction to some extent, but internal, psychosocial variables, as well as work quantity and interpersonal dynamics, can influence these outcomes (Richards et al., 2017).

When we examine the difference between teachers' career development and professional development, research shows that development has positive effects on career advancement and professional commitment (Coldwell, 2017; Tantawy, 2020). A performance study investigating the differences in professional burnout levels and job satisfaction among teachers found a significant impact on their self-efficacy (Bartosiewicz et al., 2022). It is also evident that the distribution of financial resources within the school environment, as well as the use of digital literacy and ICT, plays an important role in shaping career outcomes (Li & Yu, 2022; Sahito & Vaisanen, 2017). Previous studies have shown that teacher collaboration and professional communities have positive effects on job satisfaction (Stearns et al., 2015). The literature indicates a need to examine both individual and contextual variables, such as the development of career relationships, job satisfaction, and burnout status. Peluchette (1991) observed that individual, family, and educational variables are key factors in the career success of teaching professionals. Additionally, teachers' positive attitudes toward technology can contribute to beneficial economic developments (Morris, 2021). One definition of career satisfaction for teachers refers to how well the work environment meets their needs, while

another definition encompasses both psychological and physical satisfaction with the work environment and personal performance (Li and Yu, 2022). It is possible that teachers' career satisfaction, as related to their profession rather than job satisfaction, positively influences their overall life satisfaction. Understanding both the digital competencies and career development of teachers is crucial for fostering social respect for individuals in the teaching profession.

Enhancing the professional well-being of teachers is undeniably critical in education and training environments. From this perspective, understanding teachers' technological competencies and fostering their commitment to the profession can help alleviate career concerns and dissatisfaction. In their research on 'Educational Leadership,' Hoyle (2001) found that improving teachers' commitment to their work, advancing their education levels, and achieving job satisfaction can be supported by elevating their professional status and prestige. This study, which focuses on teachers' career satisfaction, differentiates itself from previous research on job satisfaction (Bartosiewicz et al., 2022; Demirtas, 2010; Ignat & Clipa, 2012; Stearns et al., 2015; Toropova et al., 2020). This research aims to explore the relationship between in-service teachers' self-perception of their digital teaching competence and their career satisfaction. To this end, the study sought answers to the following questions:

(1) What are the levels of digital competence and career satisfaction among teachers?

(2) Do teachers' perceptions of digital competence differ according to gender, length of teaching experience, position, and education level?

(3) Do teachers' perceptions of career satisfaction vary according to gender, length of teaching experience, position, and education level?

(4) Is there a significant relationship between teachers' digital competence perception levels and career satisfaction?

Method

Research Design and Study Group

The research is a quantitative study based on the relational screening model. This model aims to determine whether a relationship exists between two or more variables, and if so, to assess the direction and strength of this relationship (Büyüköztürk et al., 2008). The research data were collected simultaneously using a personal information form, a digital competence scale for educators, and a career satisfaction scale. The study was conducted in the fall semester of the 2022-2023 academic year. Data was collected electronically via Google Forms. A total of 208 teachers from different schools and grades of public schools affiliated with the Ministry of National Education in Ankara, Türkiye, participated in the study voluntarily. The study group was selected using a convenience sampling method, a type of non-random sampling that allows for the inclusion of participants who are readily accessible and willing to participate (Büyüköztürk et al., 2008). While this method helps minimize loss of time, effort, and resources, it also limits the generalizability of the findings.

Data Collection Instruments

Personal Information Form

This form was created by the researchers in line with the research objectives in order to determine the gender, year of teaching experience, position, and education level of the teachers in their respective schools. Table 1 presents the descriptive statistics of the study group for demographic variables. Table 1 shows that 97 (46.6%) of the study participants are women, while 111 (53.4%) are men. Regarding their positions, 48 (23.1%) of the teachers are specialist teachers. In terms of seniority, 68 teachers (32.7%) have 10-15 years of teaching experience, 39 (18.8%) have 16-20 years, 49 (23.6%) have 21-25 years, and 52 (25%) have 26 or more years of service. While 137 (65.9%) of the participants had a bachelor's degree, 71 (34.1%) had a master's degree or doctorate.

Table 1

Descriptive Statistics for Teacher Demographics

Characteristic	*Categories*	*N=208*	*%*
Gender	Female	97	46.6
	Male	111	53.4
Length of Teaching Experience	10-15 years	68	32.7
	16-20 years	39	18.8
	21-25 years	49	23.6
	Over 26 years	52	25.0
Position	Teacher	160	76.9
	Specialist Teacher	48	23.1
Education Level	Bachelor's degree	137	65.9
	Postgraduate	71	34.1

Digital Competence Scale for Educators

The Digital Competence Scale for Educators (DCSE), which aims to assess educators' digital competencies, was developed by Redecker (2017). The study group's responses are measured on a scale ranging from 0 to 4. The scale was adapted for Türkiye by Toker et al. (2021). The scale consists of 22 items and six factors, with no negative items. The six factors are: professional engagement (four items), digital resources (three items), teaching and learning (four items), evaluation (three items), empowering students (three items), and facilitating students' digital competencies (five items).

The reliability coefficient of the scale for the 22 items was calculated as 92. Item analysis results revealed that item-total score correlations r (j(x)) is .248 for item 4 and ranged between .407 and .709 for the other items. The Cronbach's alpha values for the scale factors were as follows: .60 for professional engagement, .62 for digital resources, .74 for teaching and learning, .68 for assessment, .73 for empowering students, and .87 for facilitating students' digital competencies. According to the literature, a Cronbach's alpha value of .70 or above is generally viewed as an acceptable level of internal consistency reliability (Nunnally & Bernstein, 1994). Based on these criteria, while most sub-dimensions of the scale demonstrate acceptable to

high reliability, the factors with alpha values slightly below .70 can still be considered moderately reliable within the context of this study. The competence levels, based on the scores that can be obtained from the scale, are categorized as follows (from lowest to highest score): Newcomer (A1: 0-19), Explorer (A2: 20-33), Integrator (B1: 34-49), Expert (B2: 50-65), Leader (C1: 66-80), and Pioneer (C2: 81 and above).

Career Satisfaction Scale

In order to measure career satisfaction, the five-item career satisfaction scale developed by Greenhaus et al. (1990) and used by Hofmans et al. (2008) was used. Responses were taken on a 5-point Likert scale (1=Strongly disagree, 5=Strongly agree). The Turkish adaptation and the validity-reliability study of the Career Satisfaction Scale were conducted by Avcı and Turunç (2012). The factor analysis performed by Avcı and Turunç (2012) revealed that the data fit the single-factor structure of the scale, with factor loadings ranging between .70 and .90. Additionally, the reliability analysis conducted by the same researchers indicated that the Cronbach's alpha reliability coefficient of the scale was calculated as .91. As a result of the internal consistency analysis of the five-item career satisfaction scale, Cronbach's Alpha coefficient was found to be 0.923. This value indicates that the scale has a very high level of reliability.

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS). There were no missing values in the collected data, and the distribution was found to be normal, as the skewness and kurtosis values were within the predicted range of +2. Furthermore, the z-statistic, obtained by dividing the skewness coefficient by its standard error, was less than 1.96 for $\alpha = .05$ and 2.58 for $\alpha = .001$, indicating that the distribution does not significantly deviate from normal (Büyüköztürk, 2013). Histogram plots were also examined to visually assess the distribution. Furthermore, normality was checked separately for each subgroup (e.g., gender, educational level, seniority), and all were found to meet the assumptions of normal distribution. Based on these findings, the variables were deemed suitable for parametric statistical analyses. To analyze the data obtained from the scales, independent samples t-tests were performed for the variables of gender, position, and education level, while a one-way ANOVA was applied to examine the effect of length of teaching experience. Levene's test was performed to evaluate the homogeneity of variances, and the results indicated that the differences in variances between groups were not significant ($p > .05$). For post-hoc comparisons between groups, Bonferroni test was utilized. Additionally, a correlation analysis was performed to investigate the relationship between teachers' digital competence perception levels and career satisfaction, which addressed the fourth research question.

Results

Teachers' perception levels of digital competence and career satisfaction

The first research question is: 'What are the levels of digital competence and career satisfaction among teachers?' The Digital Competence in Education Scale consists of 22 items and six factors. Based on the results of the scale application, participants are evaluated across six categories: Newcomer A1, Explorer A2, Integrator B1, Expert B2, Leader C1, and Pioneer C2.

The distribution of the study group according to their digital competence levels is presented in Table 2.

Table 2

Digital Competence Level Distribution of Teachers

Levels	*n*	*%*
Newcomer A1 (19 points and less)	6	2.9%
Explorer A2 (20 -33 points)	47	22.6%
Integrator B1 (34-49 points)	75	36.1%
Expert B2 (50 -65 points)	55	26.4%
Leader C1 (66 – 80 points)	25	12.0%
Pioneer C2 (81 points and higher)	0	0%
Total	208	100%

It can be seen from Table 2 that the highest number of teachers is in the *Integrator (B1)* level, with a rate of 36.1%. Notably, there are no teachers in the *Pioneer (C2)* category among the participants. The results of the descriptive analysis regarding teachers' digital competence scores and levels are given in Table 3.

Table 3

Statistics on Digital Competence Score and Level

	N	*Mode*	*Median*	*Mean ($\bar{X}$)*	*Minimum*	*Maximum*
Digital Competence Scores	208	41	41	44.3	13	80
Digital Competence Level	208	3	3	3.22	1	5

According to descriptive statistics, the digital proficiency scores of the participating teachers (N = 208) ranged from 13 to 80, with a mean of 44.3. According to the scale's scoring system, this average ranks teachers in the Level 3 (Integrator; between 34 and 49) category in terms of digital proficiency. Based on categorical digital proficiency levels, the mean score was calculated as 3.22 out of 5. These findings indicate that the majority of participants were at the "Integrator" level.

According to the descriptive analysis results, the average career satisfaction level of teachers is 3.04, indicating a medium level of satisfaction. The group with the highest average career satisfaction score is teachers with 10-15 years of experience. The status and seniority of individuals in their workplace certainly influence their motivation and satisfaction. When career is defined as the satisfaction an individual feels about their current position or career step, it reflects the outcome of evaluations made by employees regarding the extent to which their expectations are met in the organization they work for (Heslin, 2005, p. 116). The underlying reasons for the teachers' satisfaction not increasing despite their seniority may be attributed to managerial, organizational, or financial factors.

Descriptive analysis of digital competence by gender, length of teaching experience, position, and education level

The second question of the research is "Do teachers' perceptions of digital competence differ according to gender, length of teaching experience, position, and education level?". Before the analysis, descriptive statistics for the Digital Competence Scale for Educators were calculated. Accordingly, mode, median, mean ($\bar{X}$), Standard Deviation (SD), skewness, and kurtosis values are presented in Table 4.

Table 4

Statistics According to Areas of the Digital Competence Scale

Areas	*N*	*Mode*	*Median*	*Mean ($\bar{X}$)*	*sd*	*Skewness*	*Kurtosis*
Professional engagement	208	2.25	2.00	1.94	.74	.127	-.737
Digital Resources	208	2.67	2.33	2.20	.82	-.135	-.621
Teaching and Learning	208	2.00	2.00	2.02	.91	.093	-.727
Assessment	208	1.33	2.33	2.15	.91	.189	-1.039
Empowering Students	208	1.67	2.00	2.00	.86	.056	-.676
Facilitating Students' Digital Competencies	208	1.20	1.20	1.86	.84	.103	-.266
Digital Competence Scale Total Score	208	41	41	44.30	14,97	.209	-.806

When the descriptive statistics for the data set presented in Table 4 are examined, it is revealed that the digital proficiency levels of the participating teachers are generally at a moderate level. The highest mean score across competence areas was obtained for the "Digital Resources" dimension with a score of 2.20, while the lowest was recorded for the "Facilitating Students' Digital Competencies" dimension with a score of 1.86. Skewness and kurtosis values for all variables were within ±1, indicating that the distributions were close to a normal distribution. Low standard deviations indicate a homogeneous structure of the responses and that there was no significant variance among participants. The mean total digital competence score ($\bar{X}$ = 44.30) was moderate compared to the theoretical maximum, indicating a need for digital competence development. According to the Levene tests performed to check the equality of variances before the analysis, homogeneity of variances is ensured for gender (p = .181), position (p = .21), and education level (p = .92).

The independent samples t-test results shown in Table 5 indicated that there was no significant difference between the mean total digital competence scores of gender groups (p = .777,>.05). Although there was a small difference of approximately 0.59 points between the digital competence scores of females and males, this difference was not statistically meaningful. Because the mean difference was small and the p-value was very high, Cohen's d was also very small. Cohen's d was 0.04, which is a negligible effect size. Although there was a difference of approximately 1.91 points between the digital competence levels of specialist teachers and teachers, this difference was not statistically significant according to the independent samples t-test results (p = .44,>.05). An independent samples t-test performed between the mean total digital competence scores by educational status showed a significant

difference (p = .003,<.05). The digital competence scores of postgraduate graduates ($\bar{X}$ = 48.58) are significantly higher than the scores of bachelor's degree ($\bar{X}$ = 42.09). Furthermore, Cohen's d value, calculated to assess the effect size for the difference between teachers' education levels, was found to be -0.44, indicating a moderate effect size. This suggests that there is a moderate difference in digital competence scores between teachers with bachelor's degree and postgraduate education, with postgraduate educators demonstrating higher levels of digital competence.

Table 5

Group Differences in Digital Competence by Gender, Position and Education Level

Variables		*N*	*Mean ($\bar{X}$)*	*sd*	*t(206))*	*p*	*Cohen d*
Gender	Female	97	44.62	15.71	0.284	.777	0.04
	Male	111	44.03	14.37			
Position	Teacher	160	43.86	15.40	-0.774	.440	-0.13
	Specialist Teacher	48	45.77	13.52			
Education Level	Bachelor's degree	137	42.09	14.92	-3.021	.003*	-0.44
	Postgraduate	71	48.58	14.23			

Table 6

Group Differences in Digital Competence by Teaching Experience

Teaching Experience	*N*	*Mean ($\bar{X}$)*	*sd*	*df*	*F(204)*	*p*	*(Partial Squared)η^2*	*Eta*
10-15 years	68	46.79	15.70	3	1.31	.274	0.019	
16-20 years	39	41.41	14.53					
21-25 years	49	44.73	14.47					
Over 26 years	52	42.81	14.66					
Total	208	44.30	14.97					

The one-way analysis of variance (ANOVA) presented in Table 6 showed that length of teaching experience had no statistically significant effect on the digital competence total scores (p = .274> .05). According to this result, digital competence scores do not differ significantly among individuals in different length of teaching experience groups. The Levene test results, applied before the analysis, indicated that the assumption of homogeneity of variance was met (p = .550). Therefore, the assumptions of the one-way ANOVA analysis are valid. The effect size value (η^2 = .019) is quite low, indicating that length of teaching experience only explains approximately 1.9% of the variance in total digital competence scores. These findings suggest that teachers' digital competence levels do not change significantly according to length of teaching experience. No systematic difference was found regarding the increase or decrease in digital competencies with increasing length of teaching experience. The relatively low effect size suggests that length of teaching experience is not a determining factor in digital competence. This could indicate that teachers may have similar digital skill levels regardless of

their length of teaching experience, or that these skills are influenced more by other factors such as individual attention, training, or access to technology.

Career satisfaction by gender, length of teaching experience, position, and education

The third question of the research is "Do teachers' perceptions of career satisfaction vary according to gender, length of teaching experience, position, and education level?" Before the analysis, descriptive statistics for the scale were calculated, and accordingly, mode, median, mean ($\bar{X}$), Standard Deviation (SD), skewness and kurtosis values are presented in Table 7. These descriptive statistics help in understanding the central tendency, variability, and the shape of the distribution of the data for the scale items. It provides a clear view of the data characteristics before conducting further analysis.

Table 7

Findings on Career Satisfaction Scale

	N	*Mode*	*Median*	*Mean ($\bar{X}$)*	*sd*	*Skewness*	*Kurtosis*
Average Career Satisfaction	208	3	3	3.04	1.02	-.148	-.501

When Table 7 is examined, it is evident that the skewness and kurtosis values of the scores obtained from the career satisfaction scale are within the range of ± 1.96. These results show that the data are normally distributed. The average career satisfaction score is ($\bar{X}$ = 3.04), which suggests that teachers' career satisfaction perceptions are at a medium level.

Table 8

Group Differences in Career Satisfaction by Gender, Position and Education Level

Variables		*N*	*Mean ($\bar{X}$)*	*sd*	*t(206))*	*p*	*Cohen d*
Gender	Female	97	2.99	0.98	-0.60	.552	0.08
	Male	111	3.08	1.06			
Position	Teacher	160	3.04	1.01	-0.12	.908	-0.02
	Specialist Teacher	48	3.06	1.08			
Education Level	Bachelor's degree	137	3.01	1.05	-0.73	.466	-0.11
	Postgraduate	71	3.12	0.98			

The results of the independent samples t-test, presented in Table 8, showed that there was no statistically significant difference between the career score means of male and female participants (p = 0.552 >.05). The means of male and female participants were quite close, and the difference was not significant. The Levene test showed that the variances were homogeneous (p = 0.571). An independent samples t-test revealed no significant difference between the career score means of participants with teacher and specialist teacher positions (p = .908 >.05). Levene's test revealed that the variances were homogeneous (p = .664). Effect size calculations also support this result (Cohen's d = -0.02, 95% CI [-0.34, 0.30]), indicating that the position variable had no significant effect on career score. An independent samples t-test revealed no significant difference between the career score means of participants with

bachelor's degree and postgraduate degrees (p = .466 >.05). Levene's test revealed that the variances were homogeneous (p = .492). Effect size calculations also support this result (Cohen's d = -0.11, 95% CI [-0.39, 0.18]), indicating that educational status has no statistically or practically significant effect on career score.

Table 9

Group Differences in Career Satisfaction by Teaching Experience

Teaching Experience	*N*	*Mean (X̄)*	*sd*	*df*	*F(204)*	*p*	*(Partial Eta Squared) η²*
10-15 years	68	3.22	0.95	3	2.881	.037*	0.04
16-20 years	39	3.19	0.90				
21-25 years	49	3.02	0.99				
Over 26 years	52	2.71	1.17				
Total	208	3.04	1.02				

According to the Levene variance homogeneity test performed before the analysis, the variances were found to be homogeneous (p = .121 > .05). Therefore, the Bonferroni post-hoc test was applied after the one-way ANOVA analysis. One-way ANOVA analysis presented in Table 9 showed that there was a statistically significant difference in the career score averages according to different lengths of teaching experience (p = .037<.05). This result reveals that length of teaching experience explains approximately 4.1% of the variance in career scores. The obtained eta squared value (η^2 = .041) indicates a small-to-medium effect size (Cohen, 1988). As a result of multiple comparisons with Bonferroni correction, it was observed that the significant difference was especially between participants with 10–15 length of teaching experience and those with 26 years or more of seniority (mean difference = 0.512, p = .039). Differences between other length of teaching experience groups were not found to be statistically significant (p > .05). The calculated effect size for the difference between these two groups was Cohen's d = 0.49, corresponding to a medium effect. The results indicate that career score averages differed by seniority, with a particularly significant difference between the lowest (10–15 years) and highest (26 years and above) seniority groups. However, the moderate effect size also suggests that the effect of length of teaching experience on career scores is limited.

Relationship between digital competence and career satisfaction

The fourth question of the research is "Is there a significant relationship between teachers' digital competence, perception levels, and career satisfaction?" The research question regarding the relationship between teachers' digital competence perception levels and career satisfaction was examined through correlation analysis. According to the results presented in Table 10, a low-level positive relationship was found between teachers' digital competence perception levels and their career satisfaction. This suggests that as teachers' digital competence perception levels increase, their career satisfaction also tends to improve, though the relationship is relatively weak.

Table 10

Relations Between Career Satisfaction and Digital Competence Level

Variables		*Career Average Level*	*Digital Competence Level*
Career Satisfaction Level	Pearson Correlation	1	.171
	Sig. (2-tailed)		.014*
Digital Competence Level	Pearson Correlation	.171	1
	Sig. (2-tailed)	.014*	

** correlation is significant at the 0.05 level.*

Online technologies are indeed more flexible and useful compared to traditional learning models and contribute to the effective transmission of knowledge and skills (Li & Yu, 2022). When Table 10 is examined, it is found that there is a low-level positive relationship between educators' self-perception of competence in using online technologies in the schools where the research was conducted and their satisfaction with their professional careers. This relationship suggests that while teachers' digital competencies may be linked to their career satisfaction, the relatively weak correlation could point to underlying issues. It may imply that digitalization is not entirely indifferent to teachers, but rather, the low correlation might reflect inadequacies or gaps in the effective use of technology. Teachers' perceived competence in using digital tools may have a significant negative impact on their overall career satisfaction due to a number of factors.

Discussion

This study examined teachers' digital competence levels and career satisfaction levels. According to the average scores obtained from the study, teachers' digital competence ($\bar{X}$ = 3.22) and career satisfaction ($\bar{X}$ = 3.04) are both at moderate levels. When examining the distribution of digital competence levels among teachers included in the study, it is evident that the highest proportion of teachers (36.1%) falls into the "Integrator B1" level. Teachers in this group are proficient at integrating digital technologies into most of their practices, experimenting with them in various contexts and for different purposes. Additionally, 26.4% of the teachers in the study are at the "Expert B2" level, and 22.6% are at the "Explorer A2" level. These findings suggest that a significant portion of the teachers are competent in using digital technologies, although there is still a notable proportion of teachers at lower levels of digital competence. Among these groups, which are in close proportions, teachers at the Explorer A2 level need encouragement, insight, and inspiration (Redecker, 2017). For instance, teachers in this group can be supported in using technology through peer collaboration and mentoring. Teachers' digital competencies are influenced not only by the physical infrastructure of the school and the use of ICT tools in lessons but also by their relationships with colleagues (Dai, 2023). Indeed, studies in the literature have shown that teachers' satisfaction is affected by working conditions, such as resources and a supportive environment (Li & Yu, 2022). Teachers at the Expert B2 level in this study could play a crucial role in driving innovative practices in the school. These teachers possess a higher level of digital competence and can help integrate technology in teaching and learning. Interestingly, no teachers in the study were classified at

the Pioneer C2 level. However, this might change if a different sample is used. Educators at the Pioneer C2 level are considered unique and rare (Redecker, 2017), and in addition to having the ability to lead innovation, they can also serve as role models for teachers at the beginning of their careers.

Apart from these findings, the teacher group with the lowest percentage in the study was the Newcomer A1 group, with just 2.9%. Teachers in this group need guidance and encouragement to apply their existing digital competencies effectively in the pedagogical field. This result is promising in that it suggests the digital skills of the teachers in the study are not at the lowest level, and, except for a small percentage, teachers are not falling behind in the digital age. Teachers' ability to use their digital skills effectively in the classroom to support career development can positively influence job satisfaction. Previous research has shown that teachers who are satisfied with their jobs tend to perform better (Iqbal et al., 2016). This highlights the importance of providing ongoing support and professional development opportunities for teachers, particularly those in the earlier stages of their digital competence journey, to enhance their satisfaction and performance in the profession.

When the average scores of the digital competence scale obtained in the study were examined, it was observed that the highest average was in the Digital Resources field. Teachers at the Integrator B1 level in this field possess the competencies to use evaluation strategies, analyze student data, and provide feedback and planning accordingly. These competencies reflect the use of digital technologies for in-class evaluation, such as digital exams, e-portfolios, and educational games. The ability to utilize these tools depends not only on the physical infrastructure of the school but also on the availability of personal computers and teachers' proficiency with technology to create and implement such tools. According to previous studies, digital competence encompasses several aspects: technical skills, the ability to work and learn using digital technologies effectively in daily life, the capacity to critically evaluate digital tools, the ability to teach using ICT tools, as well as demographic factors and the motivation to engage in and commit to a digital culture (Garzón-Artacho, 2021; Hatos et al., 2022; Ilomäki, 2016; Ilomäki et al., 2016; Prieto-Ballester, 2021; Zhao et al., 2021). These findings highlight the multifaceted nature of digital competence, emphasizing the need for a balanced approach to developing teachers' digital skills across various areas.

Teacher satisfaction is closely linked to the well-being of teachers, the harmony within the school environment, and the advancement of the teaching profession (Toropova et al., 2021). Monetary rewards have often been considered an important motivator. However, Drage (2010) emphasized that teachers' motivation to participate in continuous learning and development stems from intrinsic factors such as personal growth, job satisfaction, and the desire to improve teaching practices, rather than solely from financial incentives. This suggests that while financial incentives remain a significant factor, creating an environment that fosters intrinsic motivation through professional development opportunities, peer support, and recognition of teachers' efforts is essential for sustaining career satisfaction and improving teachers' digital competence.

The lowest average in the digital competence scale was found in the area of Facilitating Students' Digital Competence. Teachers in this area are expected to guide students in managing their digital identities, protecting their privacy, and using digital tools responsibly. Furthermore, these competencies also include the ability to assist students with diverse needs,

including those with physical or mental limitations or learning disabilities, in using and developing their digital skills.

Providing appropriate resources and support to teachers who work with students with special needs to help them interact with technology is crucial. Training teachers in digital pedagogy, as suggested by Skantz-Åberg et al. (2022), can improve their attitudes and confidence in applying technological tools in inclusive educational settings. Considering inclusive education as a necessity in today's teaching environment, it is essential to support the training and motivation of teachers to enhance their digital competencies in this area. By equipping teachers with the skills and knowledge to facilitate students' digital competence, we can create more equitable educational opportunities for all students, including those with special needs. This support can lead to positive outcomes both for teachers' career satisfaction and for the students' digital literacy development.

According to the t-test and ANOVA results, no significant differences were found in teachers' digital proficiency scores based on gender, position, and length of teaching experience. However, a significant difference was observed in teachers' digital proficiency scores based on their level of education. The results revealed that teachers with bachelor's degrees had lower digital proficiency scores than those with master's degrees ($p < .05$). This finding suggests that higher academic proficiency contributes positively to teachers' perceptions of digital proficiency. The higher digital proficiency scores of teachers with master's degrees may be attributable to the fact that post-graduate education generally involves more intensive use of technology. Academic work requires at least minimal use of computers and technology, and this is likely enhanced by digital proficiency. Additionally, though there were few teachers with doctoral degrees in the study, the data showed that teachers' digital competence increases with the level of education they have received. This trend aligns with research conducted on teacher candidates in Spain, where students pursuing a master's degree had higher skill acquisition values and more advanced digital competence levels than undergraduate students (García-Vandewalle García et al., 2023). This suggests that the higher the level of academic education a teacher receives, the more positive the self-evaluation of their digital competence becomes. From this perspective, teachers' academic qualifications directly contribute to their ability to use digital technologies in the classroom (Gomez Garcia, 2015). However, it is important to note that education alone is not sufficient. Teachers must also develop technological, pedagogical, and content knowledge, as the nature of the information being taught requires these skills (Mishra & Koehler, 2006). In conclusion, for teachers to improve and remain current in their profession, it is essential that they continue their education throughout their careers. Ongoing professional development is vital for teachers to acquire the necessary knowledge, skills, and attitudes to fulfill their pedagogical roles effectively in the classroom (Redecker, 2017).

The teachers in this study had an average career satisfaction score of 3.04, indicating a moderate level of satisfaction. No significant differences were found in career satisfaction based on gender, position, or level of education. When the data were examined by seniority, the group with 10-15 years of experience had the highest career satisfaction score ($\bar{X} = 3.22$), while the group with 26 or more years of experience had the lowest score ($\bar{X} = 2.71$). While the findings suggest that career satisfaction decreases with seniority, this phenomenon can be interpreted in terms of burnout theory, which posits that prolonged occupational stress

without adequate support leads to emotional exhaustion and decreased job satisfaction (Maslach & Leiter, 2016). Furthermore, Herzberg's two-factor theory suggests that extrinsic factors, such as salary and recognition, which are often perceived as inadequate by senior teachers, may contribute to dissatisfaction even when intrinsic motivations remain constant (Herzberg, 1966). However, contrasting studies report stable or even increasing satisfaction among senior teachers (Ingersoll, 2001), suggesting that individual coping mechanisms and institutional support play moderating roles. The observed decline, therefore, highlights the need for targeted interventions to address the changing professional needs of senior teachers. As highlighted in Akiri and Ugborugbo's (2009) study, sources of dissatisfaction include low salary, poor public image, and lack of recognition for highly qualified and experienced teachers. Over time, senior teachers may feel underappreciated or even experience burnout, which may lead to a decrease in their career satisfaction. As seniority increases, teachers may feel that their contributions are not sufficiently rewarded, which may negatively impact their job satisfaction. This is consistent with research on teacher burnout, which suggests that a significant proportion of teachers report high levels of stress, and that in one Australian study, over 50% of teachers are considering leaving the profession due to burnout and dissatisfaction (Carroll et al., 2022). Teachers, especially those with many years of experience, may experience increased anxiety, dissatisfaction, and burnout, which can impact their teaching performance and mental well-being. To address this issue, it is essential that educators feel supported in their professional roles. In particular, the integration of technology into the classroom should be addressed in a way that does not overwhelm teachers. Ensuring that teachers have the resources, support, and recognition they need to effectively integrate technology and avoid burnout is crucial to maintaining their career satisfaction and mental health (Morris, 2021).

According to the findings in the study, there is a low-level positive relationship between teachers' digital competence levels and their career satisfaction levels. This suggests that teachers' perceptions of their digital competence are linked to their overall satisfaction with their careers, although there may be other factors influencing this relationship. Career satisfaction is a complex concept influenced by various factors, including the structure of the school, relationships with school administrators, the activities carried out at the school, and teachers' satisfaction with these activities (Chapman & Lowther, 1982). The adequacy of career development opportunities also plays a crucial role in career satisfaction. Human resources experts emphasize that one of the primary reasons for the loss of qualified employees in organizations is the lack of career development opportunities (Derven, 2015). Teacher satisfaction is particularly important because teachers directly impact students' professional lives. While job satisfaction directly impacts their personal well-being, it also has indirect impacts on various aspects of education. Given the central role of teacher education in producing a highly educated workforce, ensuring that teachers are satisfied with their careers is crucial for the development of a strong, effective educational system (Fwu & Wang, 2002). By providing teachers with opportunities for professional growth, recognition, and support, schools can help enhance their career satisfaction, which, in turn, may positively influence their digital competence and teaching effectiveness.

Conclusion and Recommendations

In this study, the relationship between teachers' perceptions of their digital competence levels and their career satisfaction was examined by taking into account variables such as gender, seniority, position, and educational background. The results indicate a positive relationship between teachers' perceived competence in using educational technologies and their reported levels of career satisfaction. However, the relatively weak strength of this relationship suggests that individual, organizational, and managerial factors may affect teachers' perceptions of their career satisfaction. Indeed, the concept of school leadership creates a significant impact in developing digital competence among teachers by creating a clear vision for technology integration and facilitating access to the necessary resources (Leithwood et al., 2020). Prioritizing professional learning communities and providing continuous technical and pedagogical support by leaders contributes to the creation of environments conducive to digital innovation (Hallinger & Heck, 2010). In addition, the provision of structured frameworks by policymakers that finance digital skills training in educational settings, together with incentives for participation, can accelerate skills development efforts across educational institutions (OECD, 2021). In this way, it may be possible to address technical infrastructure inequalities to ensure equitable access to digital tools and thereby reduce the digital divide disadvantage. While the study focuses on the Turkish educational context, the findings are consistent with global trends indicating a moderate level of digital competence among teachers (Eurydice, 2019). For example, studies in Finland and Estonia show similar patterns of digital skills gaps that require targeted professional development (Ilomäki et al., 2016). DigCompEdu provides a comprehensive reference point for assessing and developing digital competences internationally, highlighting the universality of challenges in technology integration (Redecker, 2017).

Future research could specifically investigate the longitudinal effects of career ladder applications on teachers' digital competence and job satisfaction. Possible research questions to be prepared for this purpose could be `How do career advancement opportunities affect teachers' motivation to develop digital skills?` and `What is the effectiveness of targeted digital education programs on teaching practices and professional well-being over time?` In particular, qualitative studies examining teachers' professional motivations and life experiences related to institutional support could provide detailed information on the barriers and advantages to technology adoption.

Limitations

The fact that the study participants were teachers in Ankara limits the generalizability of the results to a broader population of teachers in Türkiye or internationally. Furthermore, the relatively small number of participants in certain subgroups, such as head teachers and school principals, limits the ability to conduct detailed subgroup analyses. Furthermore, data collection occurred during the early implementation phase of Türkiye's career ladder reform, potentially affecting teachers' perceptions of career satisfaction and related variables. Differences in technological infrastructure across the schools included in the study may have also influenced digital proficiency levels, but this was not systematically controlled. Future studies using longitudinal designs and stratified random sampling could address these limitations and yield more reliable findings by examining the factors that influence teachers' professional experiences.

Author Contributions

Arzu Altın: Conceptualization and research design, data collection, analysis and interpretation writing and editing the article.

Zühal Topcu: Conceptualization and research design, revising the article.

Declarations

Ethical Approval and Informed Consent

This study was approved by Gazi University Institutional Ethical Review Board. All procedures in this study were conducted in accordance with Gazi University Institutional Review Board's approved protocols. Written informed consent was obtained from the participants for their anonymized information to be published in this article.

Supplemental Material

There are no supplemental materials for this article.

Disclosure for AI Use

An AI-based language editing tool (ChatGPT, OpenAI) was used solely for language editing purposes during the preparation of this manuscript. No AI tools were used for content generation, data analysis, scientific interpretation, or development of the study's findings. All scientific content was produced and verified by the author(s).

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Uluslararası Eğitim Programları ve Öğretim Çalışmaları Dergisi
***15*(2), 2025, 236-268**
www.ijocis.com

TÜRKÇE GENİŞ ÖZET

Öğretmenlerin Dijital Yeterlik ve Kariyer Memnuniyeti Algıları Arasındaki İlişkinin İncelenmesi

Dijitalleşme, öğretmenlerin kariyerlerinde önemli bir etken haline gelirken öğretmenlerin dijital yeterlikleri geliştirme süreçleri eğitim sistemlerinde ve işgücü piyasasında önemli değişimlere yol açmaktadır. Öğretmenlerin dijital yeterlik algıları ile öğretmenlik mesleğini bir kariyer mesleği olarak değerlendirmeleri arasındaki ilişkinin hizmet içi öğretmenlerin gözünden incelenmesi, günümüz eğitim ortamlarında dijitalleşmenin değerlendirilmesine olanak sağlayabilir. Bu araştırma, mesleki kıdemin öğretmenlerin dijital yeterlilik algıları üzerindeki etkisini açıklığa kavuşturmanın yanı sıra, bu algıların mesleki kimlik ve bağlılıkla olan ilişkisine yönelik kapsamlı bir anlayış geliştirilmesine katkıda bulunacaktır. Bu çalışmada, öğretmenlerin dijital yeterlik algı düzeyi ile kariyer memnuniyetleri arasındaki ilişki cinsiyet, kıdem, ünvan ve eğitim durumu değişkenlerine göre incelenmiştir. Çalışmanın bulgularına göre, öğretmenlerin dijital yeterlik algı düzeyi ile kariyer memnuniyetleri orta düzeydedir. Bununla birlikte, öğretmenlerin büyük bir çoğunluğunun entegratör (B1) düzeyde olduğu ve dijital yeterlilik algılarının öğrenim düzeyi arttıkça yükseldiği görülmektedir. Ayrıca, öğretmenlerin mesleki kıdemi arttıkça kariyer memnuniyet düzeyinin azaldığı görülmektedir. Eğitimin ön saflarında yer alan öğretmenlerin sınıf içinde hissedecekleri yetkinlik duygusu, onların mesleki memnuniyet düzeyinin yükselmesine katkı sağlayabilmektedir. Öğrenme ve öğretme süreçleri için teknolojinin kullanımını teşvik eden eğitim programları, dijital becerilerinin ve bilgilerinin geliştirilmesi yoluyla öğretmenlerin kariyer memnuniyet algılarını artırabilir ve öğretmenlerin öğrencilerine faydalı bir rol model olmalarına yardımcı olabilir.

Giriş

Çevrimiçi teknoloji tabanlı eğitim platformları, öğretmenlerin ve öğrencilerin eğitimlerini sürdürebilmeleri açısından vazgeçilmez bir yapı hâline gelmiştir. Eğitimin ön saflarındaki sağlayıcılar olarak öğretmenler, her düzeydeki eğitimin çevrimiçi sanal öğrenme platformları aracılığıyla geliştirildiği öğretim ve öğrenme ortamlarında giderek daha önemli hâle gelmektedir. Öğretim sürecinin çeşitli boyutlarının birbirine bağlı olduğu dikkate alındığında, sanal öğrenme uygulamalarının kullanımı öğretmenlerin mesleki motivasyonunu önemli bir artıran bir kaynak olarak değerlendirilebilir. Öğretmenlerin dijital yeterligi, eğitim ortamında dijital kaynakları ve sanal öğrenme platformlarını kullanma yeteneğini gösterir. Dijital yeterliğe sahip öğretmenler, gelecekteki çevrimiçi veya sınıf içi uygulamalarda öğrencilerinin ve çalışma arkadaşlarının gözünde birer rol model olacaktır. Aslında günümüzde öğrenciler, dijital yerliler, (Prensky, 2001) hali hazırda teknoloji ile beraber büyüdüklerinden dolayı dijital becerileri genellikle öğretmenlerden bile daha iyi olabiliyor. Uluslararası araştırmalar öğretmenlerin

mesleki gelişimlerini daha yüksek öğretmen yeterliliği ile ilişkilendirmektedir (Coldwell, 2017). Oğretmenin mesleki gelisime olan eğilimi mesleki performansini, öğrencilerinin başarısını, mesleğine olan bağlılığını ve kariyer ilerlemesini olumlu etkileyen bir davranıştır. (Tantawy, 2020). Öğretmenlerin mesleki memnuniyetinin artırılması, eğitim sürecinin niteliğinin sürdürülebilirliği açısından kritik bir öneme sahiptir.

Bu araştırma, hizmet içi öğretmenlerin dijital öğretim yeterliklerine ilişkin öz algıları ile kariyer memnuniyetleri arasındaki ilişkiyi incelemeyi amaçlamaktadır. Bu amaçla aşağıdaki sorulara yanıt aranmıştır:

(1) Öğretmenlerin dijital yeterlik ve kariyer memnuniyet düzeyi nedir?

(2) Öğretmenlerin dijital yeterlik algı düzeyi cinsiyet, kıdem, ünvan ve eğitim durumu değişkenlerine göre farklılaşmakta mıdır?

(3) Öğretmenlerin kariyer memnuniyeti algıları cinsiyet, kıdem, ünvan ve eğitim durumu değişkenlerine göre farklılık göstermekte midir?

(4) Öğretmenlerin dijital yeterlik algı düzeyi ile kariyer memnuniyeti arasında anlamlı bir ilişki var mıdır?

Yöntem

Araştırma ilişkisel tarama modelinde nicel bir çalışmadır. Araştırma verileri kişisel bilgi formu, eğitimcilere yönelik dijital yeterlik ölçeği ve kariyer memnuniyeti ölçeği kullanılarak eş zamanlı olarak toplanmıştır. Araştırma 2022-2023 eğitim-öğretim yılı güz döneminde gerçekleştirilmiştir. Araştırma verileri Google Formlar aracılığıyla elektronik olarak toplanmıştır. Araştırmaya Ankara, Türkiye'de Milli Eğitim Bakanlığı'na bağlı devlet okullarında görev yapan 208 gönüllü öğretmen katılmıştır. Araştırmada öğretmenlerin dijital yeterlik düzeyini tespit etmek amacıyla özgün hâli Redecker (2017) tarafından oluşturulan ve Toker, Akgün, Cömert ve Sultan (2021) tarafından Türkçeye uyarlanan Eğitimciler için Dijital Yeterlilik Ölçeği (EDYÖ) ile öğretmenlerin kariyer memnuniyet algılarını tespit etmek için Greenhaus, Parasuraman ve Wormley (1990) tarafından geliştirilen Avcı ve Turunç (2012) tarafından Türkçeye uyarlaması yapılan Kariyer Memnuniyeti Ölçeği (KMÖ) kullanılmıştır.

Bulgular

Bu çalışmada öğretmenlerin dijital yeterlik algılama düzeyi ile kariyer memnuniyetleri arasındaki ilişki bazı değişkenlere göre incelenmiştir. Nicel bulgular, öğretmenlerin dijital yeterlilik puan ortalamasının ($\bar{X}$ = 44.3) 3. düzey olarak sınıflandırılan "bütünleştirici" (34–49 puan) grubunda olduğunu göstermektedir. Öğretmenlerin kariyer memnuniyet ölçeği puan ortalaması ise 3.04 olup orta seviyededir.

Bu çalışmada öğretmenlerin dijital yeterlik algılarının cinsiyet, ünvan ve kıdem değişkenine göre anlamlı şekilde değişmediği sonucuna ulaşılmıştır. Öğretmenler arasında dijital yeterlik algı düzeyinde sadece öğrenim değişkenine göre lisans mezunu ve lisansüstü eğitim gören öğretmenler arasında anlamlı farklılık görülmüştür. Araştırmanın dikkat çekici sonuçlarından birisi öğretmenlerin kariyer memnuniyet algı düzeyinde sadece kıdem değişkenine göre anlamlı farklılık bulunmasıdır. Kariyer memnuniyet puan ortalaması en yüksek grup ise 10-15

yıl arası kıdeme sahip olan öğretmenlerdir. Korelasyon analizi sonuçlarına göre öğretmenlerin dijital yeterlik algılama düzeyi ile kariyer memnuniyetleri arasında düşük düzeyde pozitif bir ilişki bulunmuştur.

Tartışma

Öğretmenlerin dijital yeterlik düzeyini ve kariyer memnuniyetlerini inceleyen bu çalışmanın sonuçları, öğretmenlerin hem dijital yeterlik ($\bar{X}$ = 3,22) hem de kariyer memnuniyeti ($\bar{X}$ = 3,04) açısından orta düzeyde olduğunu ortaya koymuştur. Dijital yeterlik analizi sonuçları, öğretmenlerin en büyük oranının (%36,1) Entegratör B1 seviyesinde olduğunu, yani dijital teknolojileri öğretim uygulamalarına entegre etme ve farklı bağlamlarda deneme konusunda yetkin olduklarını göstermiştir. Ayrıca, %26,4'ü Uzman B2 ve %22,6'sı Kaşif A2 olarak sınıflandırılmıştır. Bu sonuçlar, öğretmenlerin önemli bir kısmının dijital yeterliliğe sahip olduğunu, ancak bu becerileri daha da geliştirmek için sürekli mesleki gelişimin önemine dikkat çekmektedir. Bu doğrultuda, Kaşif A2 seviyesindeki öğretmenlerin, akran rehberliği ve iş birliği yoluyla desteklenebilecek rehberliğe, teşvike ve ilhama ihtiyaçları olduğu söylenebilir. Nitekim dijital yetkinliği daha üst düzey öğretmenler, özellikle Uzman B2, okullarda inovasyon için katalizör görevi görebilir ve dijital dönüşümü desteklemesi bu açıdan faydalı olacaktır.

Araştırmaya katılan öğretmenlerin algılarına göre Dijital yeterliğin alt alanları arasında *Dijital Kaynaklar* alanı en yüksek ortalamayı göstermiştir. Bu alandaki öğretmenler, dijital sınavlar, e-portföyler ve eğitsel oyunlar dahil olmak üzere değerlendirme, geri bildirim ve planlama için dijital araçları kullanma becerisini göstermektedir. Bu yeterlikler hem okulun altyapısından hem de öğretmenlerin kişisel yeterliklerinden ve teknolojiye erişiminden etkilenmektedir. Bu durumun aksine, en düşük puanlar, bilgi okuryazarlığı, dijital iletişim, içerik oluşturma ve sorumlu teknoloji kullanımını kapsayan *Öğrencilerin Dijital Yeterliliğini Kolaylaştırma* alanında bulunmuştur. Özellikle kapsayıcı ortamlarda, farklı ihtiyaçları olan öğrencileri destekleyen öğretmenler, bu becerileri güçlendirmek için hedefli eğitim ve kaynaklar almalıdır (Skantz-Åberg vd., 2022). T-testleri ve ANOVA analizleri, dijital yeterlikte cinsiyet, unvan veya hizmet yılına göre anlamlı bir fark ortaya koymamıştır. Ancak, eğitim düzeyine göre anlamlı bir fark ortaya çıkmıştır: Lisansüstü dereceye sahip öğretmenler, lisans derecesine sahip olanlara göre daha yüksek dijital yeterliliğe sahiptir ($p < .05$). Bu bulgu, yüksek öğrenimin daha fazla teknolojik yeterlik sağladığını gösteren bazı çalışmalarla tutarlıdır (García-Vandewalle García vd., 2023). Ancak yine de bu sonuç neticesinde formal eğitimin yeterli olduğunu söylemek doğru olmayabilir; öğretmenlerin ayrıca teknolojik, pedagojik ve içerik bilgisi (TPACK) geliştirmeleri gerekmektedir (Mishra ve Koehler, 2006).

Öğretmenler orta düzeyde kariyer memnuniyeti bildirmişlerdir ($\bar{X}$ = 3,04). Cinsiyet, unvan veya eğitim düzeyine göre anlamlı bir fark bulunamamıştır. Sadece kıdeme göre kariyer memnuniyeti algısı değişmektedir: 10-15 yıllık deneyime sahip öğretmenler en memnun olanlardır ($\bar{X}$ = 3,22), 26+ yıllık deneyime sahip olanlar ise en düşük memnuniyeti bildirmektedir ($\bar{X}$ = 2,71). Deneyimle birlikte görülen bu düşüş tükenmişlikle (Maslach ve Leiter, 2016) ve yetersiz ücret veya takdir gibi dışsal memnuniyetsizlikle (Herzberg, 1966; Akiri ve Ugborugbo, 2009) ilişkili olabilir. Diğer taraftan memnuniyetin kıdemli öğretmenler arasında sabitlenebileceğini veya artabileceğini belirten çalışmalar mevcuttur (Ingersoll, 2001). Çalışmanın son aşamasında dijital yeterlik ve kariyer memnuniyeti arasında düşük pozitif bir korelasyon bulunmuştur. Buradan hareketle kendilerini dijital olarak daha yetkin olarak

algılayan öğretmenlerin kariyerlerinden de memnun olduklarını göstermektedir. Bu ilişki mütevazı olsa da, dijital güçlendirmenin mesleki refaha katkısını vurgulamaktadır. Kariyer memnuniyeti, okul kültürü, yönetici desteği ve gelişim fırsatları gibi birtakım faktörlerden etkilenmektedir (Chapman ve Lowther, 1982). İçsel motivasyon, öğretmenlerin sürekli öğrenmeye ve teknolojik yeniliğe olan bağlılıklarını sürdürmede özellikle güçlü bir rol oynamaktadır (Drage, 2010). Mesleki gelişimi artırmak ve öğretmenlerin katkılarını takdir etmek hem memnuniyeti hem de katılımı artırabilir (Derven, 2015; Fwu ve Wang, 2002).

Sonuç ve Öneriler

Araştırmada çalışma grubunda yer alan öğretmenlerin görüşlerine göre elde edilen bulgular öğretmenlerin dijital yeterlik düzeyi ile kariyer memnuniyet düzeyi arasında düşük düzeyde pozitif ilişki olduğu görülmüştür. Bu doğrultuda öğretmenlerin kariyer memnuniyetleri ile dijital yeterlik düzeyi algıları arasında bir ilişki mevcuttur ancak aralarındaki ilişkiye etki eden bireysel, örgütsel veya yönetsel kaynaklı olabilir. Elde edilen bulgular neticesinde akademik gelişim öğretmenlerin dijital yeterlik algısı üzerinde olumlu katkı yapmaktadır. Akademik çalışma yapabilmek için asgari düzeyde bilgisayar ve teknoloji kullanımı gerekmektedir. Araştırmanın çalışma grubunda yüksek lisans ve doktora eğitimi alan az sayıda öğretmen olmasına rağmen öğretmenlerin aldıkları eğitim arttıkça dijital yeterlik puanları artmaktadır. Öte yandan öğretmenlerin kıdemleri arttıkça kariyer memnuniyet düzeyi düşmektedir. Bu bulgu, öğretmenlerin mesleki kıdemleri arttıkça hak ettikleri takdiri göremediklerine yönelik algılarının güçlendiğini göstermektedir.