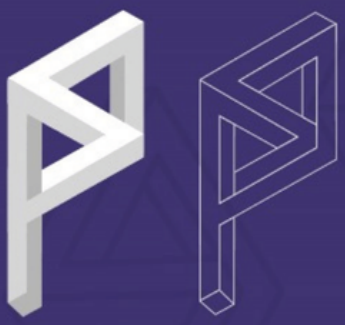

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18. Physics Education
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22. Modern Languages Education/Teaching (Arabic, English, French, German and etc.)
23. Special Education (and its sub-fields)
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The effect of creative drama courses taken by teacher candidates on critical thinking standards

Belgin BAL İNCEBACAK[1*]

[1]Department of Primary School, Education Faculty, Ondokuz Mayis University, Samsun, Türkiye.

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Abstract

Critical thinking is a way of thinking that allows all aspects of life to be effectively used. These stages, which continue from collecting to organizing information, express the steps of thinking skills that take their place in the field literature as critical thinking. Education and training activities are the biggest factors in the acquisition of critical thinking skills at the information society stage. Critical thinking is a way of thinking that allows all aspects of life to be effectively used. It is known that at the beginning of the creative drama course, all life skills are used. This study aimed to determine the changes in the critical thinking standards of candidate teachers after creative drama courses. The study used an experimental model with a pre-test post-test single-group experimental model as the descriptive research method. The study was carried out during the 14-week course period in the fall and spring semesters of the 2021-2022 and 2022-2023 academic years, and the study was carried out with the students enrolled in the course. "Critical Thinking Standards Scale for Teacher Candidates" developed by Aybek, Aslan, Dinçer & Coşkun Arısoy (2015) was used as a data collection tool. Analysis of the collected data revealed that creative drama course students positively affected their critical thinking skills.

1 Introduction

The main purpose of education is to enable individuals to use the knowledge they have acquired to solve the problems they encounter in their daily lives. In the new global world, access to information is facilitated by advanced technology. It is important to be able to utilize the existing knowledge to solve complex problems. Therefore, educational programs propose the development of skills, such as critical thinking, creative thinking, problem-solving, effective communication, decision-making, risk-taking, entrepreneurship, computer literacy, and flexibility. The P21 Framework for 21st-Century Learning, developed with input from educators, education experts, and business leaders, aims to define and illustrate the skills, knowledge, expertise, and support systems that students need to succeed in work, life, and citizenship (Europass Teacher Academy, 2023; The Partnership for 21st Century Skills, 2023). These skills include creativity, innovation, critical thinking, problem-solving, communication, collaboration, information literacy, media literacy, ICT (information, communications, and technology) literacy, flexibility, and adaptability, initiative, and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility. In Turkey, the teaching of critical thinking skills has

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*Correspondency: belginbal33@gmail.com

been incorporated into educational programs since 2004 (Ministry of National Education [MoNE] 2005a, 2005b, 2009).

It is crucial for university students to use critical thinking skills when discussing open-ended, complex, and multidimensional topics. Determining whether students show positive improvements in their critical thinking skills through the use of the creative drama method is important for the development of these skills. Thus, establishing a connection between the Ministry of National Education curriculum and teacher candidates is vital to enhance 21st-century teaching skills. This is because it contributes to identifying whether individuals in future societies will engage in critical thinking. In particular, conducting a study on the level of critical thinking skills among candidate teachers in educational facilities and the factors affecting these skills are deemed significant in terms of reaching the goals of educational programs and determining the status of individuals who will contribute to shaping future generations.

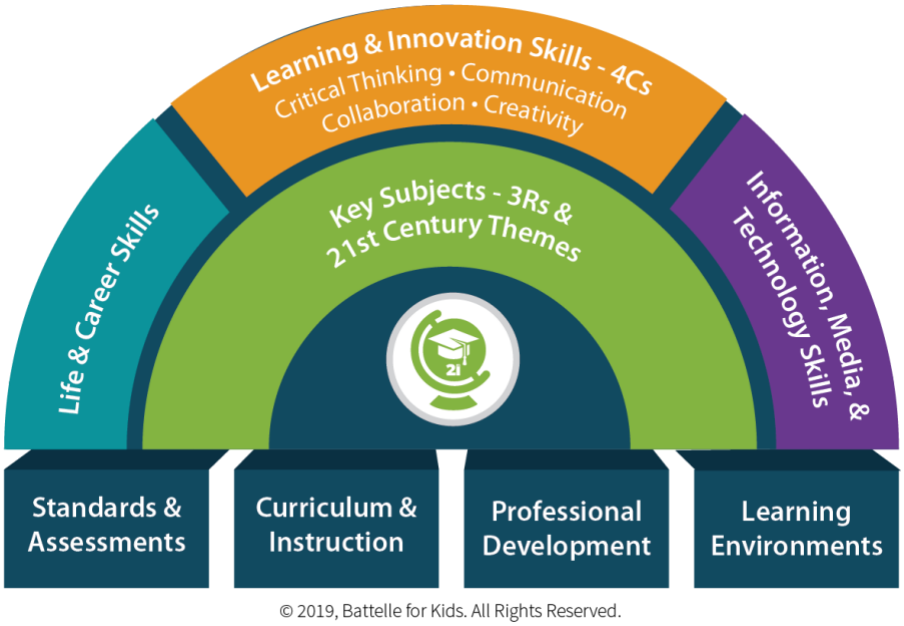

Figure 1 Level of critical thinking skills

At the core of a knowledge-based society, individuals are information-literate. Information literacy requires individuals to gather, evaluate, organize, and critically assess information from various sources (Başaran 2005; Erdem & Akkoyunlu 2002). Indeed, critical thinking skills have been included among the desired abilities to be acquired by students in Turkey's curriculum since the 2004-2005 academic year (Ministry of National Education [MEB] 2005a, 2005b, 2009). Researchers have provided various definitions for critical thinking. Paul and Elder (2007) defined critical thinking as the art of analyzing and evaluating thinking to improve it, while Çelikkaya (2012) defined it as a process that requires the use of higher-order cognitive skills, such as analysis, synthesis, and evaluation, when assessing the accuracy of a situation. As evident from the aforementioned definitions, critical thinking is a mode of thinking that enables the effective utilization of all aspects of life (Kökdemir, 2003). Individuals with critical thinking skills are expected to approach problems from multiple perspectives, reach solutions more easily, and support their claims and proposals using evidence. Therefore, it is crucial to instill critical thinking skills in students at all levels of education, from primary school to university (Şahinel, 2007). However, certain standards are necessary for acquiring these skills. Determining the critical

thinking skills and standards of teachers who play the most effective role in imparting critical thinking skills to students before they commence their duties could contribute to literature. Considering that teacher candidates will educate future generations, it is essential for them to possess critical thinking skills in order to be able to instill this higher-order thinking skill in students. This study aimed to determine changes in critical thinking standards among candidate teachers after a creative drama course.

This study, titled "The Impact of Creative Drama Course on Pre-Service Teachers' Critical Thinking Standards," aims to examine the influence of creative drama courses on pre-service teachers' critical thinking skills. Critical thinking is crucial for teachers to guide their students effectively, support their problem-solving skills, and enable them to view alternative perspectives. Therefore, developing pre-service teachers' critical thinking skills is of great importance to their professional development. Creative drama courses provide a conducive environment for pre-service teachers to enhance their emotional, social and cognitive development. This study aimed to explore the impact of a creative drama course on pre-service teachers' critical thinking skills, and how it can contribute to their development in this area. The significance of this study lies in highlighting the pedagogical value of creative dramas. The findings support the inclusion of the creative drama course in teacher education programs and emphasize its impact. The incorporation of critical thinking in the realm of creative drama plays a significant role in the educational landscape. The choice of critical thinking as a focal point of this study stems from its paramount importance in equipping students, especially candidate teachers, with the necessary cognitive tools to navigate the complexities of our rapidly changing world. Critical thinking enables individuals to analyze, evaluate, and synthesize information; foster their ability to make well-informed decisions; and construct innovative solutions. By harnessing the power of creative drama as an educational method, this study aimed to investigate how the immersive and interactive nature of creative drama can enhance critical thinking skills among university students. Understanding this relationship is crucial, as it not only contributes to the advancement of teaching strategies, but also empowers future educators with the capacity to nurture critical thinking in their students, thereby cultivating a generation of agile and analytical thinkers.

Furthermore, the results of this study can be combined with those of other teaching methods and strategies to strengthen pre-service teachers' critical thinking skills. The importance of this research lies in providing evidence-based insights to enhance pre-service teachers' critical thinking skills and emphasizing the pedagogical value of the creative drama course. This study aimed to provide valuable information on teacher education and pedagogical practice. Can the results of this study focus on the use of creative drama and integrate it with other teaching methods and strategies to effectively enhance preservice teachers' critical thinking skills, thus contributing to the pedagogical value of creative drama courses in teacher education?

2 Method

The study used an experimental model with a pre-test post-test single-group experimental model as the descriptive research method This research method aimed to investigate the impact of creative drama courses on candidate teachers' critical thinking standards. The study was conducted during the 14-week course period in the fall and spring semesters of the 2021-2022 and 2022-2023 academic years.

2.1 Design

Pre-test: Before the intervention, a pre-test was conducted to measure participants' critical thinking standards. A standardized scale assessing critical thinking skills was administered as a pretest.

Creative Drama courses: Participants attended creative drama courses for a designated period. The courses incorporated various drama techniques to enhance participants' critical thinking skills. The courses were structured and conducted in an interactive environment that encouraged students' engagement.

The 14-week course planning was carried out in accordance with the following headings.

Week 1: Introduction and characteristics of a critical thinking individual

Week 2: Logical thinking exercises and role playing

Week 3: Improvisation activity supporting and refuting arguments

Week 4: Improvisation and role play to evaluate the accuracy and effectiveness of arguments

Week 5: Social media influence and dealing with fake news and misinformation

Week 6: Problem Solving and Creative Thinking and different approaches to events

Week 7: Ethical rules and society

Week 8: Midterm Week (Writing a play based on critical thinking)

Week 9: Cultural Awareness and Perspective

Week 10: Critical Thinking and creating a creative drama plan

Week 11: Critical Thinking and creating a creative drama plan

Week 12: Workshop presentations to develop critical thinking

Week 13: Workshop presentations to develop critical thinking

Week 14: Final Week (Creating a creative drama plan to develop critical thinking)

Post-test: Following the completion of the creative drama courses, a post-test was administered to measure participants' critical thinking standards. The same standardized scale used in the pretest was used in the posttest.

2.2 Participants and procedure

Table 1 Demographic characteristics of the participating students

Variable	Category	f
Grade level	1st class	38
	2nd class	31
	3rd grade	48
Sex	Female	91
	Male	26
Department of education	Department of Basic Education	2
	Department of Mathematics and Science	31
	Department of Turkish and Social Sciences	18
	Department of Fine Arts Education	20

	Department of Educational Sciences	18
	Department of Foreign Language Education	17
	Department of Computer Education and Instructional Technology	7
	Department of Special Education	4

In terms of grade level, the distribution of the sample was as follows: 1st grade comprised 38%; 2nd grade comprised 31%, 3rd grade comprised 46%; and grade 5 and above, 2%. This distribution indicated that the study included students of various grades. Regarding sex, the distribution is as follows: 91% of the students are female, while 26% are male. This distribution showed that most of the sample consisted of female students. The distribution of students from different departments was as follows: Department of Education, 2%; Department of Mathematics and Science, 31%; Department of Turkish and Social Sciences, 18%; Department of Fine Arts Education, 20%; Department of Educational Sciences, 18%; Department of Foreign Language Education, 17%; Department of Computer Education and Instructional Technology, 7%; and Department of Special Education, 4%.

Demographic Information Form: The demographic information form consisted of questions related to sex, academic department, and grade level, tailored to align with the purpose of the study, rather than collecting personal information about the students.

Critical Thinking Standards Scale: The Critical Thinking Standards Scale (CTSS) developed by Aybek, Aslan, Dinçer & Coşkun-Arısoy (2015) was utilized in the research. During the scale's development, the researchers conducted exploratory factor analysis. Exploratory factor analysis revealed that the scale consists of three factors and 42 items. The sub-dimension of depth-breadth-competence consisted of 18 items, the sub-dimension of accuracy-truth consisted of 12 items, and the sub-dimension of importance-relevance-clarity consisted of 12 items. The factor loadings of the scale items range between .35 and .78. The item correlations vary between .07 and .71. These three dimensions explained 35.96% of the total variance. The Cronbach's Alpha coefficient for the depth-breadth-competence sub-dimension is .89, for the accuracy-truth sub-dimension is .78, for the importance-relevance-clarity sub-dimension is .63, and the overall Cronbach's Alpha coefficient is .75 (Aybek, Aslan, Dinçer & Coşkun-Arısoy, 2015). The minimum score obtained on the scale was 42, whereas the maximum score was 210. The scale contained 12 negatively worded statements that were reverse-coded during the calculation. The scale was organized using a 5-point Likert format. Confirmatory factor analysis was conducted to validate the three dimensions of the scale. Cronbach's alpha for this study was 0.85.

2.4 Data analysis

In this section, the findings obtained from the data were evaluated in terms of validity and reliability, and impact analyses were conducted on the results, followed by discussion based on these analyses. The effect size is a statistical measure that indicates the extent to which the results of the sample deviate from the expectations stated in the null hypothesis (Cohen, 1994). The collected data were subjected to statistical analysis. The differences between the pre- and post-test scores were examined, and the significance of these differences was evaluated using appropriate statistical methods. Statistical tests were performed, and p-values were calculated to analyze the data.

The most commonly used calculation for effect size was developed by Cohen (d); however, other calculations, such as Hedge's d and Glass's Δ, can also be found in literature (Yıldırım & Yıldırım, 2011). As a general recommendation, Cohen suggests that an effect size (d) less than 0.2 can be considered weak, 0.5 can be considered moderate, and greater than 0.8 can be considered strong. However, it should be noted that even a d value of 0.2 can be considered a strong effect in certain special cases (Cohen, 1988; cited in Kılıç, 2014). The data obtained during the study were analyzed using a statistical program in a computer environment. A significance level of .05 was used for all analyses. In this study, a normality test was conducted on the critical thinking standard scale attainment scores of the participants. The following results were obtained from the analyses.

Table 2 Normality test results for critical thinking standards scale attainment scores of the study group.

Variable		Kolmogorov-Smirnov	Shapiro-Wilk
Sex	Male	,200	,223
	Female	,200	,815
Department of education	Mathematics and science education	,155	,061
	Turkish and social sciences education	,200	,915
	Fine arts education	,200	,591
	Educational sciences	,114	,137
	Foreign language education	,200	,622
	Special education	,195	,311
	Computer and instructional technologies education	,000	,874
Grade level	2nd grade	,200	,806
	3rd grade	,105	,096
	4th grade	,200	,761

When examining the data in Table 2, the attainment scores of the students in the study group for critical thinking standards did not follow a normal distribution. Parametric tests were used when the p-value was < 0.05. Parametric tests are suitable for situations in which the data follow a specific distribution, and certain assumptions are met. If the p-value is greater than 0.05, or if specific assumptions are not met, non-parametric tests may be more appropriate. Nonparametric tests were used when the data did not follow a specific distribution or when the assumptions were not met. Additionally, the critical thinking attainment scores of students in the study group were not normally distributed for all variables. To determine whether there was a significant difference between the pre- and post-test scores of the study group in terms of critical thinking standards, a Wilcoxon Signed-Rank test based on the normality test was conducted. The Mann-Whitney U test was performed to investigate whether there were significant differences in the attainment scores for critical thinking skills based on sex. The Kruskal-Wallis test was conducted to determine whether there were significant differences in students' attainment scores based on department- and grade-level variables.

2.5 Validity, reliability, and ethical considerations

This study employed a research design with a pre-test and post-test single group, using a descriptive research method. To ensure the accuracy and reliability of the data obtained in this study, several steps were taken to ensure validity. First, valid and reliable measurement tools were selected to measure the variables accurately and appropriately. A critical thinking scale with established validity and reliability measures was used to assess the critical thinking standards. Additionally, standardized guidelines were followed during the data collection process, and clear and comprehensible questions were used to prevent participant misunderstandings. These

measures increased the validity of the data and ensured accurate results. Reliability measures were implemented to ensure data reliability. Internal consistency measurements were conducted using data-collection tools. This method evaluates consistency between different items using the same measurement tool. Through internal consistency analyses, high coefficients were obtained for the critical thinking scale, enhancing the scale's reliability and ensuring the reliability of the results. Ethical considerations are of utmost importance in this study. Measures were taken to respect individual rights and well-being throughout the research. Participation in the study was voluntary, and informed consent was obtained from participating teacher candidates. Participant confidentiality and privacy were protected, and data were stored securely and accessible only to the researchers. Furthermore, potential harm or discomfort to participants was prevented. Adherence to ethical guidelines enhanced the reliability and value of this study.

3 Findings

The first aim of this study was to investigate whether there was a significant difference between the pre- and post-test scores of students in the study group in terms of the impact of creative drama courses on critical thinking standards. The results of the Wilcoxon Signed-Rank test conducted for this purpose are presented in Table 3.

Table 3 Results of the Wilcoxon Signed-Rank test for the pre-test and post-test scores of the study group on the critical thinking standards scale.

Pre-test - Post-test	N	Mean Rank	Sum of Ranks	Z	p
Negative Ranks	50	55,86	2793,0	-1,513	0,130
Positive Ranks	65	59,65	3877,0		
Tied Ranks	2				

p<.05

When examining the data in Table 3, it is evident that there was no significant difference in the scores obtained by students on the critical thinking skills scale before and after the implementation of the online creative drama method ($p < .05$). Considering the mean ranks and sum of the ranks of the difference scores, it can be observed that this difference favors positive ranks, which correspond to the post-test scores. Therefore, the instruction of the courses using the creative drama method led to a significant difference in students' critical thinking skills in the study group.

Furthermore, the research also investigated whether the critical thinking proficiency scores of the students in the study group obtained during the course instruction process using the creative drama method differed significantly based on certain variables. To determine whether there was a significant difference in critical thinking skills based on sex, the Mann-Whitney U test was conducted. Table 4 presents the results of this analysis.

Table 4 Mann Whitney-U test results for critical thinking skills by sex

Group	N	Mean Rank	Sum of Ranks	t/U	p
Female	91	59,92	5452,50	1099,5	0,584
Male	26	55,79	1450,50		

Upon examining the data in Table 4, it was determined that there were no significant differences in critical thinking skills by gender. Although the mean ranks indicated that female students showed greater improvement in critical thinking skills than did male students, this difference was not statistically significant. To determine whether critical thinking skills differed significantly across departments, a Kruskal-Wallis test was conducted. Table 5 presents the results of the analysis.

Table 5 Kruskal-Wallis test results for critical thinking skills by department

Group	N	Mean Rank	SD	Chi-square	p
Basic education	2	79,75	7	7,465	0,382
Mathematics and science	31	56,47			
Turkish and social sciences	18	67,08			
Fine arts	20	61,83			
Educational sciences	18	47,94			
Foreign languages	17	69,29			
Special education	7	41,79			
Computer and instructional technologies	4	53,88			

Upon examining the data in Table 4, it was determined that critical thinking skills did not differ significantly based on the department variables ($p > 0.05$). Looking at the mean ranks, it can be observed that students in the Basic Education department demonstrated higher levels of critical thinking skills compared to students in the Special Education department. To determine whether critical thinking skills varied significantly based on grade level, a "Kruskal-Wallis" test was conducted. Table 6 presents the results of the analysis.

Table 6 Results of Kruskal-Wallis test for critical thinking skills by grade level

Group	N	Mean Rank	SD	Chi-square	p
2nd grade	38	62,78	3	1,867	0,601
3rd grade	31	52,15			
4th grade	46	60,64			

According to the data in Table 6, it can be observed that critical thinking skills did not significantly differ based on the grade level variable ($p > 0.05$). Looking at the mean ranks, the greatest improvement in critical thinking skills was observed among students in the 2nd grade who received instruction through the creative drama method.

4 Discussion

This study aimed to determine changes in pre-service teachers' critical thinking standards after a creative drama course. The experiment was conducted over a period of 14 weeks. The study's main finding was that the creative drama method positively affected pre-service teachers' critical thinking skills. According to the data presented in Table 2, a significant difference was found between the scores of students who used the online creative drama method before and after instruction in terms of critical thinking standards. This indicates that the creative drama method is an effective strategy to develop students' critical thinking skills. At the end of the study, students from different departments showed a significant difference in the scores obtained from the pre- and post-instruction measurements of critical thinking standards using the online creative drama method. The department of elementary education had the highest score, followed by foreign languages, Turkish, and the social sciences. When the literature was examined, it was found that

pre-service teachers' tendencies towards critical thinking were low (Alkın-Şahin, Tunca, & Ulubey, 2014; Çiçek-Sağlam & Büyükuysal, 2013; Erdoğan, 2012; Güneş, 2012; Güven & Kürüm, 2007; Güven & Kürüm, 2008; Şen, 2009; Alper, 2010) and moderate (Dutoğlu & Tuncel, 2008; Türnüklü & Yeşildere, 2005), meaning that they were not at the desired level.

Additionally, in some studies, it was found to be both moderate and low depending on the department (Beşoluk & Önder, 2010; Yakar et al., 2010). This implies that the education provided is insufficient. Arcidiacono et al. (2010) stated that higher education is not just a place for obtaining a diploma, but also a place where students contribute to their knowledge, skills, and critical thinking ability. Critical thinking skills are crucial because they lead to academic success, career advancement, and development of individuals who contribute to society (Aikin & Talisse, 2014; Dwyer, 2017). This raises the question of whether the education provided in higher education institutions currently develops critical thinking skills. Huber and Kuncel (2016) emphasized the need for activities that enhance students' critical thinking skills in higher education institutions. Tsui (2002) also noted that given the strong relationship between critical thinking and instructional factors, there is great responsibility at the higher education level. Having a low or moderate level of critical thinking skills in higher education presents a problem that needs to be addressed in the future society. It has been determined that pre-service teachers in universities in the Eastern Anatolia region of Turkey have a moderate level of critical thinking tendency (Semerci, 2010), and the situation is similar in the Black Sea region, where students have a moderate level of critical thinking skills. It was observed that applied drama education contributed to students' critical thinking levels by showing significant differences in their levels.

This study examined whether there was a significant difference in critical thinking skills based on gender, and it was determined that there was no significant difference. When examining the mean scores, it was observed that female students showed greater improvement in their critical thinking skills than male students, but this difference was not statistically significant. Similar findings have been observed in studies conducted on both male and female students (Yeh, 1997; Gelen, 2002; Yaman & Yakın, 2004; Özdemir, 2005; Şen, 2009; Korkmaz, 2009; Semerci, 2010; Özdelikara, Bingöl, & Görgen, 2012; Kanbay et al., 2012). This situation may be attributed to male and female students receiving education in education faculties without any discrimination or bias.

The study found no significant difference in critical thinking skills based on departmental variables. There were no significant differences in critical thinking standards among students from different departments. When looked at the mean scores, the departments were ranked as follows: Elementary Education, Foreign Languages, Turkish and Social Sciences, Fine Arts, Mathematics and Science, Computer and Instructional Technologies, Educational Sciences, and Special Education. The critical thinking skills of classroom teachers were higher than those of teachers in other departments, while other departments had moderate levels. In Semerci's (2010) study, Turkish Language Teaching, Science Teaching, Social Studies Teaching, and Classroom Teaching departments were ranked from highest to lowest. Similarly, Korkmaz (2009) found that classroom teachers' scores were low. An interesting finding relates to the Classroom Teaching department. In one study, it had the lowest level, whereas in another, it had the highest level. This could be due to the inclusion of critical thinking skills in the Ministry of Education's curriculum (2013, 2018), which led higher education institutions to update their programs and provide education that focuses on these skills. Classrooms teaching students may have taken courses that enhanced their critical thinking skills, leading to this result. Alkın-Şahin et al. (2014) stated that the lack of differences among departments could be attributed to the "content" dimension of the educational

programs of departments consisting entirely of the social sciences, which serve critical thinking. Similarly, it has been mentioned that teacher candidates' critical thinking abilities are related to department content (Kürüm, 2002) and readiness (Güven & Kürüm, 2007; Zayıf, 2008; Tural & Seçgin, 2012). Alkın also mentioned that the assessment tools used in the evaluation processes of disciplines have an impact on the process; therefore, there are differences between departments. Some studies indicate no differentiation in critical thinking among departments (Hayran 2000; Gülveren 2007; Ekinci 2009). It was observed that there was no significant difference in critical thinking skills based on the grade level. However, it has been observed that students at the 2nd-grade level show improvement in critical thinking skills through the use of creative drama courses, although this difference was not statistically significant. This study demonstrates the positive impact of using creative dramas in the teaching process on critical thinking skills. Creative drama promotes active student participation, encourages original thinking, and enhances problem-solving skills. Therefore, this study's findings suggest that the use of creative dramas contributes to the development of critical thinking skills. The higher scores of students in their critical thinking levels in this study compared to many other studies in the literature may be attributed to the effective planning of the teaching process, which plays a significant role in enhancing their critical thinking skills. This is because the course plans were designed to create various situations in which students could use their critical-thinking skills. Therefore, the teaching methods and process used in the study are considered as important factors to be taken into account in explaining the results.

4.1 Limitations, and future directions

The small sample size used in this study may have restricted the generalizability of the results. Future studies could benefit from larger and more diverse sample groups to replicate this study. Additionally, evaluation of students from different regions using a similar process is recommended. Future research could compare the impact of the creative drama method on critical thinking skills with that of other educational or instructional methods. This may help determine the effectiveness and preference order of different methods. Follow-up studies should be conducted to assess the sustainability and long-term effects of improvements in students' critical thinking skills.

Improvisation activities and role-playing within creative dramas contribute to critical thinking. Creative drama involves evaluating events and situations from different perspectives and requires quick decision making during the process. When looking at the aspects of questioning and curiosity, creative dramas can also contribute to the emergence of possible situations. This raises a question regarding the relationship between academic achievement and critical thinking. This finding contradicts some studies that suggest an increase in critical thinking skills and academic achievement (Özdelikara, Bingöl, & Görgen, 2012; Ricketts & Rudd, 2005; McDonough, 1997) and aligns with other studies that do not find a connection between academic achievement and critical thinking (Giancarlo & Facione, 2001; Stupnisky et al., 2008). Therefore, it is recommended that the impact of creative drama on the critical thinking and academic achievement of students taking creative drama courses be investigated.

4.2 Conclusion

This study aims to determine the impact of a creative drama course on pre-service teachers' critical thinking skills. The experimental process followed, and the students were engaged in the course for 14 weeks. The main finding of this study was that the creative drama method had a

positive effect on pre-service teachers' critical thinking skills. According to the data shown in Table 2, a significant difference was found between the pre-and post-instructional critical thinking skills of the students who took an online creative drama course. This indicates that the creative drama method is an effective strategy for developing students' critical thinking skills.

This study found significant differences in the critical thinking skills of students from different departments, before and after online creative drama instruction. When the departments of elementary education, foreign languages, Turkish and social sciences, fine arts, mathematics and science, computer and instructional technologies, educational sciences, and special education were examined, it was observed that the highest scores belonged to the elementary education department, followed by the other departments. These results indicate that different departments may affect critical thinking skills in various ways.

According to previous studies, pre-service teachers generally have low to moderate critical thinking tendencies. This suggests that the education provided may not have been sufficient. Efforts to enhance critical thinking skills in higher education institutions are therefore crucial. No significant differences were found in critical thinking skills based on variables such as gender and department. Although female students showed greater improvements in their critical thinking skills, no statistically significant difference was detected. Similarly, no significant differences were found among students from different departments.

In conclusion, this study demonstrates that the creative drama method has a positive impact on pre-service teachers' critical thinking skills. The creative drama method can be an effective strategy for developing critical thinking skills among pre-service teachers. However, more comprehensive studies with larger sample groups and examinations of different variables are needed. Additionally, it is important to provide pre-service teachers with more education and support to enhance their critical thinking skills.

5 Statement of Researchers

In this section, you are expected to declare the following information regarding the titles:

In this section, you are expected to declare the following information regarding the titles:

5.1 Researchers contribution rate statement

The authors contributed to the study.

5.2 Conflict statement

The authors declare no potential conflicts of interest.

5.3 Support and thanks

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Adaptation of characteristics of successful EFL teachers questionnaire (CoSEFLT-Q) into Turkish

Duhan Nurdan DOĞAN[2*] Duha Nur DOĞAN[3] Şule DOĞAN[4]

[1]PhD Student at the Department of English Language Education, Faculty of Education, Atatürk University, Erzurum, Türkiye.
[2]PhD Student at the Department of English Language Education, Faculty of Education, Atatürk University, Erzurum, Türkiye.
[3]Special Education Teacher, Ministry of National Education, Diyarbakır, Türkiye.

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Abstract

In the study Moafian et al. (2019) it is aimed to adapt the Characteristics of Successful EFL Teachers Questionnaire (CoSEFLT-Q) into Turkish. The questionnaire utilized in this study was the Turkish version, and it was administered to a total of 502 students who were enrolled at Atatürk University during the academic year of 2022-2023. In the adaptation study, The English-to-Turkish translation and evaluation experts' opinion was taken. Exploratory factor analysis (EFA) was used to examine the data. The reliability analysis, the internal consistency and Cronbach alpha value of the scale were studied in this study. The scale's total internal consistency coefficient was discovered to be .995. It can be said that the Turkish version of the CoSEFLT-Q Scale is a reliable measurement tool with acceptable values.

1 Introduction

Many factors affect educational processes in schools. These factors can be related to the physical conditions of the school environment, the program, or working conditions as well as the stakeholders that make up the school environment. Teachers are stakeholders who engage with a wide variety of issues that influence educational processes on a daily basis (Sotto, 2011).

The topic of teaching is a subject of considerable interest and debate among educators and intellectuals. The process of learning is intricately connected to the act of teaching, with both concepts mutually influencing each other (Gholami & Asady, 2014). Teaching is a multifaceted interactional activity that includes subject matter, content, teacher characteristics, learner characteristics, methodology, materials, and learning situations (Bell, 2005). Evidently, education has been assigned to interconnected tasks with distinct dimensions. Educators play a significant role in this process. The individual maintains ongoing engagement with the student responsible

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*Correspondency: duhannurdan@hotmail.com

for executing the curriculum, as well as with the administrator overseeing the instructional process. Furthermore, the individual assumes the role of evaluating both the student's progress and effectiveness of the teaching methods employed (Barnes & Lock, 2013). The crucial role of the instructor in the learning process is asserted. Hence, it is vital to take into account the expectations and requirements of the instructor, who plays a pivotal part in the educational endeavor (Yıldız & Taşgın, 2020).

Research studies conducted in various nations over the last three decades have found that the classroom level has a more important effect in predicting learners' accomplishments than the school level (Porter & Brophy, 1988; Pishghadam et al., 2021; Tamblyn, 2000). Most of the differences in classroom levels are also linked to teachers' actions and behaviors as well as how they plan the lesson (Kyriakides et al., 2013). It also shows that teachers' effectiveness is the most important factor in how well their students do in school, more so than other factors such as gender, classroom size (Sanders, 1999), and students' social status (Wenglinsky, 2000). When teachers consistently teach students, they learn important things. This shows that hiring bad teachers has a long-lasting effect on student growth and the entire school system (Sanders et al., 1997).

First, it is noteworthy that teacher success is a significant factor in the field of education that has garnered considerable attention in both theoretical and empirical studies. Nevertheless, it is important to acknowledge that despite the various theoretical frameworks that have been proposed to explain this notion (e.g., Irajzad et al., 2017; McIntyre et al., 2020; Shin & Koh, 2007; Zhu et al., 2010), a universally accepted definition has yet to be established. According to Shin and Koh (2007), the elusive character of the idea of teacher success may be attributed to the fact that the definition and attainment of quality instruction by teachers can vary across different cultural contexts. Furthermore, it is noteworthy that two significant factors were found to be strongly correlated with teacher success in terms of communication behavior. As identified by Irajzad et al. (2017), these are teacher credibility and teacher-stroke factors. According to McCroskey (1998), teacher credibility refers to the level of trustworthiness viewed by learners towards their teachers, On the other hand, teacher stroke factors encompass the actions taken by teachers to acknowledge and value the worth and involvement of their students, as viewed by the students themselves (Pishghadam & Khajavy, 2014).

Likewise, the quality of any language teaching instruction is strongly based on the instructors' roles in their classes. Educators' conduct, characteristics, and talent are the most essential elements influencing students' willingness to engage effectively in class. Educators' caring, understanding, approachability, and amiability via positive nonverbal behaviors—presenting happy faces and accepting pupils' responses (Siti et al., 2010), being positive and accessible (Dallimore et al., 2004; Fassinger, 1995; 2000)–serve as motivating factors for learners and nurture their effective involvement in the class.

The significance of instructors' characteristics is highlighted in the study by Siti et al. (2010), who discovered that instructors' characteristics have a crucial impact on persuading students to participate in class discussions. Aside from strong teaching attributes, their talent might also have an impact on the classroom atmosphere. Nurzatulshima (2009) focused on three instructors by monitoring their classrooms, conducting learner interviews, and reviewing students' papers to investigate how instructors engage their pupils. Student participation was strong when the instructor provided group effort, maintained rolling and checking on the learners' performance during practical sessions, offered fruitful awards, and prolonged pleasant collaboration. The

variety of educational tactics encourages pupils to be more engaged and encourages their engagement.

Given the importance of educators' roles in the processes of target language teaching and learning (Williams & Burden, 2000), numerous studies have sought to identify particular characteristics of EFL instructors and develop a checklist to evaluate educators' pedagogical achievement in order to assist improvement and development. For example, Brosh (1996) assessed the characteristics of effective language instructors among high school teachers and learners through interviews and a 20-item questionnaire. Language commands and understandable instructions were rated highly by both the students and instructors. Items linked to teaching in the second language and being native-like, on the other hand, were ignored. Moreover, factors concerning motivation, growth, and research are more essential for instructors than for students. Instructors, on the other hand, are more essential to learners than equitable treatment of learners and fascinating instruction (Park & Lee, 2006).

In Korean setting, Park and Lee (2006) tried to investigate the aspects of good language instructors using a self-report questionnaire divided into three parts: English competence, pedagogical knowledge, and socio-affective abilities. The questionnaire was submitted to high school instructors and learners in Korea, and the findings revealed that the teachers' perspectives differed greatly from those of their pupils. Educators, for example, regarded English competence as the most important factor for a successful instructor, but learners regarded pedagogical expertise as the most important element of a good instructor.

In Iran, Shishavan and Sadeghi (2009) investigated the characteristics of successful language teachers among EFL students and teachers. The questionnaires were distributed to 59 English language teachers and 215 English language learners. The results revealed that instructors regarded command of the foreign language, a solid understanding of pedagogy, the application of particular approaches, and a positive character as essential attributes that added to being a successful language educator. Nevertheless, according to the learners, the most significant elements for efficient language education were the instructor's character and behavior toward pupils. Additionally, Khojastehmehr and Takrimi (2009) used a 50-item self-constructed questionnaire to evaluate the aspects of teacher effectiveness among 215 English teachers. The response factor analysis revealed four aspects of teaching efficacy (i.e.: Instructional strategies, communication skills, personal characteristics, and knowledge). The findings of the study revealed that the instructors in question perceived instructional tactics to hold greater significance in determining teacher effectiveness than other characteristics.

Moafian and Pishghadam (2009) developed and validated a 47-item questionnaire containing the characteristics of effective EFL teachers (the Characteristics of Successful EFL Teachers Questionnaire; CoSEFLT-Q). The CoSEFLT-Q was created with the help of EFL academics, instructors, and students as well as Suwandee's (1995) characteristics of good educators. In total, 250 EFL learners were asked to participate in the study to test the construct validity of the CoSEFLT-Q. The study's major emphasis was on English language learners' perceptions of the aspects of good language teachers. In the CoSEFLT-Q, factor analysis revealed 12 components (i.e., teaching accountability, interpersonal relationships, attention to all, examination, commitment, learning boosters, creating a sense of competence, teaching boosters, physical and emotional acceptance, empathy, class attendance, and dynamism). Furthermore, Soodmand Afshar and Doosti (2013) identified effective EFL teaching traits from the views of 32 instructors

and 376 learners using both interview and questionnaire tools. According to the findings, successful language instructors should have professional qualities, including content knowledge, the ability to present information to students, classroom management features including integrating all learners by assigning group/pair work, frequently assessing their improvements, and a decent degree of interpersonal connections.

In the Turkish context, Çakmak and Gürbüz (2018) showed the characteristics of successful language instructors as evaluated by 192 pre-service learners using a 55-item questionnaire and an interview data-gathering instrument. The outcomes of quantitative data analysis revealed that the most critical characteristics of effective teachers were competence, objectivity, and consistency, while the outcomes of qualitative data analysis identified creating a positive learning environment, managing the classroom, and preparing for the lecture as the most crucial traits of effective language teachers. In addition, Chang (2016) investigated the qualities of effective language instructors using 21 Likert-scale items and compared the viewpoints of Taiwanese learners and teachers using both questionnaires and interviews. Learners admired instructors who showed empathy and treated them with regard and civility and treated every learner equitably. Instructors, on the other hand, defined competent language teachers as those who could focus on their practice, make improvements, and have a solid grasp of the foreign language.

Finally, the qualities of a competent EFL instructor considered by 122 EFL students were described by Alzeebaree and Ali Hasan (2020). A questionnaire with 30 items, dependent on Park and Lee's (2006) description of the qualities of EFL instructors, was used to collect data. The questionnaire was divided into three sections: Content knowledge, pedagogical skills, and socio-affective abilities. The data revealed that the highest mean score was for reading English effectively, managing the classroom appropriately, being competent, and having self-control.

To summarize, the results of earlier studies on the qualities of effective teachers of English as a foreign language have been divided into two categories. The fundamental objective of the first type of research was to identify the most advantageous characteristics by contrasting various types of participants (e.g., instructors and learners, female and male students, high-achievement learners, and low-achievement learners). The second type of research focuses on developing and evaluating the construct validity of a survey instrument (Alzeebaree & Ali Hasan, 2020; Çakmak & Gunduz, 2018; Khojastehmehr & Takrimi, 2009; Moafian & Pishghadam, 2009; Park & Lee, 2006; Soodmand Afshar & Doosti, 2013).

The following literature review reveals that only a small amount of time was spent conducting a detailed assessment of the psychometric properties of the tools. There is no Turkish version of the Characteristics of Successful EFL Teachers Questionnaire Scale that can be found in the literature in terms of the methods used to measure psychometric quality. Therefore, the purpose of this research is to translate into Turkish the Characteristics of Successful EFL Teachers Questionnaire (CoSEFLT-Q) Scale that was produced by (2019). An expert opinion was sought regarding the language validity of the Characteristics of Successful EFL Teachers Questionnaire (CoSEFLT-Q), after which a correlation analysis was performed on the relationship between the English and Turkish forms of the scale. The Turkish English version of this scale is in this context. Confirmatory factor analysis (CFA) was conducted to confirm the structural validity of the scale.

2 Method

2.1 Participants

Within the scope of this research, data were gathered from 502 learners studying at Atatürk University for the language reliability of the CoSEFLT-Q. 179, %35.5 male). The distribution of students based on the classes they studied was as follows: 115 prep school students (%23.0), 92 university freshmen (%18.2), 73 university sophomores (%14.6), 125 university third-year students (%25.0), and 97 (%19.4) university fourth-year students.

The purposive sampling method was used for criterion sampling. As a criterion, it was taken into account that all learners were studying at a public university. In this study, attention was paid to ensuring that the sample size was at least five and at most 10 times the number of items on the scale to reach accurate results and make sensitive estimations (MacCallum et al., 1999; Erkuş, 2012).

The number of participants in the first and second applications was more than 10 times the number of items (47 items) on the scale. The demographic information of the participants is presented in Table 1.

Table 1 Sampling demographic characteristics

Demographic Characteristics		First Application (n=502)		Second Application (n=702)	
		n	%	n	%
Gender	Woman	324	64,5	437	62,3
	Male	178	35,5	265	37,7
Class	Preparatory	115	22,9	145	20,7
	1st Class	91	18,1	125	17,8
	2. Class	73	14,5	115	16,4
	3rd Class	126	25,1	176	25,1
	4th Grade	97	19,3	141	20,1
Age	18-24	392	78,1	564	80,3
	25-34	108	20,3	125	17,8
	35-44	8	1,6	13	1,9

2.2 Instrument

The Characteristics of Successful EFL Teachers Questionnaire (CoSEFLT-Q) established by Moafian et al. (2019) was modified. The original scale has seven sub-dimensions, each of which has its own set of items: There are 47 items in all, including teaching responsibility (eight items), attention to everyone (six items), morality (nine items), care and enthusiasm (seven items), evaluation (six items), teaching boosters (eight items), and class attendance (three items). All items were scored on a 5-point Likert scale (1 = “never,” 5 = “always”).

First, permission was obtained from Moafian et al. (2019) for the scale to be adapted to Turkish. Subsequently, the required ethical approval was obtained to perform the research. (Atatürk University Ethics Committee decision dated December 23, 2022, and numbered 23/4).

The scale was originally translated from English to Turkish by three field specialists with English language skills before the Turkish version was established. After translation from English to Turkish by three language experts, the scales were checked by two Turkish experts and two field experts. The scale is offered in one version. The scale was then examined by an evaluation specialist, and a final draft of the scale was constructed. After a positive evaluation was received, the scale was administered to university students via an online platform. It took approximately 10–20 minutes to complete the questionnaire.

2.3 Data Analysis

Because the scale data did not allow unanswered items online, there were no missing data in the dataset. The analysis of the data obtained from the research applications was conducted using SPSS 22. An exploratory factor analysis was performed using the AMOS 22 tool. Spearman's correlation analysis was performed to determine the relationship between the scale and its sub-dimensions. Explanatory factor analysis is a type of analysis that transforms groups into new variables by dividing a large number of variables into a certain number of groups, maximizing the relationship between variables and minimizing the relationship between groups (Watkins, 2018).

The varimax rotation method was used for the factor analysis. The results of the KMO and Bartlett sphericity tests were evaluated. The fact that the KMO value is close to 1 and greater than 0.5 indicates that the sample size is sufficient. The fact that the Bartlett sphericity test was significant ($p<0.05$) indicates that factor analysis can be performed. Factor loadings must be at least 0.5, and there must be at least .10 factor loading between the items loaded on the two factors. It is recommended that the explained variance be 30% in one-dimensional scales and 50% in multidimensional scales for the social sciences (Kaiser, 1974; Suhr, 2006; Sürücü et al., 2021).

The concept validity and reliability of the CoSEFLT-Q were investigated through reliability studies. Cronbach's alpha coefficient was used to determine the reliability of the CoSEFLT-Q and its individual subscales. Pearson correlation coefficients were used to determine inter-scale relationships. The results of the EFA conducted to determine the validity of the CoSEFLT scale are shown in Table 2.

4 Findings

4.1 Findings related to explanatory factor analysis (EFA)

Table 2 EFA analysis results

First Application (n=502)				Second Application (n=702)			
Scale Items	Factor 1	Scale Items	Factor 2	Scale Items	Factor 1	Scale Items	Factor 2
1	,753	30	,730	1	,741	30	,724
2	,746	31	,724	2	,739	31	,732
3	,721	32	,723	3	,689	32	,730
4	,717	33	,822	4	,702	33	,823
5	,710	34	,813	5	,697	34	,791
6	,748	35	,743	6	,725	35	,741
7	,706	36	,790	7	,689	36	,789
8	,691	37	,777	8	,682	37	,778
9	,654	38	,794	9	,648	38	,786
10	,767	39	,771	10	,761	39	,774
11	,797	40	,790	11	,776	40	,794
12	,785	41	,803	12	,764	41	,810
13	,802	42	,787	13	,776	42	,795
14	,769	43	,797	14	,737	43	,802
15	,787	44	,798	15	,764	44	,811
16	,775	45	,800	16	,762	45	,812
17	,773	46	,807	17	,748	46	,815
18	,795	47	,828	18	,798	47	,835
19	,792			19	,810		
20	,757			20	,776		
21	,797			21	,777		
22	,785			22	,761		
23	,778			23	,757		
24	,759			24	,731		

25	720			25	,706		
26	,738			26	,728		
27	,750			27	,740		
28	,755			28	,738		
29	,645			29	,635		
Explained Variance Total	44,76	Explained Variance	39,89	Explained Variance Total	43,54	Explained Variance	41,26
Explained Variance		84,65		Explained Variance		84,80	
KMO Test		,981		KMO Test		,983	
Barlett Test of Sphericity		x^2=49182,47; p<,001		Barlett Test of Sphericity		x^2=69424; p<,001	

As a result of the first application, it is seen that the KMO value is .981 and the Bartlett sphericity test result (χ^2=49182; p<.001) is significant. Based on these results, it was decided that the sample size was sufficient and that EFA could be performed. The scale items explained 84.65% of the total variance. While the first factor explained 44.76% of the total variance, the second factor explained 39.89%. The factor loads of the scale items were above 0.5, which was considered the least factor load. It has been determined that the CoSEFLT scale has 47 items and a two-factor structure.

Moafian and Pishghadam (2009) found that the original Persian version of the scale had 12 factors. However, Moafian et al. (2019) determined that the scale had a 7-factor structure in English. Due to these differences in the international literature, to determine the accuracy of the 2-factor structure in the Turkish version, the scale was reapplied to a different sample group and their mutual consistency was checked.

As a result of the second application, it is seen that the KMO value is .983 and the Bartlett sphericity test result (χ^2=69424; p<.001) is significant. Based on these results, it was decided that the sample size was sufficient and that EFA could be performed. The scale items explained 84.80% of the total variance. While the first factor explained 43.54% of the total variance, the second factor explained 41.26%. The factor loads of the scale items were above 0.5, which was considered the least factor load. This is similar to the first study to test the construct validity of the CoSEFLT scale. The scale had 47 items and a two-factor structure.

4.2 Convergent validity and reliability

For convergent validity, we calculated the mean value of variance (AVE). According to Fornell and Larcker (1981), the mean variance should be above 0.50.Cronbach Alpha coefficient is generally used for reliability analysis. It is desirable that the Cronbach's alpha coefficient be at least 0.7 (Coşkun et al., 2019). As a result of the reliability analysis, it was determined that the scale and its sub-dimensions had high reliability.In addition to the Cronbach Alpha coefficient, the composite reliability (CR) coefficient was also calculated. According to Nunnally and Berstein (1994), the CR value should be greater than 0.7. The results of the analysis conducted to determine the convergent validity and reliability of the CoSEFLT scale are presented in Table 3.

Table 3 Convergent validity and reliability analysis results

Convergent Validity and Reliability		**CoSEFLT_Q (47 Items)**	**Factor 1 (29 Items)**	**Factor 2 (18 Items)**
Average Variance Extracted (AVE)	First Application	0.584	0.565	0.614
	Second Application	0.571	0.544	0.618
Composite Reliability	First Application	0.985	0.974	0.966

(CR)	Second Application	0.984	0.972	0.967
Cronbach's Alpha	First Application	.995	.992	.992
	Second Application	.995	.992	.992

According to Fornell and Larcker (1981), considering that the mean variance value should be above 0.50, the scale and its subdimensions have sufficient convergent validity. Considering that the CR value should be above 0.7, according to Nunnally and Berstein (1994), the scale and its subdimensions have a sufficient level of composite reliability. Coşkun et al. (2019) report that the CoSEFLT scale and its sub-dimensions have good reliability in both contexts, where they define "high reliability" as a Cronbach Alpha coefficient of 0.7 or above.

4.3 Normality distribution

When the normality test results given in Table 4 were examined, the CoSEFLT scale and its sub-dimensions did not show a normal distribution ($p<0.05$). For this reason, Spearman's correlation analysis was preferred for the relationship between the scale and its sub-dimensions. In addition, CFA could not be performed because the normal distribution condition, which is one of the prerequisites for confirmatory factor analysis (CFA), was not met.

Table 4 Normality analysis results

Application	Scale and Sub-Dimensions	Kolmogorov-Smirnov		
		Statistic	df	Sig.
First Application	CoSEFLT_Q	258	502	.001
	Factor 1	254	502	.001
	Factor 2	279	502	.001
Second Application	CoSEFLT_Q	238	702	.001
	Factor 1	236	702	.001
	Factor 2	260	702	.001

4.4 Relationship between scale and sub-dimensions

According to the results of the Spearman correlation analysis, which was conducted to determine the relationship between the scale and its subdimensions, a positive and high-level correlation was found between the scale and its subdimensions (Table 5).

Table 5 Relationship between scale and sub-dimensions

Application	Scale and Sub-Dimensions	CoSEFLT_Q (47 Items)	Factor 1 (29 Items)	Factor 2 (18 Items)
		r	r	r
First Application	CoSEFLT_Q	1.00	.972*	.951*
	Factor 1		1.00	.890*
	Factor 2			1.00
Second Application	CoSEFLT_Q	1.00	.975*	.950*
	Factor 1		1.00	.896*
	Factor 2			1.00

*p<0,01

5 Discussion and conclusion

The present study involved the adaptation of Moafian et al.'s (2019) "Characteristics of Successful EFL Teachers Questionnaire (CoSEFLT-Q Scale)" to the Turkish context. Additionally, a reliability analysis was conducted. This scale was administered to 502 participants. It consists of seven

dimensions: teaching accountability, attention to all, morality, care and enthusiasm, evaluation, teaching boosters, class attendance, and 47 items.

Specifically, the developer of the original scale, Moafian et al. (2019), benefited not only from academics at the university but also from language teachers while developing the scale. Upon examination of scale studies, it was discovered that there are existing scale studies pertaining to the various facets of effective English as a Foreign Language (EFL) instructors. Prior research on the characteristics of successful EFL teachers has been classified into two groups. The primary goal of the initial study was to determine the most beneficial qualities by comparing diverse differences among participants (e.g., instructors vs. learners, female students vs. male students, and high-achievement learners vs. low-achievement learners). The next type of study focuses on creating and analyzing the construct validity of a survey instrument (Alzeebaree & Ali Hasan, 2020; Çakmak & Gündüz, 2018; Khojastehmehr & Takrimi, 2009; Moafian & Pishghadam, 2009; Park & Lee, 2006; Soodmand Afshar & Doosti, 2013).

According to the literature, Khojastehmehr and Takrimi (2009) and Moafian and Pishghadam (2009) fall into the second category. However, the two studies conducted to construct a survey instrument for assessing the traits of effective language instructors lacked a comprehensive assessment of the psychometric properties of the tools. When considering the quality of effective English teachers, it is evident that there is currently no scale specifically designed or modified for Turkish culture in the existing literature. Hence, this study is significant as it is an inaugural investigation. In this context, we checked the psychometric properties of the CoSEFLT-Q (via confirmatory factor analysis). The results of the study demonstrated that the current tool, which assesses the traits of effective language instructors, is a valid and trustworthy tool that might represent several features of diverse aspects of education, including teacher training programs and research. It is a certified evaluating instrument that may examine particular traits of EFL instructors, characteristics that are intimately related to their professional performance. When clearly delineated characteristics and behaviors of a pedagogically effective language instructor and key aspects are credited to “excellent” language teachers, language instructors will have particular and criterion-led objectives. and particular milestones are required in foreign language teaching programs.

Furthermore, instructors will be informed of the aspects that learners value in them, as their comments were used in the construction of the CoSEFLT-Q. They will have a better grasp of their pupils and try to address their requirements as a consequence of this insight. The findings of the current tool might also aid in-service instructors; that is, receiving feedback from learners on instructors’ performance may be extremely beneficial for both administrators and language teachers. Undoubtedly, feedback is critical in assessing the effectiveness of any activity. Other researchers may use the current tool to conduct other research studies and uncover the connections between EFL instructor efficiency and other characteristics. Despite the rigour of the CoSEFLT-Q analysis, a complete judgment cannot be made solely based on this study’s findings, which are adaptation-based. The study’s methods and findings were limited to the sample, which limits the generalizability of the scale and should be preserved.

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Appendix 1

Başarılı İngilizce Öğretmenlerinin Özellikleri Anketi

1: Kesinlikle Katılmıyorum, 2: Katılmıyorum, 3: Fikrim yok, 4: Katılıyorum, 5: Kesinlikle Katılıyorum

Benim öğretmenim…	1	2	3	4	5
1.Konuyla ilgili iyi bir bilgiye sahiptir.					
2. Alanıyla ilgili güncel bilgilere sahiptir.					
3.Öğrencilere karşı arkadaş canlısıdır.					
4. Öğrencilere birey olarak saygı duyar.					
5.Öğrencileri iyi anlar.					
6. Sınıfı iyi yönetme becerisine sahiptir.					
7. İyi huyludur.					
8. Sabırlıdır.					
9. Espri anlayışına sahiptir.					
10. Yeni öğretim yöntem ve stratejilerinin farkındadır.					
11. Cd, ses kayıtları vb. gibi öğretim materyalleri kullanır.					
12. Öğretmekten zevk alır.					
13. Öğrettiği konuyla ilgilenir.					
14. Kendine güveni vardır.					
15. Öğrencileri öğrenmeye teşvik eder.					
16. Öğrencileri becerileri/yetenekleri ve zayıflıkları açısından, iyi tanır.					
17. Zayıf olan öğrencilere yardım etmeleri için, daha iyi öğrenen öğrencileri kullanır.					
18. Yeterli sayıda ödev verir.					
19. Yeterli sayıda yazılı değerlendirme yapar.					
20. Yazılı değerlendirmelerin sonuçlarını ilan etmede hızlıdır.					
21. Derse iyi hazırlanmıştır.					
22. Öğrencilerin sorularını cevaplarken dikkatli ve nettir.					
23.Önemli konuları ve noktaları vurgular.					
24. Dinamik ve enerjik bir kişidir.					
25. Tüm öğrencilere ilgi gösterir.					
26. Sınıf içinde ve dışında öğrencilere yardım etmeye isteklidir.					
27. Öğrencileri farklı şekillerde motive eder (motivasyon çeşitliliğini teşvik eder).					
28. Doğru bir telaffuzla, anlaşılır bir şekilde konuşur.					
29. Temiz ve düzenli bir görünüme sahiptir.					
30. Materyalleri öğrencilerin anlama düzeyinde sunar.					
31. Sınıfa zamanında girer.					
32. Sınıftan zamanında ayrılır.					
33. Tüm fikirlere saygı duyar.					
34. Yapıcı eleştiriyi kabul eder.					
35. Konuyu ders süresi ve saatine göre iyi organize eder.					
36. Puanlamada tarafsızdır.					
37. Öğretimde üretkenliğe sahiptir.					
38. Tüm öğrencileri öğrenmeye dahil eder.					
39. Öğrencilerin sınıfa katılımı için eşit fırsatlar sağlar.					
40. Tartışma ve soru sorma fırsatları yaratır.					
41. Öğrencilere karşı, ayrımcılık yapmaktan kaçınır.					
42.Öğrencilerin öğrenme sorunlarıyla ilgilenir.					
43. Ders saatini, dersin amaçlarına ve farklı dil becerilerine uygun olarak ayarlar.					
44. Öğrencilerle dalga geçmekten kaçınır.					

45. Çok sert olmaktan kaçınır.					
46.Öğrencilerde özgüven oluşturur.					
47. Sınıfta öğrencilerin varlığını önemser.					

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Developing the design skills of child development program students "From theory to practise"

Gülcenur KESEBİR[1*] Ayfer ERGEZEN[2]

[1]Department of Child Care and Youth Services, Koçarlı Vocational School, Aydın Adnan Menderes University, Aydın, Türkiye.
[2]Department of Child Care and Youth Services, Koçarlı Vocational School, Aydın Adnan Menderes University, Aydın, Türkiye.

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Abstract

It is very important that Child Development associate degree students understand applied pedagogy, both to equip them professionally and to adapt them to the environment in which they might find employment after graduation. To ensure that child development students have the scientific perspective and national qualifications that the age requires, a well-equipped and enriched physical environment is necessary throughout the educational process. In this context, the main purpose of the study is to uncover the shift in child development programs students' opinions on design and practice skills following the workshops. To uncover the effect, the study used the case study method, one of the qualitative research methods. The study group of the research consisted of seven students participating in the Koçarlı Vocational School Child Development Program. Criterion and convenience sampling, which belong to purposeful sampling methods, were used. Data were collected using a semi-structured interview form consisting of 5 open-ended questions prepared by the researchers. The data obtained were analyzed and interpreted using the descriptive analysis method. The findings that emerged from the descriptive analysis consisted of the themes of "competence, satisfaction, areas of development, practical problems and students' opinions". The study found that students' use of the applied workshop improved their perception of self-efficacy, increased their satisfaction with teaching, had a positive impact on their cognitive and social-emotional development, and improved their professional skills and sense of belonging to the school.

1 Introduction

Since the future of society depends on children, any investment in children is an investment in the future. Children constitute 26.9% of the population of approximately 84,680,243 in Turkey (TÜİK, 2021). One of the reasons for the general opinion that the early childhood period covers the period from birth to the age of eight (Bee & Boyd, 2020) is that the foundations of developmental areas begin to be laid during this period (Copple & Bredekamp, 2009). Given the importance of early childhood, candidate teachers who work with young children should have a holistic knowledge of developmental theory and practice and be able to identify and promote children's strengths in the learning process (Saracho & Spodek, 2007). When the student structure of preschool classes in

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*Correspondency: gkesebir@adu.edu.tr

our country is examined today, the fact that children of different ages and with different individual and sociocultural characteristics are in the same classes should also be taken into consideration. In this context, within these differences, children need to encounter versatile teachers who can recognize their competencies and strengths in all kinds of environments and conditions, see and respond to their interests and needs (Nieto, 2003).

Child development refers to growth and development, that is, the physical, cognitive, emotional, and social changes an individual experiences from infancy through adolescence (Levin, 2011). Creating a developmentally appropriate learning environment requires expertise in child development. The necessary training to become a child development specialist is provided by the university faculty and vocational schools that offer training in child development. The main objective of child development departments is to train qualified and well-equipped specialists. A child development specialist is an important professional who can work in the educational, health, and social sectors, looking at all children in the prenatal and postnatal stages from a holistic perspective, and performing very important tasks during this period (ÇUCEP, 2016). These professionals assess the child's cognitive, linguistic, physical, social, and emotional development as well as self-care; participate in the child's health monitoring; and serve the child, family, and society with innovative programs. The associate degree program in Child Development belongs to vocational schools. Students who complete this program can work in preschool institutions, special education and rehabilitation centers, children's homes, and hospitals. It is of great importance that graduates of the associate degree program in Child Development learn innovative practices that involve the child, as they have very close communication and interaction with children.

According to the Child Development National Core Education Program (ÇUCEP, 2016), the goals of child development education are as follows:

- Be able to develop tools and methods to assess child development,
- Be able to develop projects that meet the needs of children and families,
- Be able to innovate and develop in line with the changing and evolving needs of society and establish creative and effective communication,
- To contribute to the formation of a society that preserves its own culture, has universal values, and includes qualified people,
- To meet these requirements, it is necessary to train highly qualified child development professionals who can consider professional ethical principles, apply technological and scientific methods and techniques, and adopt an eclectic approach.
- In addition, according to the Child Development National Core Education Program (ÇUCEP, 2016), a child developer is expected to possess the following qualities.
- The ability to evaluate, interpret and develop knowledge about child development based on evidence,
- Knowledge of intervention/support/education programs, approaches, teaching methods and techniques, measurement, and assessment in the field of child development,
- Make a developmental definition by conducting developmental assessments of children with typical, atypical, and high-risk development using different methods, techniques, and instruments according to their expertise,
- Design intervention, support, and education programs according to their expertise, develop tools and equipment, organize the environment, implement, and evaluate the programs; be able to advise the family and/or other professionals working with the child,

- Have national qualifications, such as reflecting the philosophy, general characteristics, and requirements of each program element in their practice of programs related to the profession.

Therefore, there is a need for a well-equipped and enriching physical environment that can be used throughout the educational process to produce competent child development professionals at the national level who will pursue the above objectives. Child development education should include child development practices and the acquisition of targeted skills. Despite the importance of these aims in the literature, teacher training programs tend to be overly theoretical and lack real-world experiences for students (Bushweller, 1995). To address this issue, institutions offering child development education should conduct practice-oriented lessons in classrooms or workshops using the necessary equipment, as warned by Bushweller (1995). This approach will enable students to develop child development skills more effectively. Through practice-oriented courses held in well-equipped environments, students can plan, choose tools and methods, carry out the practice process, evaluate the results, and make decisions based on real-life interpretation of the practice results. When the course content of university child development programs is examined, it is seen that internships and application courses in preschool educational institutions are included in the program for practical purposes. While internship is a course that lasts 30 days, usually in the summer, practice in preschool education institutions is a course that is scheduled for a semester at some universities and a full semester at others (Yükseköğretimde Uygulamalı Eğitim Çerçeve Yönetmeliği [Framework Regulatıon on Applıed Traınıngs in Hıgher Education], 2021). Apart from these two courses, there are many other courses mentioned in the child development program that require practical application, such as drama, music, mathematics, science in preschool, and material design.

Design Skill Workshops and the importance given to vocational technical education in Education Vision 2023 show that the development of students' production skills is targeted (Erdem, 2019). Education should aim to develop vocational skills in students. Education should not only provide information in a certain field but also develop the student's personality in that field (Baltacıoğlu, 1995). Studies conducted as part of the School Development Program in the USA have shown that teachers need more information about child development and specific skills and strategies to apply this knowledge to classroom practices. To meet this need, efforts have been made to teach teachers how to apply their knowledge of child development to more effectively manage their classrooms (Comer & Maholmes, 1999).

Students in the Child Development program are expected to have the necessary manual skills, to be creative and productive, and to have the necessary knowledge and skills for the fine arts (such as music, painting, drama, and games). To meet this need, child development undergraduate and associate degree programs in Turkey train students in applied courses such as material design in preschool and special education, music and movement education in early childhood, math, and science education in preschool and creative drama. In addition to the theoretical knowledge required for the profession, practical courses play a crucial role in equipping individuals with practical skills (Alkan et al. 2001). Clearly, these courses do not provide the desired level of effectiveness in traditional classrooms (Bushweller 1995). For this reason, a well-equipped learning environment is essential to enhance the effectiveness of these hands-on courses in child development programs and to provide students with these skills. For the equipment needed in the materials development course, the musical instruments needed in the music and movement education course, an area for concrete materials and experimental materials to be used in mathematics and science courses, and the lack of materials and furniture needed for the creative

drama course. Lack of knowledge about these courses has a negative impact on the effective implementation of the objectives of these courses. Providing the necessary materials for all these courses, a suitable floor, that is, an enriched physical environment, direct interaction with concrete materials, and practices will help the students to complete the child development program. If workshops are conducted interactively and integrated into lessons, this can be seen as an important step in terms of hands-on teaching (Gülhan, 2021). Workshops and laboratory practices are crucial components of a student's professional education, and the combination of theoretical and practical teaching methods enhances the knowledge and skills gained by the student (Uçar, 2008).

It is common knowledge that candidate teachers need more support in practice. In addition, care should be taken to ensure that teaching practices are consistent with information on child development (Comer & Maholmes, 1999). Although students are scientifically competent in the education system, knowing where and how to use these competencies is called a skill (Eskici & Özsevgeç, 2018). First, it is thought that candidate teachers have a set of life skills that they should have to support the development of their life skills (Bolat & Balaman, 2017). It is becoming increasingly important for people who interact with children in different work environments to have skills such as making decisions, empathy, problem solving, creative thinking, and communication among life skills. It is believed that this study will contribute to students' self-efficacy perceptions, and therefore, the academic success of students who develop a sense of efficacy will also increase. It is thought that students with high academic self-efficacy will be more successful in their courses and exams (Barutçu Yıldırım & Demir, 2017).

Reviewing the literature, we find that there are studies that examine some child development skills of bachelor 'sand associate students in a national context (Bakırhan & Çiftçi, 2023; Yakar, 2020; Arslan, 2019; Paksoy & Liman, 2018; Alagöz, Tarkoçin, & Taze, 2019; Taşgın & Korucuk, 2018). However, no study has been found in the literature on the development of design and practice skills of students in an associate degree program in child development through infrastructure.

The primary aim of the study was to uncover the shift in child development program students' opinions on design and practice skills following the workshops. The research questions related to this objective are as follows.

1. What effects does the workshop have on students' perceptions of their competence and inadequacy?
2. What effect does the workshop have on student satisfaction regarding their learning environment?
3. How does the teaching of lessons in the workshop affect students' development areas?
4. What difficulties do students face in courses involving practical work?
5. What is the opinion of students regarding the workshop on design skills development?

These research questions also constituted the themes of the study during the data analysis process.

2 Research design

The case study qualitative research method was used in this study. The case study is employed when examining 'how' and 'why' questions, particularly in situations where the researcher has minimal control over events, and the focus is on investigating a contemporary phenomenon within a real-life context (Yin, 2003). This method was preferred in this study because it examined how student opinions changed after the workshops.

2.1 Study group

The study group consisted of seven students studying at the Koçarlı Vocational School Child Development Program in the spring semester of the academic year 2022-2023. Criteria and convenience sampling, which are purposeful sampling methods, were used to determine the study group. In the criterion sampling method, all cases that met a predetermined set of criteria were studied (Creswell & Poth, 2016). In this context, the criterion for participants to be included in the study group was that they had studied for at least one semester at the school where the workshop was established. Convenience sampling, another method, requires that the sample be selected from accessible and suitable units because of limited time, budget, and labor resources (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2023). The sampling method was chosen based on convenience and speed. As this research coincided with the earthquake in Turkey in February and the subsequent decision to stop compulsory attendance at universities, it was deemed appropriate to conduct the implementation with seven students who could continue face-to-face education. The participants were one male and six female students. One student was 20 years old, two were 18 years old, and four were 19 years old. Additionally, two of the participating students were in the 2nd semester of the program and five were in the 4th semester.

2.2 Data collection tools

Data were collected using a semi-structured interview form prepared by the researchers. Expert opinions were obtained from three faculty members regarding the interview questions. The interview form consisted of 5 open-ended questions. (resp. What are the points at which you feel competent and inadequate in the child development program? Can you talk about them?Can you tell us how satisfied you are with the application-oriented courses in the physical infrastructure-related child development program?How does the physical infrastructure of child development programs affect cognitive and social-emotional development?What problems do you encounter in implementing projects, practices, activities, etc., under the child development program? Can you describe them? and evaluate the Child Development Program's Design Skill Development Workshop. In your evaluation, compare the old conditions with the new conditions.) The participants took an average of 30 minutes to complete the questionnaire. Interviews with the study group were conducted face to face and recorded.

2.3 Data collection process

The interview questions were applied to the study group as a data collection tool prior to implementation. The workshops, which aimed to determine the impact of the research questions, lasted for six weeks during the spring semester of the 2022-2023 academic year. The workshops were carried out within the scope of practical-content semester courses (e.g., Mathematics and Science Education in Preschool Period; Music and Movement Education in Early Childhood) by the instructors who conducted the course and are also the authors of this research. During this process, faculty members played a guiding role in the workshop and conducted their lessons in a way that gave students the opportunity to design and implement materials and equipment in the workshop. The workshop was created to restructure a classroom in a vocational school building, enabling students to participate more effectively and efficiently in theoretical courses that require practical application. To achieve this, a workshop was designed to replicate the infrastructure of a preschool classroom (Appendix I). After the workshops, data were collected through interviews with participating students using the same tool.

2.4 Data Analysis

The data obtained in the study were analyzed using descriptive statistics. Descriptive analysis aims to present the data obtained from the interviews and observations to the reader in an ordered and interpreted form. The data were classified, summarized, and interpreted based on the given themes. We established cause-effect relationships between the findings and comparisons between events where appropriate (Yıldırım & Şimşek, 2021). In descriptive analysis, direct quotations are often used to impressively reflect the statements of the interviewed or observed persons. In this study, data analysis was conducted in four phases of descriptive analysis: establishing a framework, processing the data according to the thematic framework, defining the findings, and interpreting the findings. A framework was first created based on the research questions, and the theme under which the data were to be presented was defined. Then, based on the created framework, we determined which data were important and which should be excluded. The organized data were then coded and defined, and the findings were supported by quotes from the participants' answers to the questions. Finally, the findings are explained and compared with their associations.

Verbal consent was obtained before the interview commenced. After the interviews were transcribed, they were read twice by two researchers and analyzed separately. During the analysis, the codes revealed by the researchers were merged and compared. Coding consistency was determined using Rolling's consistency formula (Rolling, 1981). Given two sets of items A and B, Rolling calculates the agreement as 2C/(A + B). In this formula, A represents a set of items 1, B represents a set of items 2, and C represents a set of common items. The coding consistency of these two coders on all items was found to be 1 (one), which shows identical consistency. Themes and their associated codes were tabulated based on their frequency. In addition, direct quotes from participants' answers were reproduced according to the findings.

3 Findings

The data obtained in this study were analyzed and interpreted using descriptive statistics. The findings that emerged from the descriptive analysis were composed of the themes of "competence, satisfaction, areas of development (including two sub-themes: social emotional development and cognitive development), practical problems, and students' opinions". In presenting the findings, students' opinions were reproduced using direct quotations. While students' opinions were presented, the opinions of the same students were included in each theme to better reveal the differences in opinions before and after the workshop applications. However, quotes regarding all the students' opinions were included in the findings. The findings of the first three themes were divided into before and after the workshop, and themes and codes were tabulated. However, for the fourth theme, the data were only presented in a single table before the workshop, as the students did not indicate that they had any problems with the practice after the workshop. Finally, comments on the comparative analysis before and after the workshop are presented. The findings for the fifth theme were presented in a single table before and after the workshop, depending on the theme's content.

3.1 Findings from students' opinions on competence

The findings obtained from the students' opinions on the theme of competence before the workshop are presented in Table 1.

Table 1 Findings from the students' opinions on competence before the workshop

Theme	Codes	f

Competence	Inadequacies in practice-oriented theoretical courses	5
	Competencies in practical courses	3
	Inadequacies in drama courses	2
	Competencies in theoretical courses	2

Students were asked to indicate subjects in which they felt competent and inadequate in the program when they thought of the physical infrastructure. When the responses were examined along these lines, four codes under the theme of competence appeared in the table. Most students (5) indicated that they felt inadequate in practically oriented courses. In addition, they stated that they considered themselves competent in the practical courses they completed in preschool educational institutions and private educational institutions, as well as in the context of their internships in these institutions. In this context, it is noteworthy that the students' perception of self-efficacy improved in the lessons in which they could practice on the spot, make direct observations, and have concrete experiences. In this direction, it can be said that they feel inadequate in practice-oriented theoretical courses of the program due to the poor infrastructure of the department. Below are some of the students' (S7 and S5) direct quotations on this theme before the workshop practices:

> **S7:** "In the internships and pre-school educational institutions where I work, I can do studies for children myself. But I feel inadequate if I do not practise in theoretical courses, such as drama courses."

> **S5:** "Our school has a limited field of practice. I feel inadequate in applying my practical skills because there is no practical part of some courses. I feel sufficient in the theory courses."

The findings obtained from the students' opinions on the theme of competence after the workshop are presented in Table 2.

Table 2 Findings from the students' opinions on competence after the workshop

Theme	Codes	f
Competence	Competencies in practice-oriented theoretical courses	6
	Memorability	1
	Be active	1
	Tangible experience	1

After the workshop exercises, the students were asked to name the points at which they felt competent and inadequate when thinking about the physical infrastructure in the child development program. When students' responses were examined, four codes appeared in the table under the theme of competence. Most students (6) indicated that they felt competent in practical courses. They also indicated that what they learned during their workshop experiences was more memorable, that they could be more active in practice, and that their experiential opportunities increased. In summary, the opportunity to make direct observations and have tangible experiences in the theoretical courses of the programme that require practice leads to an increase in students' perceptions of self-efficacy. Below are some of the students' (S7 and S5) direct quotations on this theme after the workshop:

> **S7:** "After our workshop was built, we started our work. We hold our theoretical lessons there as well as practical ones. After the lessons, I began to believe that I could manage on my own in all areas of special education and child development."

> **S5:** "After the workshop was held in our school, we had the opportunity to experience many things in practise. Through these experiences I felt more competent in some practical skills."

3.1.1 Comparative analysis and interpretation of the students' views before and after

the workshop in relation to the theme of competence

When examining the self-efficacy perceptions of participating students before and after the design skills development workshop, it is noteworthy that students mostly felt inadequate in the practise-based theory courses, but indicated that their self-efficacy perceptions in these theory courses improved after the workshop was set up.

3.2 Findings from students' opinions on satisfaction

The findings obtained from the students' opinions on the theme of satisfaction before the workshop are presented in Table 3.

Table 3 Findings from the students' opinions on satisfaction before the workshop

Theme	Codes	f
Satisfaction	Limitation in practice	7
	Material problems	2
	Inefficiency	1

When reflecting on the physical infrastructure of the program, the students were asked to provide information about their satisfaction with practice-oriented courses. When students' answers were examined in this direction, three codes appeared in the table under the theme of satisfaction. All the students stated that they encountered some limitations because the teaching in the school was conducted in the classroom. They expressed these limitations as dissatisfaction with not having enough experience and opportunities to apply what they had learned. In addition, some of the students stated that they could not use the courses efficiently enough because there were only a few areas where they could practice outside the classroom and that they had difficulties finding and carrying the materials they found with them. Below are some of the students' (S2 and S4) direct quotations on this theme before the workshop:

> **S2:** "We always must carry the necessary materials for the lessons. We were unable to find a reliable place to use. I am dissatisfied with this situation. In addition, the opportunities for use in the school for our practise-oriented courses are very limited."

> **S4:** "I find it difficult to find an opportunity to implement the tasks set by teachers. While we prepare the task, we prepare it by considering the possibilities of the class, which is not useful."

The findings obtained from the students' opinions on the theme of satisfaction after the workshop are presented in Table 4.

Table 4 Findings from the students' opinions on satisfaction after the workshop

Theme	Codes	f
Satisfaction	Group interaction	3
	Opportunity for experience	2
	Efficient and enjoyable	2
	Availability of materials	2

After the workshop practice, the students were asked to provide information about their satisfaction with the lessons that had to be practiced in the context of physical infrastructure in the child development program. Four codes appeared in the table under the theme of satisfaction when students' responses were examined along these lines. Some of the students indicated that the interaction with their classmates increased and the lessons were more fun because the lessons to be practiced were in the workshop, while others indicated that they had more experience thanks to the practice opportunities provided by the workshop. They also stated that they could easily access the materials for the course content and that they had access to a secure area where they

could access the materials they had brought with them. Below are some of the students' (S2 and S4) direct quotations on this theme after the workshop:

> **S2:** "We achieve our material requirements more easily. We can also leave the materials that we brought from outside the workshop. In addition, my interactions with my classmates improved in the lessons taught in the workshop. This has made the lessons more fun for me."
>
> **S4:** "We started with the theoretical lessons to be practiced in the workshop. The workshop environment increased intimacy. Having our own large workshop where we can assess each area makes teaching more fun and gives us the opportunity to gain experience."

3.2.1 Comparative analysis and interpretation of the students' views before and after the workshop in relation to the theme of satisfaction

While the satisfaction level of students was low before the establishment of the design skills development workshop because of limited practice opportunities in the courses, it is noteworthy that the satisfaction level increased because they had the opportunity to practice a lot after the establishment of the workshop. In addition, the students stated that they were not satisfied that they could not find the materials they needed in the school before the workshop, but had to get them from outside and carry them around the whole time. However, after the workshop was set up, it seemed that the variety of materials in the workshop and the presence of a safe area where students could put the materials they brought with them increased student satisfaction.

3.3 Findings from students' opinions on areas of development

The findings obtained from the students' opinions on the theme of the areas of development before the workshop are shown in Table 5.

Table 5 Findings from the students' opinions on areas of development before the workshop

Theme		Codes	f
Areas of development	Cognitive Development	Lack of practice support for theoretical knowledge	5
		Impermanence of knowledge	2
		Inability to transfer theoretical knowledge to real life	3
	Social-Emotional Development	Lack of social interaction and communication	3
		Concern about professional competence	2
		Monotony	2

When considering the physical infrastructure within the child development program, students were asked to provide information on the impact of their progress on courses requiring practice in their areas of development. When the students' responses were examined along these lines, two categories (cognitive and social-emotional) appeared in the table under the theme of the areas of development. Both categories contain three codes. When examining the cognitive category, most students stated that they could not internalize the information because the theoretical knowledge they had learned in the practical courses of the program was not supported by examples of practice. Additionally, some students (3) stated that the information they learned could not be permanent for the same reason. In turn, two students stated that they would have difficulties using this information when they become teachers and come into the classroom because they have not experienced theoretical knowledge from the course in a practical setting. This situation was reflected in the findings as an inability to transfer theoretical knowledge to real-life situations.

In relation to the category of social-emotional development, some (3) students stated that theory classes are usually conducted by the lecturer using the oral expression method; thus, peer

interaction in the classroom is limited and this situation has a negative impact on their communication with their friends. In addition, two students stated that they felt professionally inadequate because they could not back up their knowledge from the theory courses with practical examples, and this situation led them to worry about their professional lives. Finally, two students stated that theory classes in the study program are usually conducted in such a way that the lecturer explains the topic of the lesson and the student listens, so that the class follows a monotonous structure and, in this case, they experience feelings of boredom during the class. Below are some of the students' (S1 and S6) direct quotations on this theme before the workshop:

> **S1:** "Most of the lessons I learned in school occur in the classroom. The theoretical knowledge we have learned is very important and very good, but since we do not have the opportunity to experience this knowledge in practice, I find that after a while, I forget what I have learned. Especially in exam times." (Category of cognitive development)

> **S6:** "In the hours we spend in the classroom, we learn very good information from our teachers. However, in general, our teachers talk and listen. Occasionally, group work may occur. We love this work very much, but because of the physical structure of the environment, everyone usually forms a group with their deskmates and people around them. Difficult to work with the whole class or with different friends, which has a negative effect on the dynamics in the class." (Category of social-emotional development)

The findings obtained from the students' opinions on the theme of the areas of development after the workshop are shown in Table 6.

Table 6 Findings from the students' opinions on areas of development after the workshop

Theme		Codes	f
Areas of development	Cognitive Development	Acquisition of professional experience	6
		Internalization of knowledge	4
		Transfer of theoretical knowledge to real life	2
		Memorability	2
	Social-Emotional Development	Interaction and communication between peers	5
		Confidence in professional competence	2
		Relationship with children	1
		Be active	1

In examining the students' expressions about the effects of conducting the courses according to the workshop practices, two categories (cognitive and social-emotional) emerged under the theme of areas of development, as shown in the table. Both categories contain four codes. In terms of the cognitive category, almost all (6) students indicated that the opportunity to experience theoretical knowledge during the program's courses in the workshop improved their professional knowledge and enabled them to gain professional experience. In addition, most students (4) stated that they were able to internalize the theoretical knowledge they had learned for the same reason through practice, and this situation increased their success in the course.

When examining the category of social-emotional development, the majority of students (5) stated that as a result of the theoretical lessons requiring practice, they improved their interaction, communication, and sharing with their friends in group work thanks to the convenience of the workshop's physical structure. Remarkably, one of the students said that they perceived the child-centered structure of the program better, thanks to the practices they did in the workshop. Below are some of the students' (S1 and S6) direct quotations on this theme after the workshop:

> **S1:** "In the workshop we have the opportunity to practise a lot with different materials or materials we have developed. This situation has a positive effect on the skills required for a professional life. By applying the professional knowledge, we have learned theoretically in the

workshop, we gain experience." (Category of cognitive development)

S6: "Our new workshop provides a spacious environment where we can work with all my friends. Thank you for this environment, and we greatly enjoy group work. During these studies, I have noticed that I have not only learned something, but that my communication and exchange with my friends has also improved." (Category of social-emotional development)

3.3.1 Comparative analysis and interpretation of the students' views before and after the workshop in relation to the theme of areas of development

In terms of cognitive development, prior to the establishment of the design skills development workshop, students indicated that they were unable to back up the theoretical knowledge they had learned in class with practice, which made it difficult to apply the knowledge in real life. However, it is noteworthy that after the introduction of the workshop in the child development program, the students indicated that internalizing the information they had learned in the theoretical lessons in the workshop made it easier for them to retain it in their memories and apply it in real life.

In terms of social-emotional development, students stated that their communication with peers was impaired because the classroom before the workshop was not suitable for group work due to its structure. However, after the workshop was set up, it was noted that they indicated that even large group activities could be carried out easily because of the opportunities the space offered in terms of use, which increased intimacy and interaction in the classroom. Finally, although the students indicated that they were worried about their professional lives due to the limited practice opportunities before the workshop, their responses that their confidence in their professional skills had improved after the workshop attracted attention.

3.4 Findings from students' opinions on practical problems

The findings obtained from the students' opinions on the theme of practical problems before the workshop are presented in Table 7.

Table 7 Findings from the students' opinions on practical problems before the workshop

Theme	Codes	f
Practical problems	Limitation of the practice	5
	Inefficiency due to limited experience	4
	Limitation of material	3
	Limitation of classroom interaction	2
	Inability to concretize information	2
	Distraction due to limitation of practice	2
	Inability to transfer theoretical knowledge to real life	1

Students were asked to provide details of the problems they encountered in practice-based teaching when thinking about the physical infrastructure of the child development program. When students' answers were examined in this direction, seven codes appeared in the table under the theme of practical problems. Most students (5) stated that the lack of a practical area in the course was a problem in teaching theoretical courses. Apart from this, it was noted by students that teaching can be inefficient due to lack of experience in theoretical courses, difficulty in finding materials to practice, ineffective group work due to the physical infrastructure of classrooms, theoretical information remaining abstract due to limited practice, and lectures being mostly oral, leading to distraction. Below are some of the students' (S1 and S4) direct quotations on this theme before the workshop:

> **S1:** "We had a problem because we did not have our own practice area. The exercises we performed in the classroom were inefficient. Most of the time, I had difficulty concentrating. Since we did not have a proper classroom environment, we had to pretend. Therefore, what we were learning remained abstract most of the time."
>
> **S4:** "With the activities we must make in class, the areas of practice in school are not enough. This situation limits interactions in the classroom. Group work was limited. And since we do not have an practice area, we must look for the materials needed for the activities ourselves and take them with us every time."

After the workshop exercises on the theme of "practical problems," all the students stated that they had not encountered any problems in the courses that had to be practiced according to the structure of the workshop.

3.5 Findings from post-workshop students' opinions on design skills development workshop

The findings obtained from the students' opinions on design skills are shown in Table 8.

Table 8 Findings from the students' opinions on design skills development workshop

Theme	Codes	f
Students' opinions	Various practices	5
	Development of vocational skills	5
	Varied material	4
	Entertaining course processes	3
	Development of a sense of belonging	2
	Interaction among peers	2

Students were asked to evaluate the design skills development workshop of the child development program by comparing the old physical infrastructure of the program with the new physical infrastructure. When the students' responses were examined in this direction, six codes appeared in the table among the students' opinions on the design skills development workshop. The majority of students (5) stated that the workshop offers a variety of uses in terms of physical structure, size, furniture, and materials. Again, the majority of students (5) stated that the activities and exercises they were able to perform in the workshop developed the skills they should have for the profession. Additionally, some students (3) stated that the classes in the workshop were much more pleasant than the classrooms they had used in the past. It was also noteworthy that two students stated that their sense of belonging to the school and department had developed thanks to the workshop. Below are some of the students' (S1, S4, and S7) direct quotations on this theme after the workshop:

> **S1:** "In our new workshop we have a large area where we can use every part of it effectively. Previously, when we only used classrooms, lessons were boring and information was hung in the air. It was also difficult to organize the classroom. In our new workshop, we can easily use learning centers. We can design this ourselves. Our opportunities to gain experience have improved a lot."
>
> **S4:** "In the past, we have learnt very important information in class, but we hardly had the opportunity to apply the information because we lacked space. After we had our workshop, we started to spend most of our time here so that through a lot of practises we develop some skills that we need in our professional life."
>
> **S7:** "Since we had our own workshop outside the classroom, I was able to interact better with our teachers and friends. In the past, class days were rather monotonous, so it had already become difficult to come to school. After the workshop, my desire to attend school increased, and as soon as I arrived, I immediately went to the workshop. I started to adopt the school

and my department."

4 Discussion and conclusion

In this study, a semi-structured interview consisting of five questions was administered to seven child-development students. The findings obtained from the data were analysed and interpreted using the descriptive analysis method. The findings covered the themes of competence, satisfaction, areas of development, practical problems and opinions of the students.

The study concluded that while students felt inadequate in practical theory classes, their self-efficacy perceptions improved in many areas thanks to experiential opportunities after they had a practice area. According to the Child Development National Core Education Program (ÇUCEP, 2016), child development specialists are expected to develop tools, organize the environment, implement programs, and evaluate programs based on their expertise. It is emphasized that a positive change in teachers' attitudes and self-efficacy beliefs is very important and that they feel comfortable teaching the content when they trust pedagogy (Yabaş & Bozoğlu, 2022).

The study concluded that conducting theoretical courses in a child development program in a qualified and equipped practice area in school and having the opportunity to apply the knowledge learned in theory has a positive impact on the students' cognitive and social-emotional skills, both in terms of internalization and permanence of the information and in terms of interaction with peers. According to Tunç et al. (2018), students with positive thoughts about school perform better in relation to school, demonstrate both academic and social skills more successfully, and achieve positive outcomes. In addition, this study found that although student satisfaction was low because they could not back up the theoretical lessons with practice before the design skills development workshop was set up, the fact that they had a usable domain in many ways after the workshop increased student satisfaction.

The study found that the experience of applying theoretical knowledge learned in class in a field with wide-ranging opportunities, such as workshops, increased students' confidence in the profession. It is important to support the development of personality and self-awareness while preparing academically to become an educator (Aslan & Çelik, 2019). On the other hand, university education can be evaluated as a period in which an individual's self and self-confidence can be shaped quickly (Karagözoğlu, 2008). It is thought that child development associated with the degree of students' professional self-confidence will increase their success (Bursal & Paznokas, 2006).

The results showed that the presence of a practice area belonging to the child development program where students can spend an enjoyable, interactive, and productive time strengthens their sense of belonging to the school and department. A sense of belonging to one's workplace, culture, and environment is an important factor for people to find meaning in their life (Mavili et al., 2014).

The study concluded that classroom teaching was not conducive to group work because of the physical structure present and therefore had a negative impact on students' communication and interaction with their classmates. After the design skills development workshop was set up as part of the study, it was found that the area improved communication and interaction between students because of the opportunities provided in terms of usability. According to Apaydın Demirci and İkiz (2017), more comprehensive studies should be conducted in universities to develop students' communication skills, and a democratic and reliable school environment should be created to

improve individuals' communication skills. Another result of the research is that conducting the courses in a practice workshop provides an opportunity to experience theoretical knowledge, thus improving students' professional skills and enabling them to gain work experience. According to Baltacıoğlu (1995), education should aim to develop students' professional skills and foster their personality. Uçar (2008), in his thesis investigating the effect of applied course environments in vocational education institutions, revealed that giving courses in practice and theory increases students' professional knowledge and skill acquisition.

The fact that the theory courses in the Child Development program are conducted in a specific practice area prepared in accordance with the program gains has a positive impact on the student in many ways (professional skills, academic success, social development, etc.). In cases where workshops are integrated interactively into the classroom, this can be seen as an important step in practice-based education (Gülhan, 2021).

Finally, as a result of this research, the problems encountered by students in theory courses that require practice (themes of practical problems) are listed below:

- Lack of practice in the program has a negative impact on the flow of theory courses.
- Lessons can be inefficient because of the lack of experience in theory classes.
- It is difficult to find and transport materials in practice.
- Group work is not sufficiently effective because of the physical infrastructure of classrooms.
- Theoretical information remains abstract because of practical limitations.
- Distractions may occur, because teaching is mostly in the form of oral lectures.

The main reason for the problems encountered in this study is interpreted as the limitation of practice support in theory courses. According to Comer and Maholmes (1999), pre-service candidates need more practical support. This study showed that all problems mentioned by students before the implementation of the workshop were significantly resolved after the use of the workshop. In this context, the importance of an area that students can actively use in the child development departments of universities was confirmed, both in terms of professional, social, and cognitive skill development.

4.1Limitations and future directions

- This study was conducted at Aydın Adnan Menderes University Koçarlı Vocational School. Similar studies on infrastructure and its effectiveness can be conducted for child development programs offered at universities in different cities.
- This study was conducted with students pursuing an associate's degree program in child development. Similar studies can be conducted using undergraduate programs in Child Development or other programs within the Faculty of Education as samples.
- In this study, the intended situation was examined using a qualitative approach. Similar studies can be conducted using a quantitative approach by expanding the study population and sample size.
- This study aims to create an infrastructure. In different studies, the effects of such infrastructure can be examined in relation to different variables.
- Finally, workshops, labs, and so on. It is recommended that lecturers in programs with infrastructural facilities be trained to use these facilities.
- This study, which was conducted with a limited number of students due to the earthquake in Turkey, can be replicated with a larger group of participants.

5 Statement of researchers

In this section, you are expected to declare the following information regarding the titles:

5.1 Researchers contribution rate statement

The authors contributed to the study.

5.2 Conflict statement

The authors declare no potential conflicts of interest.

5.3 Support and thanks

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Appendix I

Figure 1 Design skill development workshop

Figure 2 Students at the design skill development workshop

Pedagogical Perspective

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Investigation of the factors affecting the curriculum fidelity of teachers working at different types of schools[1]

Feryad DOĞUŞ[2] Sanem TABAK[3*]

[2]Kırlı Secondary School, Ministry of National Education, Ordu, Türkiye.
[3]Curriculum and Instruction, Ordu University, Faculty of Education, Ordu, Türkiye.

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Abstract

The purpose of this study is to examine the factors affecting the curriculum fidelity of teachers working in different types of school. In the study, case study design from qualitative research designs was used. The participants of the study werre teachers working in primary, secondary and high school types in publice school affiliated to the Ministry of National Education in rural district in a province located in the Northers Anatolia region of Türkiye in the fall semester of the 2022-2023 academic year. The participants was determined by convenient sampling method. The data of the study were obtained through a semi-structured interview form. The research data were analyzed using the thematic analysis method in accordance with qualitative research and findings were determined. While determining the findings, themes and categories were obtained and direct quotations were included to reflect the teachers' opinions. As a result of the research; It was determined that they expressed the opinion that curriculum characteristics, institutional characteristics, student characteristics, geographical conditions, family structure, social development of students, centralized education system, high-stakes tests, and pre-service and in-service training that teachers receive affect teachers' curriculum fidelity.

1 Introduction

The curriculum plays a very important role in achieving the goals of education and training. Demirel (2008) defines the curriculum as “the learning experiences provided to the learner through planned activities at school and out of school”. According to Varış (1996), curricula are all in-school and out-of-school educational activities organized by the educational institution for learners to achieve the goals of national education and the school. Curricula play an important role in the curriculum. Curricula are official curricula implemented in schools. Bay et al. (2017) defined the curriculum as “a systematic and planned form of knowledge, skills, attitudes, and values aimed to be gained by students in a discipline”.

In Turkey, curricula sent to schools from a single center are expected to be implemented in a standardized manner by all teachers. For this reason, teachers play an important role in the

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*Correspondency: sanemuca@gmail.com

implementation of the curriculum in accordance with its objectives based on the curriculum (Bütün & Gültepe, 2016). In the process of implementing the curriculum, teachers' attitudes towards the curriculum affect its implementation and the realization of curriculum objectives. Adhering to the curriculum during the implementation phase directly affects its success (Dane & Schneider, 1998). Simultaneously, teachers should be actively involved in the process of designing curricula, which is the official curriculum. In this context, in the process of curriculum implementation, the degree of curriculum fidelity of teachers, who are the implementers of the curriculum, to the curriculum becomes very important in terms of serving the purpose of the curriculum.

Bümen et al. (2014) defined curriculum fidelity as "the implementation of the designed curriculum by teachers in a faithful manner". Dusenbury et al. (2003) define curriculum fidelity as the extent to which teachers faithfully implement the curriculum as planned by curriculum development experts. In the literature, other definitions of the concept of curriculum fidelity are expressed as follows: integrity and quality of implementation (Dane & Schneider, 1998), how close the curriculum is to its design, how well, and how faithfully it is implemented compared to the designed curriculum (Century et al., 2010; Furtak et al., 2008; Mihalic, 2002; Pence, et al., 2008; Ruiz-Primo, 2005), the compatibility between the designed curriculum and the implemented curriculum (Yaşaroğlu & Manav, 2015), the similarity between the targeted and implemented forms of the curriculum (Bay et al., 2017), and implementing official curricula written and adhering to the criteria determined during the implementation phase of the curriculum (Arslan-Çelik & Gelmez-Burakgazi, 2021). When the definitions are examined, it is important to determine the curriculum fidelity in terms of the extent to which a designed curriculum is implemented, especially by teachers, by adhering to the original, how much the targeted outputs of the curriculum are achieved, which problems are encountered during implementation, and thus to examine whether the curriculum is implemented effectively (Karakuyu and Oğuz, 2021). By examining the curriculum's fidelity, it can be ensured that the results can be determined at what level the curriculum outcomes and expectations of the designed curriculum are met (Dhillon et al., 2015), and information can be provided on how successfully the possible reasons for this situation can be explained at the point of failure (Bümen et al., 2014). Therefore, determining curriculum fidelity is important in determining whether the curriculum has achieved its purpose and receives feedback about the curriculum.

Many factors affect curriculum implementation. Fullan (2007) categorized the factors affecting the operation of the curriculum in the field as characteristics of change, regional/institutional factors, and external factors. Dusenbury et al. (2003) categorized the factors affecting curriculum fidelity as teacher characteristics, curriculum characteristics, institutional characteristics and teacher education. Bümen, et al. (2014) in their study titled "Factors Affecting Curriculum Fidelity in Turkey", it is seen that *teacher education, teacher characteristics, curriculum characteristics, institutional* characteristics*, regional-social-economic-cultural* characteristics*, student characteristics, centralized education system, high-stakes tests and teacher training* are the factors affecting curriculum fidelity. One of the most important factors affecting curriculum fidelity is the regional and institutional characteristics (Bümen et al., 2003; Bümen et al., 2014). Conducting this study with teachers working in different school types (primary, secondary, and high schools) in a rural area is very important in terms of examining the effect of regional and institutional characteristics on curriculum fidelity. Accordingly, the main purpose of this study is to examine in depth the factors affecting the fidelity of teachers working in different types of schools in a rural settlement to the curriculum they implement. In this study, the research questions were formulated in line with the factors put forward by Bümen et al. (2014) on the grounds that the factors affecting the curriculum in Turkey were defined by examining the studies conducted in the national literature:

- How do curriculum characteristics affect the fidelity of teachers working in different types of schools in rural settlements to the curriculum they implement?
- How do institutional characteristics affect the fidelity of teachers working in different types of schools in rural settlements to the curriculum they implement?

- How do student characteristics affect the fidelity of teachers working in different types of schools in rural settlements to the curriculum they implement?
- How do regional, social, economic, and cultural characteristics affect the fidelity of teachers working in different types of schools in rural settlements to the curriculum they implement?
- How does a centralized education system affect the fidelity of teachers working in different types of schools in a rural settlement to the curriculum they implement?
- How do high-stakes tests affect the fidelity of teachers working in different types of schools in rural settlements to the curriculum they implement?
- How does the pre-service and in-service training they receive affect the fidelity of teachers working in different types of schools in a rural settlement to the curriculum they implement?

2 Method

2.1 Research Design

The aim of this study is to examine the factors affecting the fidelity of teachers working in different types of schools in a rural settlement to the curriculum they implement. Accordingly, a case study design and qualitative research method were used in this study. Case studies are a type of study in which one or more events, situations, individuals, social groups, systems, or interconnected systems are examined in depth (Ocak, 2019). Case studies are conducted to examine and understand the event or phenomenon in depth in its own field, and to describe and evaluate the research questions addressed within the scope of the research (Yin, 2017). The unit of analysis in this research was the factors affecting teachers' fidelity to the curriculum. Since a single unit of analysis was considered in the study, a holistic single-case study was used.

2.2 Participants

The research was conducted in the fall semester of the 2022-2023 academic year, in a rural district in a province located in the Northern Anatolia region of Türkiye, with teachers working in primary, secondary, and high school types in public schools affiliated with the Ministry of National Education. Participants were selected using a convenient sampling method. According to Creswell (2013), in the convenience sampling method, the researcher selected participants because they were willing to participate and suitable for the study. According to Fraenkel and Wallen (1990), convenience sampling used in the qualitative research process includes groups of people who are suitable, accessible, and ready for the study. In line with these explanations, teachers in schools who were willing to work were identified using a convenient sampling method. These teachers were interviewed, and the problem situation was examined in depth. Personal information about the participants is presented in Table 1.

Table 1 Demographic characteristics of the teachers

	T1	**T2**	**T3**	**T4**	**T5**
Gender	Male	Male	Female	Male	Male
Graduation	Faculty of sport sciences	Faculty of education	Faculty of education	Faculty of education	Faculty of sciences and literature
Age	32	29	29	26	32
Seniority year	3 years	7 years	6 years	3 years	9 years
Profession	Pysical education and sports teacher	Turkish teacher	Primary teacher	Special education teacher	Geography teacher

2.3 Measures and procedure

The data for the study were obtained using a semi-structured interview form prepared by the researchers. While preparing this interview form, a literature review was conducted regarding the factors affecting curriculum fidelity, in line with the main problem addressed in the research. Interview questions were created based on the sub-factors of curriculum characteristics, institutional characteristics, regional-social-economic-cultural characteristics, student characteristics, centralized education systems, and high-stakes tests from the framework created by Bümen et al. (2014) regarding the factors affecting curriculum fidelity in Turkey. The interview form was examined by two faculty members who were experts in the field of Curriculum and Instruction. The interview questions were finalized in line with expert opinions. The final version of the interview form was piloted by interviewing a teacher who was not among the study participants. After the interview, the interview form was finalized by editing the parts that were not understood. In the interview form, how teachers evaluated the implementation of the curriculum, how they evaluated the educational philosophy of the curriculum, its goals, the content, the learning-teaching process, the measurement and evaluation processes, how they evaluated the conditions of the school in which they worked, and so on.

The questions in the interview form, which were developed by the researchers and finalized after piloting, were asked to the teachers through face-to-face interviews with the teachers who were among the participants of the study. During the interviews, with the permission of all teachers, voice recordings were made, and data were collected in this way. The interviews lasted an average of 30 minutes and were held with the teachers at the time and place determined by the teachers in their free time.

2.4 Data analysis

In the research process, the collected data were analyzed based on thematic analysis. First, the voice recordings received from the teachers by the researchers were transcribed in Microsoft Word. Each researcher then read the data separately several times, and themes were created. Subsequently, categories and codes were found based on the teachers' discourses. At the end of the coding process, which was carried out separately by both researchers, the researchers came together and compared themes, categories, and codes. At the end of the discussions, the themes, categories, and codes were combined, and the coding process was completed.

2.5 Validity, reliability, and ethical considerations

In qualitative research, evaluations are made in terms of credibility, transferability, consistency, and confirmability methods to ensure validity and reliability (Yıldırım & Şimşek, 2021). In this context, long-term interactions with the research participants ensured credibility in the context of internal validity. In addition, including the purposive sampling method in the study and including teachers' discourses in detail in the findings of the study ensured the transferability of the study. The data collected in the study were coded separately by two researchers and then brought together through discussion to ensure the consistency and confirmability of the study.

3 Findings

3.1 Curriculum characteristics

In the research, in the context of “curriculum characteristics”, one of the factors affecting teachers' fidelity to the curriculum, teachers were asked, “How do curriculum characteristics affect the fidelity of teachers working in different types of schools in a rural settlement to the curriculum

they apply?" Based on the research question, seven interview questions and ten sub-interview questions were asked. The answers were analyzed, and themes, categories, sub-categories, and codes were provided in detail. As a result of the analyzes made under the title of " curriculum characteristics," which is one of the factors affecting teachers' fidelity to the curriculum, the categories of "objectives" in Table 2, "content" in Table 3, "learning-teaching process" in Table 4 and "measurement and evaulation process" in Table 5 were reached.

Table 2 Curriculum characteristics affecting curriculum fidelity: Objectives

Theme	Category	Subcategory	Codes
Curriculum characteristics	Objectives	Suitability to student characteristics	Student abilities are not taken into account in the currculum – T1 Not taking into account the developmental characteristics of the student- T2/T3 Not taking into account the characteristics of the geographical region where student live- T2 Individual differences are not taken in to account- T4 Not taking into account the differences in students' intelligence level, interests, competencies, and readiness levels- T5
		Suitability to student learning level	Not taking into account the developmental levels of students- T1/T2 Obejctives are below or above students' grade level- T1/T2/T3 Individual differences are not taken into account- T4
		Applicability of objectives	Inadequacy of course hours-T1 The objectives are not appropriate fort he grade levels- T2 Regional conditions are not taken into account- T3/T5 The duration of the objectives is sufficient-T4
		Objective-content alignment	Objectives and content are compatible with each other- T1/T2/T3/T4 Inadequacy of environmental characreristics of regional conditions- T5
		Achievability of objectives	Inadequacy of course hours - T1 The effect of individual differences - T2/T4/T5 Regional conditions are not suitable - T3

In the context of the categories reached, subcategories of "appropriateness to student characteristics, suitability to student learning level, applicability of objectives, objectives-content compatibility and accessibility of objectives" were reached under the "objectives" category.

All the teachers expressed their opinions in the context of "appropriateness to student characteristics." Under this subcategory, it has been concluded that teachers emphasize that student abilities are not taken into account in the curriculum; the developmental characteristics of the student are not taken into account; the characteristics of the geographical region where the students live are not taken into account; individual differences are not taken into account; and the differences in the students' intelligence level, interests, competencies, and readiness levels are not taken into account. In this context, the sample teacher discourses were as follows:

> "…student abilities are also different, they do not overlap. "The objectives are very nice on paper, but unfortunately it is not possible to implement them." T1
>
> "To be honest, some things remain in the curriculum. The student is not satisfied with its applicability." T3

> "I cannot say that it meets the student characteristics to a great extent. The developmental characteristics of the students and the geography they live in are not very effective in helping us achieve these objectives. Of course, we, as teachers, try to give that objective according to the student's level." T2

> "…there are many individual differences. "Due to individual differences, it seems impossible to achieve an objective, for example, 100 percent of all students." T4

> "Of course, I cannot make a standard comment on this issue because each student's intelligence level, interests, competencies and readiness levels are very different." T5

Four of the teachers (T1, T2, T3, and T4) expressed opinions in the context of "appropriateness to the student level'. Under this subcategory, it was concluded that teachers emphasized not taking students' development levels into consideration, objectives being below or above grade levels, and not considering individual differences. In this context, the sample teacher discourses were as follows:

> "...the child comes for four years only by playing games in physical education class, and then when he gets to the physical education teachers in the secondary school, it is naturally not possible to bring him/her to a level where he/she can do any of these sports." T1

> Therefore, in this respect, some of the objectives are not those that the student can understand, but are at that age level. I think maybe after a year or two, that subject can be taught better, that subject can be taught better." T2

> "In special education, we take the part of the curriculum that is suitable for the student as a basis. For example, while in the normal general education class, the 4th grade is directly based on the 4th grade curriculum, in special education there are cases where we take a year below for a 4th grade or 3rd grade student, or a year above if the student is in a better situation." T4

All of the teachers expressed their opinions in the context of "applicability of the objectives." Under this subcategory, while it was concluded that four teachers (T1, T2, T3, and T5) negatively emphasized the inadequacy of lesson hours, the objectives were not appropriate to the grade levels, and there was a lack of consideration of regional conditions, it was concluded that one teacher (T4) emphasized that the objectives should be sufficient in terms of time. In this context, the sample teacher discourses were as follows:

> "It is never possible to complete these objectives properly in one academic year." T1

> "…objectives need to be evaluated. "I think it should be distributed in accordance with the next grade level and the previous grade level, that is, one semester should not be too dense and the other one should not be less dence." T2

> "It is not possible to accumulate the objectives over a full year in the region where I work. If you ask why, the winter conditions are harsh. There are very heavy snow holidays. In summer due to the hazelnut season and the interruption of the summer vacation, we have difficulty in completing the curriculum on the desired date at the desired time." T5

> "The objectives in the curriculum are at a level that can be easily implemented within a year. It is sufficient in terms of duration." T4

All teachers expressed their opinions in the context of "objective-content harmony." Under this subcategory, it was concluded that while four of the teachers (T1, T2, T3, and T4) emphasized the compatibility of the objective and content, the other teacher (T5) emphasized the inadequacy of the environmental characteristics of the regional conditions. In this context, the sample teacher discourses were as follows:

> "The objecitves are compatible with the content. I don't think there is a problem in this, we already realize this while we are teaching the lesson, while we are teaching that objective." T3

> "…conditions are not always very suitable for this. Unfortunately, especially the dominant value judgments of the rural areas where I work, the academic competence of the children and the inadequacy of their personal beliefs create an obstacle in achieving our obejctives." T5

All of the teachers expressed their opinions in the context of "accessibility of objectives". Under this subcategory, it was concluded that three of the teachers (T2, T4, and T5) emphasized the effect of individual differences, while the other teachers (T1 and T3) emphasized the inadequacy of lesson hours and the unsuitability of regional conditions. In this context, the sample teacher discourses were as follows:

> "…the student group is also very important. However, this may vary depending on the student group. If we make an evaluation based on the middle class every year, if I say something average, I think I can reach around seventy percent for my own class." T2

> "So, it is quite possible to pass on an objective to the student, but it is not possible to do this in the foreseen forty or eighty hours." T1

Table 3 Curriculum characteristics affecting curriculum fidelity: Content

Theme	Category	Subcategory	Codes
Curriculum characteristics	Content	Distribution of Subjects	Insufficiency of course hours- T1/T4 The subjects are not suitable fort he grade level- T2/T5 Equal districution of subejcts- T3
		Textbooks	Using study aid resources instead of textbooks-T1 Textbooks are not suitable for objectives-T2 Not suitable for student level- T3 Insufficient in terms of visiul and real life examples-T4/T5 Texts are not comprehensible- T5

In the context of the categories reached, subcategories of "distribution of subjects" and "textbooks" were reached under the "content" category.

All the teachers expressed their opinions in the context of "distribution of subjects." Under this subcategory, it was concluded that four of the teachers (T1, T2, T4, and T5) negatively emphasized the inadequacy of lesson hours and the subjects were not suitable for the grade level, while the other teacher (T3) positively emphasized the equal distribution of subjects. In this context, the sample teacher discourses were as follows:

> "I saw that due to the subject distribution, more course hours were given to simple objectives. I saw that some of the objectives should have been processed more and given less lesson time than they should have." T4

> "I think some grade level subject distributions are appropriate, while others have inappropriate objectives." T2

> "So the subjects are actually evenly distributed. I don't think there is a problem with the distribution of topics." T3

All of the teachers expressed their opinions in the context of "textbooks." Under this subcategory, it was concluded that teachers emphasized the use of study aid resources instead of textbooks, the textbooks not being suitable for the objectives, not being suitable for the student grade level, being insufficient in terms of visual and real-life examples, and the texts not being comprehensible. In this context, the sample teacher discourses were as follows:

"I don't have a textbook specifically for physical education class, but although it is not a textbook published by the national education system, there are physical activity cards in the form of a booklet that we use." T1

"I have never come across anything very good, to be honest, in the textbooks. When they are good, mediocre books may appear the next year. But I definitely don't think that they are sufficient in terms of achieving the objectives." T2

"I don't think textbooks are enough. I think there should be more content, more understandable content, appropriate to the level." T3

"…I think the visual parts should be increased a little more. I think it would be better if there was a form of reflection in which the student sees examples from daily life rather than based on memorization." T4

"I see a lot of inappropriate and unnecessary applications in textbooks. Therefore, I usually see text with very low perceptual distinguishability. In other words, I describe it as non-visual, with no emphasis on important places." T5

Table 4 Curriculum characteristics affecting curriculum fidelity: Learning-teaching process

Theme	Category	Subcategory	Codes
Curriculum characteristics	Learning-teaching process	Selection of teaching methods and techniques	Demonstration - T1/T5 Paired work - T1 Student-centered teaching methods and techniques- T2 Drama - T3 İndividual education - T4 Expository teaching- T5 Discovery learning - T5
		Use of instructional technologies	Not including instructional technologies-T1 Interactive board- T2/T3/T4/T5 Multimedia materials- T3/T4 Computer- T4 Tablet- T4 Educational games- T4 Virtual experiment applications-T4
		Use of teaching materials	Training equipment-T1 Not including teaching materials- T2 Presentations- T3 Concrete educational materials-T4 Models and samples-T5 Atlases- T5

In the context of the categories reached, the subcategories of "selection of teaching methods and techniques, use of teaching technologies and use of teaching materials" were reached under the "learning-teaching process" category.

All of the teachers expressed their opinions in the context of "selection of teaching methods and techniques." Under this subcategory, it was concluded that teachers used demonstrations, partner work, drama, individual education, demonstrations, teaching through discovery, and student-centered teaching strategies, methods, and techniques. In this context, the sample teacher discourses were as follows:

"The teaching method and technique we use most frequently for physical education class is the demonstration technique. Because since the student is going to exhibit a physical skill, he/she needs to learn it perfectly by seeing the correct way." T1

"As I said, we are trying to implement a student-centered constructivist education model here." T2

> "I try to do different activities such as how to make the letter feel, how the student can pronounce the letter better, presentations from different materials, as I said the drama method." T3

> "…when I think that, for example, two of the students will learn and one of them will fall behind in that teaching method or does not appeal to him, I teach with individual education, not with a group." T4

> "Since I am a geography teacher, I use the demonstration method because it is a field that appeals to the eye visually and there are many visual stimuli. I also used the teaching method through a presentation to convey general information. I also use the discovery teaching method, depending on the students' capacity and interests, if the conditions allow." T5

All the teachers expressed their opinions in the context of "use of instructional technologies." Under this subcategory, it was concluded that one of the teachers (T1) did not include teaching technologies, whereas the other teachers (T2, T3, T4, and T5) used interactive boards, multimedia materials, computers, tablets, educational games, and virtual experiment applications in the learning-teaching process. In this context, the sample teacher discourses were as follows:

> "We use more concrete sports equipment in physical education classes than instructional technologies." T1

> "Technology simply our interactive whiteboards. I think that these are effective in the lesson process. Now, many of our teacher friends and I try to use the blackboard effectively during the lesson. Interactive events occur in particular. The student likes this very much. Children like to go up the board, touch the board, and perform an activity. I also try to use it frequently in classes, activity-centered." T2

> "We use visual and audio technology tools. I generally use audio and visual resources." T3

> "Smart boards, computers, tablets or experimental instruments attract the student's attention more, thus creating a more permanent learning environment in the course. We definitely try to include these in every achievement." T4

All the teachers expressed their opinions in the context of "use of teaching materials." Under this subcategory, it was concluded that one of the teachers (T2) did not include teaching materials, whereas the other teachers (T1, T3, T4, and T5) used training materials, presentations, concrete educational materials, models and samples, and atlases in the learning-teaching process. In this context, the sample teacher discourses were as follows:

> "…since our lessons are often a training session, we use various training materials. In other words, our materials are the classic training materials that most of us know: balls, caps, funnels, bowls, slalom sets, coordination sticks, etc." T1

> "…an educational material that we can give concretely to the student, other than writing, that is, letters, also provides very important and permanent learning." T4

> "The shape of the world, the daily movement of the earth, the results of the world… In this, we use models and samples, we benefit from the interactive board, we benefit from our students' atlases, for example. " T5

Table 5 Curriculum characteristics affecting curriculum fidelity: Measurement and evaulation process

Theme	Category	Subcategory	Codes
Curriculum characteristics	Measurement and evaulation process	Use of measurement and evaulation tools	Rubrics - T1 Written exam-T2/T3/T4/T5 Multiple choice tests- T2/T5 True and false-T2/T3/T5 Matching tests- T2/T5 Structured grid- T2 Question and answer method- T3 Evaulation the learning process- T4

In the context of the categories reached, the "use of measurement and evaluation tools" subcategory was reached under the "measurement and evaluation process" category.

All the teachers expressed their opinions in the context of "use of measurement and evaluation tools." Under this subcategory, it was concluded that teachers made evaluations in the form of rubrics, written examinations, multiple-choice tests, true-false, matching, structured grids, dictation studies, questions and answers, and evaluations of the learning process. In this context, the sample teacher discourses were as follows:

> "…we prefer the rubric in our measurement and evaluation, in line with the spirit of measurement and evaluation of the physical education course that we use all the time." T1
>
> "Of course, we use different measurement tools such as multiple choice, open-ended questions, true-wrong, matching, and structured grid, not just in one direction." T2
>
> "I finished the letter and I am practicing dictation. Since we switched to a written exam mentality in the 4th year, which I do not think they measure very much, we have a document in our hands. "We measure how much we have learned, questions and answers, right and wrong answers, again with written sources." S3
>
> "For this reason, we evaluate the general process and take into account the student's situation by evaluating the whole process rather than the product." S4
>
> "...I pay attention to this in order to eliminate the chance factor and increase content validity by using different methods such as written examination, multiple choice, true-false, matching in my 9-10-11-12 exam, regardless of the grade level in my exam." S5

3.2 Institutional characteristics

In the research, "institutional characteristics," one of the factors affecting teachers' fidelity to the curriculum, were examined. In this context, two interview questions were asked of the teachers based on the research question, "How do institutional characteristics affect the fidelity of teachers working in different types of schools in rural settlements to th, 'curriculum they implement?". The answers were analyzed, and the themes, categories, and codes are given in detail in Table 6.

Table 6 Institutional charact'ristics affecting curriculum fidelity

Theme	Category	Codes
Institutional characteristics	School conditions	Environmental conditions-T1/T4 Lack of physical conditions- T1/T2/T5 Transportation- T3
	The role of teachers and school administrators	Demoncratic school environment-T1/T2/T4/T5 Collaboration with colleagues- T2/T3/T5

The analysis conducted under the title of "institutional characteristics, which is one of the factors affecting teachers' fidelity to the curriculum, the categories of school conditions, and the role of teachers and school administrators.

All teachers expressed their opinions in the context of "school conditions." In this category, it was concluded that teachers emphasized environmental conditions, a lack of physical conditions, and transportation. In this context, the sample teacher discourses were as follows:

> "…environmental, seasonal factors and geographical conditions also disrupt our physical education lessons. Since I teach in a busy geography where winters are very intense and long, our school does not have a hall, so we have to teach our lessons in the classroom when the weather is bad." T1
>
> "…there are some deficiencies in the structure outside the school's environment outside the school where the student can learn socially from the environment of travel and observation. There are points where it is difficult to teach the subjects we have learned outside of school

> and the achievements that appeal to people outside of school because our school is a village school. This is because there are not many places to do social activities or take people around." T4
>
> "First of all, the physical structure of our school is such that it negatively affects the general state of arousal. In other words, the school's lack of lightining in the classrooms, the fact that the classrooms are not clean enough, the lack of a gymnasium for children to discharge in their free time, and the lack of an area where children can spend their free time negatively affect both our general state of arousal and children's belonging to the school. Therefore, this situation also negatively affects learning." T5

All the teachers expressed their opinions in the context of "the role of teachers and school administrators." Under this category, it was concluded that teachers emphasized a democratic school environment and collaboration with colleagues. In this context, the sample teacher discourses were as follows:

> "In general, I am aware of the awareness of my teachers and school administrators both in the implementation of the curriculum and in my course, and I am happy about this." T1
>
> "We are in contact with our chemistry teacher when we come across a topic related to rocks, for example. For example, we are in communication with our biology teacher on 11th grade issues such as population, ecosystem and habitat, and we base an intercollegiate and interdisciplinary approach." T5
>
> "For example, if my group were in our school right now, I would have the opportunity to see something different. I already make an extra effort to see something different, I can talk as much as I can at home or with my friends in different cities…" T3

3.3 Student characteristics

In this part of the study, "student characteristics", one of the factors affecting teachers' fidelity to the curriculum, were examined. In this context, two interview questions were asked to the teachers based on the research question "How do student characteristics affect the fidelity of teachers ofrking in different types of schools in rural, settlements to the curriculum they implement?". The answers were analyzed, and the themes, categories, and codes are provided in detail in Table 7.

Table 7 Student characteristics affecting curriculum fidelity

Theme	Category	Codes
Student characteristics	Student characteristics	Student abilities- T1 Individual differences-T1/T3 Deficiency in the developmental characteristics of students living in rural areas-T2 Students' learning level- T2/T3/T4/T5 Interest of students' families-T3 Focusing problem- T37T5 Students' attitude towards the lesson-T4-T5 Student interests-T4 Probelm behaviors that students have-T4 Financial inadequacies arising from rural areas (starvation and lack of nutrition)- T5

All teachers expressed their opinions in the context of "student characteristics." In this category, teachers emphasized student abilities, individual differences, deficiencies in the developmental characteristics of students living in rural areas, the student's learning level, the interest of students' families, the problem of focusing, the students' attitudes towards the lesson, student interests, problem behaviors of students, the financial inadequacies arising from rural areas, and the

nutritional problems of students. It was concluded that they emphasized that it causes In this context, the sample teacher discourses were as follows:

> "…in the end, talents come into play somewhere. In this regard, I cannot say that our students are very talented in our school, especially in group sports and ball sports." T1

> "…there are differences arising from individual student differences. How it affects this, for example, I have a student who goes very fast, and a student who goes very slow." T3

> "Since the environment we are in is a rural environment, there may be some developmental deficiencies in students. "This causes us to experience some problems in terms of achieving gains." T2

> "…for example, one of them likes math class very much. Academically, she/he is ahead of his peers in the mathematics course. Here, the curriculum in that mathematics appeals to the student, but when, for example, the student falls one step further behind in the Turkish lesson compared to her/his friends, we need to make changes in the curriculum and adjust the achievements." T4

> "Unfortunately, since it is generally a rural area, children generally suffer from financial inadequacy. If you ask, what is the connection between financial inadequacy and learning? There are many connections between them. For example, a child does not have her own room. The child could not obtain enough heat. The children did not have sufficient resources. The child comes to school hungry, that is, they are not fed enough. When you look at these on their own, you may see them as a very small element, but when they come together, they are a factor that affects learning very negatively." T5

> "When problem behaviors are seen in our students, we see that the efficiency in lessons decreases. We are trying to prepare content to correct the problem behavior. "It causes positive and negative effects on the student and therefore on the permanence of the curriculum." T4

3.4 Regional, social, economic, and cultural characteristics

In this part of the study, "regional, social, economic, and cultural characteristics", which are among the factors affecting teachers' fidelity to the curriculum, were examined. In this context, an interview question was asked to the teachers based on the research question "How do regional, social, economic, and cultural characteristics affect the fidelity of teachers working in different types of schools in rural settlements to the curriculum they implement?". The answers were analyzed, and the themes, categories, and codes are provided in detail in Table 8.

Table 8 Regional, social, economic, and cultural characteristics affecting curriculum fidelity

Theme	Category	Codes
Regional, social, economic and cultural characteristics	Regional	The effect of geographical conditions-T1/T3/T5
	Social	Low social development of students - T2/T5
	Family Structure	Lower socio-economic status of families- T1/T2/T4
		Cultural characteristics of families- T1/T2
		Low education level of families - T1
		Lack of famil interests - T1/T2/T3
		Lack of communication within the family - T4

As a result of the analyses made under the title of "regional, social, economic and cultural characteristics", which is one of the factors affecting teachers' fidelity to the curriculum, the categories "regional, social and family structure" were reached.

Three teachers (T1, T3, and T5) expressed opinions in the "regional" context. In this category, it was concluded that teachers emphasized the effects of geographical conditions. In this context, the sample teacher discourses were as follows:

> "The school where I work has harsh winter conditions that make physical education lessons difficult." T1

> "Education is disrupted a lot due to snow vacations. Therefore, it is a big problem in terms of not being able to complete the subjects in the curriculum and children's getting cold from school." T5

Two of the teachers (T2 and T5) expressed their opinions in the "social" context. In this category, it was concluded that teachers emphasized the low social development of students. In this context, the sample teacher discourse was as follows:

> "As I said, we are in a rural area. We need to support students more. We need to support students more than students in the central location. Students had less experience than students at the center. Of course, we must organize the curriculum within this framework. We cannot provide the curriculum to the students in its current form. The region I live in has difficulties due to its cultural characteristics and economic structure." T2

Four teachers (T1, T2, T3, and T4) expressed opinions in the context of "family structure." In this category, it was concluded that teachers emphasized the low socioeconomic level of the families, the cultural characteristics of the families, the low education level of the families, the lack of family interest, and the lack of communication within the family. In this context, the sample teacher discourses were as follows:

> " Since students are not sufficiently supported at home and are not prepared for education, it is as if our education restarts every morning. This situation places a lot of strain on both students and teachers. So, when we put all these together, these conditions in the region negatively affect the implementation of the curriculum." T1

> "When we collectively evaluate the situation of the student's parents and the people in the family where the student first starts learning from many regional, economic, social and emotional aspects, if there are problems in the family, parents at home, the people to whom this will directly reflect are the children, our students." T4

> "...the time he/she devotes to his/her child decreases a lot, when the time he/she allocates to his/her child decreases, learning is delayed, and as learning is delayed, the curriculum is also postponed." T3

> "Families have difficulties in taking care of students. Fathers are usually outside of work. Students have these limitations. This was reflected in the curriculum. We need to shape the curriculum accordingly." T2

3.5 Centralized education system

In this part of the research, the "centralized education system," one of the factors affecting teachers' fidelity to the curriculum, was examined. In this context, an interview question was asked of the teachers based on the research question, "How does a centralized education system affect the fidelity of teachers working in different types of schools in a rural settlement to the curriculum they implement?". The answers were analyzed, and the themes, categories, and codes are given in detail in Table 9.

Table 9 Centralized education system affecting curriculum fidelity

Theme	Category	Codes
Centralized education system	Preparation of regional curriculum	Geographical conditions- T1/T2/T3/T5 Student profile- T1 Socio-economic status of the family- T1/T3 The suitability of the physical characteristics of the school to the lessons and curricula- T1 Preparation of regional curriculum- T2/T3/T4 Communication within the family- T3

		The suitability of the environmental characteristics of the school to the lessons and curricula- T+/T5
	Being a centralized curriculum	Adhering to the framwork curriculum- The prominence of the functional curriculum being implemented- T3

As a result of the analyses made under the title of "centralist education system," which is one of the factors affecting teachers' fidelity to the curriculum, the categories of "preparation of regional curriculum and being a centralized curriculum.

All of the teachers expressed their opinions in the context of "preparation of the regional curriculum". Under this category, it was concluded that teachers emphasized geographical conditions, student profile, socioeconomic status of the family, suitability of the physical characteristics of the school to the lessons and curricula, preparation of regional curriculum, communication within the family, and suitability of the environmental characteristics of the school to the lessons and curricula. In this context, the sample teacher discourses were as follows:

> "I think regional curriculum should be prepared rather than centralized curriculum. Okay, let us have a basic framework, but I think we need to expand it with subheadings. Regional differences are also very effective in central examinations. I think that students should be evaluated according to region, and curricula should be prepared according to region. I think it should be left to the provinces a little more. "There should be a central roof, but we need to diversify the subheadings." T2

> "Therefore, the curriculum can be completely adapted to the region and the student profile. This can be economical. geographical conditions can be taken into account, the socioeconomic status of the parents can be taken into account, and the suitability of the school for this course can be taken into account. In other words, the curriculum can be programmed in physical education classes based on many variables." T1

> "For example, the conditions in Ankara are different from those in Hakkari. The natural structures of Hakkari and Izmir are very different. The geographical, climatic, and cultural conditions in Hakkari are different from those in Izmir. The natural conditions and priorities are not the same. Therefore, because there are so many differences, this heterogeneous situation in education makes centralization very dysfunctional." T5

One of the teachers (T3) expressed an opinion in the context of "being a centralized curriculum". In this category, it was concluded that the teacher emphasized fidelity to the framework curriculum and highlighted the curriculum being implemented. In this context, the sample teacher discourse was as follows:

> "…so I'm actually doing how I can apply this curriculum to this region. So, I am stretching, I have to stretch because the centralized curriculum does not work in your village. It does not work in the region in which you live Now, I do not have the chance to implement the curriculum at the same level as the teacher at the center. Family problems, family conditions, and the physical condition of the school all affect this. It affects negatively. This is what most teachers should do. Now, it is like this; we should not be standardized anyway. That's why we exist. We must shape this according to our own. Of course, without going beyond this framework." T3

3.6 High-stakes tests

In this part of the research, "high-stakes tests," one of the factors affecting teachers' fidelity the curriculum, were examined. In this context, an interview question was asked of the teachers based on the research question, "How do high-stakes tests affect the fidelity of teachers working in different types of schools in a rural settlement to the curriculum they implement?". The answers were analyzed, and the themes, categories, and codes are given in detail in Table 10.

Table 10 High-stakes tests affecting curriculum fidelity

Theme	Category	Codes
High-stakes tests	Preparation of exams	Incompatibility of objectives and lesson hours in the curriculum- T1 Preparation of exams- T2/T3/T4 Directing to objectives that will ensure success in exams- T2/T4/T5 Not supporting students' social and emotional development- T4

As a result of the analyses made under the title of "high-stakes tests," which is one of the factors affecting teachers' fidelity to the curriculum, the "preparation of exams" category was reached.

All teachers expressed their opinions in the context of "preparation of exams." Under this category, it was concluded that teachers emphasized the incompatibility of the objectives and lesson hours in the curriculum, preparation of exams, directing students to objectives that would ensure success in exams, and not supporting the social and emotional development of the student. In this context, the sample teacher discourses were as follows:

> "…the curriculum is too much in terms of subject matter. It is almost a utopia to be able to complete all of these in one academic period, but they all offer space, so if we can complete this, the student will also be successful in these aptitude tests." T1
>
> "Unfortunately, the exam determines the fate of the student, and, unfortunately, we rush our students to train them for this. I mean, I have to teach why a first-grade student of mine is learning to fill in optics. If a second-year student is in, this child's place is not in optical coding or he should not be doing optical coding." T3
>
> "… this logic can also occur in students. Are these topics included in the exams? Sometimes thoughts such as "If there is, let us work more on this subject, there is no need to work on a subject that does not exist. This makes the implementation of the curriculum difficult and causes some achievements to be missed in the curriculum. I think the reality of exams negatively affects the curricula in this respect. It is on the way to gaining all the objectives in the curriculum." T2

3.7 Teacher Training

In this part of the study, "teacher training", one of the factors affecting teachers' fidelity to the curriculum, was examined. In this context, two interview questions were asked to the teachers based on the research question, "How do the pre-service and in-service trainings affect the fidelity of teachers working in different types of schools in a rural settlement to the curriculum they implement?". The answers were analyzed, and the themes, categories, and codes are given in detail in Table 11.

Table 11 Teacher training affecting curriculum fidelity

Theme	Category	Codes
Teacher Training	Training to the Implementation Curriculum	Courses taken in undergraduate education- T1/T2/T3/T4/T5 Master's degree education- T2 In-service training- T3/T5 Individual effort- T2/T5
	Contribution of the Trainings to the Implementation Curriculum	Positive contribution to the teacher - T1/T2/T3/T4/T5 Positive contribution to the student- T3/T4/T5

As a result of the analyses made under the title of "teacher training," which is one of the factors affecting teachers' fidelity to the curriculum, the categories "training to the implementation

curriculum, and the contribution of the training to implementation of the curriculum.

All teachers expressed their opinions in the context of “” training in the implementation curriculum. “ In this category, it was concluded that teachers emphasized the courses taken in undergraduate education, master’s degree education, in-service training, and individual efforts. In this context, the sample teacher discourses were as follows:

> “Activities related to teaching a lesson. I took it during the November seminar. Concepts and numbers remain abstract when it comes to teaching mathematics. This was the last training I received, such as how to explain things more effectively.” T3

> “So, if you mean apart from the training at the university, of course, I am trying to improve myself and my equipment through the seminars given in the form of distance education at “Teacher IT Network, “if they are relevant to my field or course. Apart from that, as I said, I basically try not to lose my student status.” T5

> “I also have a master’s degree. I have a master’s degree; let us not skip that. “We took a short break there, but we will continue where we left off.” T2

All teachers expressed their opinions in the context of “ training to implement the curriculum”. Under this category, it was concluded that teachers emphasized the positive contributions of the training received to teachers and students. In this context, the sample teacher discourses were as follows:

> “I follow the curricula regularly and follow the developments regularly. We keep track of what has been added or removed from the objectives and, of course, we should. Of course, there are no courses directly related to the curriculum, but there are courses that require us to follow the curriculum indirectly. I think it is useful in this respect.” T2

> “Since the training we receive is multifaceted, it shows us what path we can follow when we encounter students in these fields, how we can adapt the training we receive to the student in a mixed way, and how we can create an original method and technique ourselves, depending on the student’s situation, if necessary. It is useful in this respect.” T4

4 Conclusion and discussion

In this study, the factors affecting the fidelity of teachers working in different types of schools in a rural settlement in a province in the Northern Anatolia region of Turkey in the fall semester of the 2022-2023 academic year were examined in depth. Accordingly, as a result of the research, teachers expressed opinions about how curriculum characteristics, institutional characteristics, student characteristics, regional, social, economic, and cultural characteristics, centralized education systems, high-stakes tests, and teacher training affect their fidelity to the curriculum they implement in their lessons.

In the theme of “Curriculum Characteristics,” which is one of the factors affecting teachers’ fidelity to the curriculum, teachers were asked to question how the objectives, content, learning-teaching process, and measurement and evaluation process affect the fidelity of the curriculum. When teachers’ opinions about how the objectives in the curriculum affect its applicability were examined, they stated that the objectives were not appropriate for the student characteristics and student learning level. At this point, teachers stated that students’ individual differences and developmental characteristics were not considered in the objectives. In addition, teachers stated that not considering regional and environmental conditions, along with other features mentioned in terms of accessibility and applicability of the objectives, affected their fidelity to the curriculum.

Teachers evaluated the distribution of subjects and textbooks in the content category, which is another category within the curriculum characteristic theme. In the context of the distribution of

subjects, they stated that the inadequacy of course hours, the subjects not being suitable for the grade levels, and the unequal distribution of subjects negatively affected fidelity to the curriculum. In addition, in the context of textbooks, they stated that the textbooks are not suitable for the objectives and student grade level, the books are not sufficiently supported with visual and real-life examples, and the texts in the books are not understandable, negatively affecting fidelity to the curriculum.

Opinions of teachers in the "learning-teaching process" category, another category within the theme of curriculum characteristics, were taken regarding the teaching methods and techniques they chose in their courses, as well as the teaching technologies and teaching materials. In the context of the learning-teaching process, the selection of teaching methods and techniques from the sub-categories directly affects the fidelity of the curriculum. Dane and Schneider (1998), Dusenbury et al. (2003), and O'Donnell (2008), in the context of the quality of implementation, one of the dimensions for measuring fidelity to the curriculum, the choice of methods and techniques used by practitioners, and the way they are implemented affect curriculum fidelity. Teachers include demonstration, pair work, drama, individual education, teaching through presentation and discovery teaching, and student-centered teaching strategies, methods, and techniques in their lessons while implementing the curriculum. Teachers benefit from instructional technologies and materials while implementing the curriculum. It was concluded that the instructional technology most frequently used by teachers is the interactive board. In addition, teachers rarely use computers, tablets, educational games, or visual and audio multimedia materials in their lessons. One of the most important factors affecting the fidelity of a curriculum is the use of materials. According to Gresham et al. (2000), if new or important resource/material is required during the implementation of the curriculum, it can increase the fidelity of the curriculum. The results showed that teachers benefit from teaching materials that are suitable for their objectives in the curriculum they implement. When the relevant curriculum is examined on the basis of teachers' branches (MoNE, 2018), it is seen that they express their opinions that they use the teaching materials prescribed in these curricula in relevant lessons.

The last category discussed in the theme of curriculum characteristics was the measurement and evaluation process. In this regard, the measurement and evaluation tools teachers used were in the sub-category of the use of measurement and evaluation tools. Some teachers frequently use written examinations, true-false, matching, and multiple-choice tests in their lessons. Therefore, the teachers who were the participants of this study mostly used traditional measurement tools, and only one teacher stated that he used the structured grid technique, one of the complementary measurement tools provided by the current curriculum. When the explanations of MoNE (2018) regarding the understanding of measurement and evaluation in the curriculum are examined, it is stated that a measurement and evaluation structure should be created in which teachers' development of students in the learning-teaching process is monitored during the implementation of the curriculum, and the active participation of teachers and students is ensured. From this point of view, it can be seen that research participants mostly benefit from traditional measurement tools instead of complementary measurement tools. A similar result was obtained in the research conducted by Dikbayır and Bümen (2016). The results of the relevant research have concluded that teachers almost never make use of measurement tools such as performance, project assignments, peer, and self-assessment, and that they think of the nature and application processes of these measurement tools as if they were some other traditional measurement tools.

The other theme discussed in the research is "institutional characteristics". In this context, it is

seen that teachers state that the conditions of the school and the roles of teachers and administrators affect fidelity to the curriculum. Dusenbury et al. (2003) state that the importance of school culture, the effective leadership of administrators, the opportunities and support provided to school staff by administrators, and the importance of the morale level of the staff affect fidelity to the curriculum. When examined in the context of school conditions, it was observed that teachers stated that environmental conditions (weather conditions and social activities), lack of physical conditions in the school, and transportation problems have a negative impact on fidelity to the curriculum. In the context of the roles of teachers and administrators, it has been concluded that a democratic environment in schools and teachers working in cooperation with other colleagues positively affects curriculum fidelity. However, it is also the result that teachers experience deficiencies in cooperation with their colleagues. At this point, it is important for teachers to communicate effectively with each other, school administration and school staff within the school, in accordance with the school culture (Dusenbury et al., 2003). When the study is examined in this context, it is concluded that one of the important factors affecting fildelity in the curriculum is communication between administrators and teachers in the context of institutional characteristics. In addition, in the study conducted by Bay et al. (2017), in line with the opinions of the teachers, it was concluded that the school-environment factor was emphasized and management implementation factors affected curriculum fidelity.

In Bümen et al.'s (2014) study, it was stated that student characteristics affect curriculum fidelity. When teachers' opinions about fidelity to the curriculum are examined in the "Student characteristics" theme of the research, teachers stated that student abilities, individual differences, deficiencies in the developmental characteristics of students living in rural areas, students' learning level, parents' indifference, students' concentration problems, their attitudes towards the lesson, their interests and problematic behaviors, and financial inadequacies arising from rural areas have a negative impact on fidelity to the curriculum. Similar research findings were reported by Bay, et al. (2017) and Gürbüz (2020) were also obtained in the research results. In Gürbüz's (2020) study, which examined music teachers' fidelity to the curriculum, it was concluded that students' interest levels were quite effective in the implementation phase of the curriculum. Similarly, Bay et al. (2017) found that factors such as inadequacies in students' level of readiness, their lack of interest in the lesson and school, individual differences, and students' lack of studying outside of school affected teachers' fidelity to the curriculum.

Teachers stated that geographical conditions, family structure, and students' poor social development affected their fidelity to the curriculum. In particular, it was observed that teachers expressed more opinions about the fact that low socioeconomic level families, cultural characteristics of families, low education level of families, lack of communication within the family, and lack of interest in families negatively affect fidelity to the curriculum. Bümen et al. (2014) stated that the differentiation of socio-economic and cultural characteristics according to geographical regions in Turkey will affect teachers' fidelity to the curriculum. From this point of view, the socioeconomic and sociocultural characteristics of students and families in rural areas explain the reason for the negative effect on curriculum fidelity.

Teachers expressed their opinions in favor of preparing regional curriculum under the theme of "centralized education system" and adhering to the centralized curriculum. Teachers emphasized that geographical conditions, student profile, socioeconomic level of the family, suitability of the school's physical characteristics to the lesson and curriculum, communication within the family, and suitability of the school's environmental characteristics to the lesson and curriculum cause

problems in adhering to the centralized curriculum and the necessity of preparing a regional curriculum. Yüksel (1998) described it as a fundamental problem in countries with a centralized education system in which the curriculum fails to meet the needs and expectations of geographical regions, students, and parents, and that the curriculum does not comply with the conditions of the region. This situation causes the expected results of the curriculum designed according to Bümen et al. (2014) to not be achieved. Therefore, it can be said that the available research results support these statements.

When teachers' opinions about "high-stakes tests," one of the factors affecting fidelity to the curriculum, are examined, the process of preparing students for the exam directly and negatively affects fidelity to the curriculum. In this regard, when fidelity to the curriculum was examined, it was concluded that exam preparation activities led to the neglect of most of the curriculum objectives. Teachers direct students towards objectives that will ensure success in exams. This result obtained from the research was reported by Yaşar (2012) and Bümen et al. (2014), who explained that the expectations and demands of parents and students cause teachers to focus on exam-oriented objectives. This situation, which arises especially in line with the expectations of the students, causes teachers to focus on exam-oriented subjects in the curriculum and therefore reveals that they neglect some subjects in the curriculum. Therefore, this may indicate that the desired results were not achieved in the outputs of the designed curriculum.

One of the important factors affecting fidelity to the curriculum and the last factor discussed in the research is "teacher training." According to Fullan (2007), the training that teachers receive regarding the implementation processes of the curriculum is an important part of the successful implementation of the curriculum, and therefore, for the curriculum to achieve the expected results. Teachers state that what they learned in undergraduate education, graduate education, in-service training, and through their individual efforts, positively affects their fidelity to the curriculum. In this direction, it was concluded that the teachers also stated that these trainings contributed positively to both students and teachers. Therefore, training that teachers receive both before and during the service in the process of implementing the curriculum and supporting their professional development processes can ensure that the expected results of the designed curriculum outputs are more successful.

4.1 Limitations and future directions

In line with the results of this research, the limitations of the research and suggestions for future studies are as follows:

- In this study, the factors affecting teachers' fidelity to the curriculum identified by Bümen et al. (2014), specifically for Turkey, were discussed, and teachers' opinions on how these factors affected the implementation process of the curriculum were examined in depth. In this context, it was determined that these factors, determined specifically for Turkey, affect fidelity to the curriculum, and that many social, cultural, and economic factors negatively affect the implementation processes of the curriculum, especially in rural areas. At this point, it is important to consider curriculum fidelity and the factors affecting this situation when organizing educational policies.
- The participants expressed negative opinions on the characteristics of the curriculum in terms of its objectives and textbooks. Therefore, it is important to consider this situation in the updates made by the MoNE in the curriculum.
- Apart from these suggestions, it is thought that school administrators establishing effective communication with teachers to create an effective school culture and provide a democratic

environment by giving teachers the right to have a say in school management will also increase the fidelity of the curriculum.

- In this study, the factors affecting fidelity to the curriculum stated by Bümen et al. (2014) were considered. Accordingly, the results of this study showed that teachers explained their fidelity to the curriculum based on these factors. To reveal the factors affecting teachers' fidelity to the curriculum, this situation can be examined comprehensively by conducting phenomenological studies.
- In this study, teachers working in different professions and grades took part as participated. In future, similar studies can be conducted with teachers working at the same grade level and professions.
- In this study, which was conducted with teachers working in rural areas, teachers mentioned difficulties in implementing the curriculum, especially in the context of regional, environmental, and socioeconomic levels. Teachers working in urban centers were not included in this study. Therefore, in future research, studies should be conducted to determine the factors affecting the fidelity of teachers working in urban/provincial centers in the curriculum. In fact, the factors affecting teachers' fidelity to the curriculum can be compared using a holistic multiple-case study.
- The data for this study were collected using a structured interview form. Teachers' fidelity to the curriculum should be supported by the observation of their curriculum practices following the interviews.

5 Statement of researchers

5.1 Researcher contribution rate statement

The authors have contributed equally to this research. Decisions were taken together at every stage of the investigation, and the study was conducted.

5.2 Conflict statement

The authors declare that they have no conflicts of interest. The publication rights of this article have been transferred to the Pedagogical Perspective Journal.

5.3 Support and thanks

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Metalinguistic awareness and teacher self-efficacy beliefs of language teachers: A correlational study on prospective Turkish teachers

Enes ÇİNPOLAT[1*] Vehbi AKDİ[2]

[1]Turkish and Social Sciences Education, Ordu University, Faculty of Education, Ordu, Türkiye.
[2]Turkish and Social Sciences Education, Ordu University, Faculty of Education, Ordu, Türkiye

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Abstract

The concept of metalinguistic awareness, which refers to the knowledge and conscious use of the structural features of the language spoken by the speaker, is a concept related to the ability to understand the language. Acquisition of these skills is to be expected from those who are going to teach language arts. Therefore, this study aims to scrutinise the association between Turkish teacher trainees' metalinguistic awareness and their beliefs in self-efficacy as teachers. For this purpose, 308 3rd and 4th grades prospective Turkish language teachers were reached. To collect the data, the "Turkish Metalinguistic Awareness Scale", the "Self-Efficacy Belief Scale in Turkish Language Teaching" and the "Teachers' Sense of Efficacy Scale" were used. In order to analyze the data, t-test, correlation analysis and regression analysis were used. The study's findings reveal that there is no significant difference in prospective teachers' metalinguistic awareness, Turkish language teaching self-efficacy and teachers' sense of efficacy according to gender and grade level. Additionally, the study discovered that metalinguistic awareness predicts Turkish language teaching self-efficacy and teachers' sense of efficacy levels significantly.

1 Introduction

Metalinguistic awareness is one of the topics of study in language teaching and learning. Since there is much debate about the nature, functions and typical age of onset of metalinguistic awareness, it is difficult to be specific in defining it (Pratt & Grieve, 1984, p. 2). Thus, metalinguistic awareness is generally explained as the ability to consciously know, think, and make judgements about the nature and structure of a relevant language (Edwards & Kiskpatrick, 1999; Gaux & Gombert, 1999; Gombert, 1992; Nagy & Anderson, 1995). Nagy (2007, p. 53) considers reflecting on or changing the order of words in a written or spoken sentence (i.e. syntactic awareness) as a metalinguistic awareness. Thus, metalinguistic awareness covers not only spoken but also written language. In studies on metalinguistic awareness, it can be said to be related to the language user's ability to understand, analyze, and manipulate language. "Metalinguistic awareness is not typical of normal language use; people usually attend to the message being conveyed rather than to the linguistic elements which convey it" '(Nagy & Anderson, 1995, p. 2). In addition, Teplitz (2019, p.

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*Correspondency: enescinpolat@gmail.com

184) states that metalinguistic knowledge is acquired through detailed linguistic knowledge of a language.

Sayar and Turan (2012) stated that the term metalinguistics is a structure that includes different skills. These skills include making correct decisions regarding the division of sentences into words, words into syllables and phonemes, deriving correct words, creating harmonious structures, and making word puns. Having knowledge about these and similar language elements and conducting analyses is a mental process. Therefore, phonological, semantic, syntactic, pragmatic, and morphological awareness skills constitute the scope of metalinguistic awareness (Sayar & Turan, 2012, p. 50). Gombert (1992) also states that metalinguistic awareness is a general term that includes semantic, syntactic, pragmatic, morphological and phonological awareness and that metalinguistic awareness refers to the ability to consciously think about the structural features of language and to deliberately control them. Varışoğlu (2018) examined the sub-dimensions of metalinguistic awareness, such as phonological, morphological, syntactic, and semantic awareness, and created a scale by examining Turkish metalinguistic awareness with sub-factors of phonological, morphological, semantic, syntactic, communicative, and cultural awareness. Different aspects of metalinguistic awareness have been examined by bringing various perspectives into the studies conducted. Thus, it can be seen that the concept of metalinguistic awareness, which constitutes a holistic structure, is divided into sub-factors.

In the relevant literature, there are studies examining the relationship between metalinguistic awareness and various achievement indicators. In this context, metalinguistic awareness has been analyzed in both native and foreign language contexts. Flood and Menyuk (1983) conclude that reading achievement is related to metalinguistic awareness. Gini, Benelli, and Belacchi (2004, p. 259) found that metalinguistic awareness was related to language grades in 6-year-old children, while at the end of primary school metalinguistic awareness was also related to language acquisition and mathematical reasoning in different disciplinary areas. Jean Dreher and Zenge (1990) reported that metalinguistic awareness significantly predicted reading comprehension achievement of 3rd and 5th grade students. In Spellerberg's (2016) study, which offers a broader perspective, metalinguistic awareness was found to be related to students' success in courses in the school graduation exam. Metalinguistic awareness is a concept related to native language education and success in other courses. Similar results have been reported in the literature on foreign language learning and teaching. Aydın's (2018) study stated that the metalinguistic knowledge of foreign language learners was a significant predictor of their writing achievement scores. In a study conducted by Al-Ahdal and Almarshedi (2022), a significant relationship was found between EFL learners' metalinguistic awareness and foreign language achievement. Şeref and Varışoğlu (2020, p. 969) state that the metalinguistic awareness of pre-service teachers is important, as they are important partners in mother tongue or foreign language teaching. According to Andrews (1997, p. 149) metalinguistic awareness "helps to emphasise the extra dimension of cognitions and reflections about language competence and communicative competence which is required by the language teacher in addition to the language awareness exhibited by any competent user of a language who consciously manipulates that language in order to achieve specific communicative purposes." Furthermore, Andrews (1999, p. 216) states, "there is considerable evidence that TMA (Teacher Metalinguistic Awareness) has a marked effect upon the teacher's performance of a number of tasks widely believed to facilitate learning."

Teacher self-efficacy, another element analyzed within the scope of the research, was also examined as an additional factor in student achievement (Pajares, 1996). Self-efficacy is defined

as an individual's perceived ability to perform a desired activity (Bandura, 1986). The concept of self-efficacy involves the ability of individuals to plan and perform their actions to achieve a certain level; it is related to the individual's belief that he/she can accomplish a task, and these beliefs shape their performance towards events that affect their lives and determine their world of feelings and ideas, motivation, and behavior (Bandura, 1994). As can be seen, the concept of self-efficacy is stated to be effective on the performances of individuals against various events. In this context, the scope of the teaching profession is examined domain-specifically through the concept of teacher self-efficacy. Teacher self-efficacy is defined as individual beliefs in the teacher's ability to fulfil certain teaching tasks at a certain quality level in a given situation (Dellinger, Bobbett, Oliver, & Ellett, 2008, p. 752). When the related literature is analyzed, it is seen that teacher efficacy is a factor affecting teaching outcomes. Teacher efficacy is related to willingness to teach (Allinder, 1994; Soodak & Podell, 1993) and is positively related to student achievement (Ashton & Webb, 1986; Moore & Esselman, 1992).

Teacher self-efficacy has a significant impact on teaching outcomes and quality. Existing literature shows that metalinguistic awareness is crucial in language teaching. It can be considered a necessary requirement for prospective teachers who are going to carry out Turkish language teaching courses to have Turkish metalinguistic awareness. In this regard, a potential correlation may exist between language teachers' metalinguistic awareness and self-perceived success in language instruction. This study aimed to provide insights into the metalinguistic awareness and teaching self-efficacy of Turkish language prospective teachers, thereby contributing to the related literature.

Thus, this study aimed to examine the correlational relationship between prospective Turkish teachers' Turkish metalinguistic awareness, Turkish teaching self-efficacy perceptions, and teachers' sense of efficacy.

2 Method

The Methods section includes the research design, sampling procedure, data collection instruments, data analysis, and issues of validity, reliability, and ethics.

2.1 Design

This study was designed as a correlational study using quantitative methods. Correlational research is a type of research used to explain the relationships between variables (Christensen et al., 2015). "In their simplest form, correlational studies investigate the possibility of relationships between only two variables, although investigations of more than two variables are common" '(Fraenkel, Wallen, & Hyun, 2023, p. 325). The examination of the relationship without any intervention in the variables is also considered an important and fundamental feature of correlational research. Thus, the relationships between prospective Turkish teachers' metalinguistic awareness, Turkish teaching self-efficacy perception, and teacher efficacy perception were analyzed without any intervention.

2.2 Participants and procedure

The study group consisted of 308 Turkish language teaching 3rd and 4th year undergraduate students. Of these, 96 (31.2%) were male and 212 (68.8%) were female. Of the participants, 158 (51.3 %) were 3rd grade students, and 150 (48.7%) were 4th grade students. As the dependent variable was teaching self-efficacy, data were not collected from first- and second-year students.

It was decided that the students to be sampled would take more than half of the department courses. There were 68 courses in the Turkish teacher training framework prepared by the Council of Higher Education (2018). 38 of these courses (55.88%) were conducted in the first and second years. For this reason, it was deemed necessary for the students included in the sample to have completed most of the courses on teaching to use a measurement tool for teaching self-efficacy.

The study group was determined using the cluster sampling method as the population group studied was distributed throughout Türkiye. “By cluster sampling, the researcher can select a specific number of schools and test all the students in those selected schools, i.e. a geographically close cluster is sampled” (Cohen, Manion & Morrison, 2018, p. 216). The sample group comprised students from 10 state universities who volunteered and completed more than half of the department courses. The data were collected in a controlled online environment.

2.3 Measures

The Turkish Metalinguistic Awareness Scale: This scale was developed by Varışoğlu (2018). The scale, developed with the participation of prospective teachers as 41 items and six factors, has a 4-point Likert-type evaluation. Phonological, morphological, semantic, syntactic, communicative, and cultural awareness constitute the sub-factors of the scale. The alpha reliability of the scale is as .87.

Self Efficacy Belief Scale in Turkish Language Teaching: The scale developed by Çocuk, Alıcı, and Çakır (2015) includes 22 items and 4 factors. The scale has a 10-level evaluation type. Individualizing and directing the process in Turkish language teaching, benefiting from technology and material development in Turkish language teaching, measurement and evaluation in Turkish language teaching, and professional–academic development in Turkish language teaching constitute four sub-factors. The Cronbach’s alpha reliability of the scale was stated as .94.

Teachers’ Sense of Efficacy Scale: The scale adapted into Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005) has 24 items and three factors. These factors are Student Engagement (SE), Instructional Strategies (IS), and Classroom Management (CM). The scale has a 9-point Likert-type evaluation. The participants in the adaptation study consisted of prospective teachers. The Cronbach’s alpha reliability of the scale was stated as .93.

2.4 Data analysis

Jamovi (2023) software was used for the data analysis. The techniques used in the data analysis were selected according to normality values. According to George and Mallery (2003), skewness and kurtosis coefficients between -2 and +2, and according to Tabachnick and Fidell (2007) between -1.5 and +1.5 are considered sufficient to assume that the distribution is normal. When the skewness and kurtosis coefficients approach zero, the normality of the distribution increases (Tabachnick and Fidell, 2007). Because the skewness and kurtosis of the scores obtained from the measurement tools take values between − 1 and + 1 it can be said that the data show a normal distribution. Therefore, parametric tests were used in the analysis. The Pearson product-moment correlation coefficient, independent groups t-test, and simple linear regression analysis were used.

2.5 Validity, reliability, and ethical considerations

Validity and reliability analyses of the data collection tools used in the study were conducted in the studies mentioned in the instruments section. Within the scope of this study, the Cronbach's α and McDonald's ω values of the measurement tools were reported. Accordingly, the Cronbach's

α and McDonald's ω values of the Turkish Metalinguistic Awareness Scale were .94. Cronbach's α coefficient of the Self-Efficacy Belief Scale in Turkish Language Teaching was .94, and McDonald's ω coefficient was .95. The coefficient of the Teachers' Sense of Efficacy Scale was .95, and the McDonald's ω coefficient was .96. According to these values, the internal consistency of the scales used in this study was sufficient. It is stated that values above .90 are very highly reliable (Cohen, Manion, & Morrison, 2018, p. 774).

The ethical procedures recommended by the American Psychological Association (APA, 2020) were followed. The participants were included in the study in accordance with the principle of voluntariness. Approval was obtained from all participants. Information to identify participants (name, surname, etc.) was not requested. Along with personal privacy, the reputation and rights of participants were secured. Participants were informed that they could withdraw from the study in any part of the research without stating a reason. The researchers meticulously adopted the principle of transparency in the analysis and reporting processes.

3 Findings

Analyses of the applied scales according to gender and grade level are given below.

Table 1 Independent samples t-test – gender

		Statistic	df	p
Metalinguistic	t	-0.634	306	0.526
Turkish Teaching Self Efficacy	t	-1.500	306	0.135
Teachers' Sense of Efficacy	t	-0.313	306	0.754

As shown in Table 1, the metalinguistic awareness, Turkish language teaching self-efficacy, and teaching efficacy perceptions of prospective Turkish teachers did not differ significantly according to gender. According to this, the gender of prospective teachers does not have a significant role in the analyzed situations.

Table 2 Independent samples t-test – grade

		Statistic	df	p
Metalinguistic	t	-1.032	306	0.303
Turkish Teaching Self Efficacy	t	0.825	306	0.410
Teachers' Sense of Efficacy	t	0.482	306	0.630

Table 2 shows that the metalinguistic awareness, Turkish language teaching self-efficacy, and teaching efficacy perceptions of prospective Turkish teachers did not differ significantly according to the grade level variable. According to this, the grade levels of prospective teachers do not have a significant role in the analyzed situations.

The relationships between prospective Turkish teachers' metalinguistic awareness, perception of Turkish teaching self-efficacy, and perception of teacher efficacy are analyzed below.

Table 3 Correlation matrix

	F1	F2	F3	F4	F5	F6	MLA	TTSE	TSE
F1	—								
F2	0.685*	—							
F3	0.633*	0.611*	—						
F4	0.685*	0.723*	0.706*	—					
F5	0.592*	0.561*	0.686*	0.666*	—				
F6	0.601*	0.527*	0.690*	0.667*	0.759*	—			
MLA	0.832*	0.813*	0.856*	0.880*	0.836*	0.840*	—		
TTSE	0.400*	0.360*	0.412*	0.417*	0.413*	0.451*	0.485*	—	

TSE	0.352*	0.342*	0.399*	0.461*	0.440*	0.418*	0.476*	0.780*	—

Note. *: p<.001, F1: Phonological Awareness, F2: Morphological Awareness, F3: Semantic Awareness, F4: Syntactic Awareness, F5: Communicative Awareness, F6: Cultural Awareness, MLA: Metalinguistic Awareness, TTSE: Turkish Language Teaching Self Efficacy, TSE: Teachers' Sense of Efficacy

According to Table 3, there are moderately significant relationships between the metalinguistic awareness scale and its sub-dimensions and the Turkish language teaching self-efficacy perceptions and teacher efficacy perceptions of prospective Turkish teachers. Accordingly, there was a significant relationship between metalinguistic awareness and Turkish teachers' self-efficacy perceptions at the level of r=.485, p<.001. There was a significant relationship between metalinguistic awareness and teacher efficacy perceptions at the r=.476, p<.001 level.

Below, the results of a simple linear regression between prospective Turkish teachers' metalinguistic awareness, Turkish teaching self-efficacy perception, and teacher efficacy perception are presented. Regression analyses were performed twice: between metalinguistic awareness and perception of Turkish teaching self-efficacy, and between metalinguistic awareness and teacher efficacy. Turkish language teaching self-efficacy perception and teacher efficacy perception were considered dependent variables.

Table 4 Model coefficients – Turkish language teaching self efficacy

			95% Confidence Interval					95% Confidence Interval	
Predictor	**Estimate**	**SE**	**Lower**	**Upper**	**t**	**p**	**Stand. Estimate**	**Lower**	**Upper**
Intercept	16.8	6.35	4.26	29.3	2.64	0.009			
MLA	17.5	1.80	13.94	21.0	9.70	< .001	0.485	0.387	0.583

Note. R^2=.23, MLA=Metalinguistic Awareness

First, the assumptions of the simple linear regression analysis, in which the dependent variable was self-efficacy perception of Turkish language teaching, were examined. Accordingly, the Durbin–Watson value (DW=1.92) and variance inflation factor (VIF=1.00) were determined, and regression analysis was continued according to the results obtained (Field, 2013). Thus, the necessary preconditions are met. The results of the simple linear regression analysis in Table 4 show that metalinguistic awareness explained 23% of the total variance in Turkish language teaching self-efficacy perception ($F_{(1, 306)}$=94.2, p<.001). The positive contribution of metalinguistic awareness to the regression model was significant (ß=.48, p<.001).

Table 5 Model coefficients – Teachers' sense of efficacy

			95% Confidence Interval					95% Confidence Interval	
Predictor	**Estimate**	**SE**	**Lower**	**Upper**	**t**	**p**	**Stand. Estimate**	**Lower**	**Upper**
Intercept	2.79	0.477	1.85	3.73	5.85	< .001			
MLA	1.28	0.135	1.01	1.54	9.46	< .001	0.476	0.377	0.575

Note. R^2=.22, MLA=Metalinguistic Awareness

The necessary prerequisites for simple linear regression analysis, in which the dependent variable was teacher efficacy perception, were examined. Accordingly, the Durbin–Watson value

(DW=1.91) and variance inflation factor (VIF=1.00) were determined, and regression analysis was continued according to the results obtained (Field, 2013). Thus, the necessary preconditions are met. The results of the simple linear regression analysis in Table 5 show that metalinguistic awareness explained 22% of the total variance in teachers' efficacy perception ($F_{(1, 306)}$=89.5, p<.001). The positive contribution of metalinguistic awareness to the regression model was significant (ß=.47, p<.001).

4 Discussion

This study examined prospective Turkish teachers' metalinguistic awareness, Turkish teaching self-efficacy, and sense of efficacy. First, it was determined whether the gender and grade level of prospective Turkish teachers significantly differed in the scores obtained. Subsequently, the findings were reported by examining the relationships between specified situations.

According to the findings obtained in this study, prospective Turkish teachers' metalinguistic awareness and perceptions of teaching self-efficacy did not differ significantly according to gender. Ülper and Bağcı (2012) examined the self-efficacy perceptions of prospective Turkish teachers and found no significant gender differences. Maden and Ustabulut's (2022) study revealed that the self-efficacy of prospective Turkish teachers in preparing lesson plans did not differ by gender. Considering the results obtained, and especially the studies in which prospective Turkish teachers were examined, it is seen that the effect of gender on the perception of professional competence is not significant. Şeref and Varışoğlu (2020) found a significant difference in favor of female prospective teachers in metalinguistic awareness. It should be noted that prospective Turkish teachers were not selected as samples in that study. Thus, it can be considered as a possible situation in which the results do not match with this study. In addition, metalinguistic awareness, Turkish Teaching Self-Efficacy, and Teachers' Sense of Efficacy scores of 3rd and 4th grade students did not differ significantly between the groups. The fact that all the sampled students took more than half of the department courses may have been effective in this situation.

Phonological Awareness, Morphological Awareness, Semantic Awareness, Syntactic Awareness, Communicative Awareness, Cultural Awareness, which constitute the sub-factors of metalinguistic awareness, were presented as separate factors in the correlation analysis. Accordingly, a moderate correlational relationship was found between phonological awareness, morphological awareness, semantic awareness, syntactic awareness, communicative awareness, cultural awareness, Turkish teaching self-efficacy and teachers' sense of efficacy. A moderate positive correlation was also found between the metalinguistic awareness scale, Turkish teaching self-efficacy, and teachers' sense of efficacy. It was also found that metalinguistic awareness significantly predicted Turkish Teaching Self Efficacy and Teachers' Sense of Efficacy. Metalinguistic awareness explained 23% of the total variance in Turkish teaching self-efficacy. Metalinguistic awareness explained 22% of the total variance in teachers' sense of efficacy.

Teacher metalinguistic awareness is the knowledge that teachers have about the underlying systems of language that enable them to teach effectively (Thornbury, 1997). Tekşan and Kanık-Uysal (2018, p. 270) state that language awareness requires knowledge of the rules, subtleties, and wonders of language. It is stated that language awareness is a factor that significantly increases the success level of individuals in the process of learning and teaching a language (Şeref & Varışoğlu, 2020, p. 961). Adrews (2003) also emphasized the association between teachers' language awareness and pedagogical content knowledge. Tsang (2011, p. 1) states that systematic

micro-metalinguistic input be integrated in teacher training courses and be used more actively among in-service teachers in their teaching context. In this context, it can be said that metalinguistic awareness is a subject of L1 and L2 research. Batur and Beyret (2015, p. 889) reported that metalinguistic awareness skills had a positive effect on the L1 writing skills of secondary school students. The predictive effects of metalinguistic awareness skills and phonological awareness, working memory, and short-term memory on reading development in children, although there are some contradictory points, were stated (Sayar & Turan, 2012, p. 60). In a study conducted by Sönmez, Haznedar, and Babür (2017, p. 85), it was determined that the phonological awareness and vocabulary knowledge level of 3rd grade students predicted their success in writing qualified sentences. In a study conducted by Abdi and Zahedi (2014, p. 46) in the L2 context, metalinguistic awareness was found to affect prospective teachers' syntactic accuracy and syntactic complexity. In Spellerberg's (2016, p. 36) study that conducted in linguistically diverse school setting, “Metalinguistic Awareness test performance and school leaving exam results were found to be significantly correlated, indicating that metalinguistic abilities are linked to school performance in terms of school leaving exam results in several different subjects.” Zerva (2023, p. 5) found that both teachers and learners who participated in a L1 written language teaching programme aimed at emphasising and using metalinguistic skills believed that metalinguistic skills contributed positively to learners’ language performance, improved their ability to identify and correct errors, guided learners to a greater sense of security and satisfaction in the production of language products, and therefore teaching aimed at developing metalinguistic skills and applying metalinguistic strategies was preferred by learners. Njika (2015, p. 23) emphasizes the importance of teacher metalinguistic awareness of teaching and states that the attitudes of the teachers who participated in the study in the L2 context were positive, but their knowledge of metalinguistic awareness was weak. Wach (2013, p. 62) also reported that since language awareness is relatively low in foreign language teachers according to the results obtained in his study, it may be appropriate to diagnose the metalinguistic knowledge of teachers and prospective teachers more rigorously and to provide complementary training in this regard. Dempsey (2013, p. 75) concluded that there is a predictive relationship between writing quality and metalinguistic self-efficacy.

4.1 Limitations and future directions

This study must be evaluated by considering certain limitations. Although the participants voluntarily participated in the study, response errors should be considered. The fact that the participants may reflect on themselves in a different profile than they actually can also be considered a limitation. Within the scope of this study, data were collected from 308 3rd and 4th grade students. A sample research can be conducted on different study groups to generalize the results to the population.

The results suggest that prospective teachers’ Turkish metalinguistic skills, pedagogical content knowledge, and practices should be examined in depth. In addition, since metalinguistics is important in terms of language teaching, it is recommended to give importance to these issues during the education of prospecific language teachers.

4.2 Conclusion

This study found a positive correlation between metalinguistic awareness, Turkish teaching self-efficacy, and teachers’ sense of efficacy. Metalinguistic awareness skills, which are considered

important in the literature, both in the context of language teacher training and for students to be successful in linguistic outcomes, appear to be an important skill type for prospective teachers. The results of the study show that metalinguistic awareness, which seems to be related to Turkish language teaching and general teaching self-efficacy, supports the outlook in the literature. As seen from the related literature, there is evidence that metalinguistic awareness is an important factor in the context of foreign language (L2) and native language (L1) teaching. Therefore, a comprehensive examination of language teaching and metalinguistics is necessary for thorough evaluation.

5 Statement of researchers

5.1 Researchers contribution rate statement

The authors have contributed equally to this study. Decisions were taken together at every stage of the research and the study was conducted.

5.2 Conflict statement

The authors declare no conflicts of interest.

5.3 Support and thanks

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