iejee

International Electronic Journal of Elementary Education
December 2024, Volume 17, Issue 1

Investigation of Early Childhood Teacher Self-Efficacy in Terms of Various Variables

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Received : 18 September 2024
Revised : 13 November 2024
Accepted : 23 December 2024
DOI : 10.26822/iejee.2024.371

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Abstract

This study aims to examine the self-efficacy levels of early childhood teachers in terms of various variables (age, marital status, department graduated, education level, professional experience). The survey model, one of the quantitative research methods, was used in the present study. Criterion sampling; one of the methods of purposive sampling is applied. 219 early childhood teachers working as early childhood teachers in different provinces of Turkey participated in the study. The data for the study was collected using the "Teacher Self-Efficacy Scale," which was adapted to Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005). The construct validity of this scale was confirmed by performing a confirmatory factor analysis for early childhood teachers. The data was analyzed using the SPSS-28 statistical program. The relevant data were subjected to the Mann-Whitney U and Kruskal Wallis H tests. Confirmatory factor analysis was performed using the Amos program, and the results indicated that the scale had acceptable fit values. In addition, the reliability level was found to be high, with the Cronbach Alpha internal consistency reliability coefficient being .97. Based on the research results, the self-efficacy of early childhood teachers varied significantly based on age group, marital status, and professional experience. However, no significant difference was observed in the self-efficacy levels of early childhood teachers based on their education level and economic status.

Keywords:

Self-Efficacy, Early Childhood Teacher, Validity

Introduction

Teaching is a profession that has been revered throughout history and is considered sacred by many. Teachers may encounter various challenging situations while practicing this revered profession. To cope with these challenges, teachers should possess some certain characteristics; among the most crucial of which are the competencies that teachers believe they have or do not have. Even though there have been numerous national and international studies on teacher competencies over the years, the number of studies conducted in accordance with today's conditions and challenges is inadequate. Teacher competencies include three main competency areas, namely "professional knowledge," "professional skills," and "attitudes and values," with a total of 65 indicators related to these areas (MEB,

2017). Professional knowledge includes mostly field knowledge, while professional skills include skills related to managing educational environments. Attitudes and values include skills related to student engagement and approaches. These competencies and indicators are set to train better and higher quality teachers. Teacher competencies are one of the most important skills teachers need to acquire to perform their profession in a qualified manner (Mohamad, Hinduja, & Siddiqui, 2023). Many studies have been conducted on the 3 main competency areas identified by MEB which are professional knowledge, professional skills and attitudes and values. Moreover,(hangi yeterlikler olduğu açıklandı) these studies have focused on sub-dimensions such as organizing educational environments, ensuring student participation, and classroom management. Organizing the educational environment is one of the things that increase students' participation, so teachers should have this competence.

Creating and managing an educational environment requires both the physical organization of the classroom and the acclimatization of students to this order. This reveals the importance of classroom management in its broadest form. One of the competencies teachers should possess for classroom management is the ability to adjust classroom arrangements and the physical environment according to lessons and activities (Alfonso, 2023). Ocakcı and Samancı (2019) revealed that teachers felt inadequate, especially regarding physical organization and working with students of different ages and characteristics. Additionally, successful teachers who provided classroom management and competencies could better cope with the challenges encountered and produce creative solutions. Because good classroom management also means a good classroom climate (O'Beid, 2023). Creating a positive classroom and school climate, supporting students' ideas, and helping students with their various needs ensures academic success with high teacher competencies (Claire, 2023). In addition to ensuring academic achievement, teacher efficacy affects the whole dynamic of school culture. This plays an important role in creating the most harmonious environment for students to learn by meeting their basic needs. (Rofiah, Kossewska, Herviani, & Sheehy, 2023).

Attitudes and values, another important competence area, namely the approach and participation of students, are among the most crucial areas that teachers should possess. The way teachers approach students directly influences student participation in the classroom. Akkuş and Doymuş (2018) found that student engagement is higher when the teacher approaches students without pressure and with the necessary time and patience. Teachers with a high degree of efficacy show more positive behavior in the classroom, are open to new ideas, and have more faith in challenging environments and students. Attitudes towards teaching improve in direct proportion to teacher self-efficacy (Hernández-Saca, Voulgarides, & Etscheidt, 2023). Teachers' possession of attitudes and values competencies depends on their belief in these competencies, that is, their self-efficacy.

The concept of self-efficacy was first coined by Bandura (1977) in the social learning theory, and consequently, Teacher self-efficacy refers to teachers' beliefs about their ability to fulfill the tasks acquired to perform their profession in accordance with the targeted success and to affect students' learning and learning environments positively (Tschannen-Moran, Hoy, & Hoy, 1998). From this point of view, Bandura (1977) suggested that the stronger a teacher's self-efficacy, the better they can cope with any problem they may face and the more determined they can be in dealing with it (Täschner, Dicke, Reinhold, & Holzberger, 2023). On the other hand, teachers with inadequate self-efficacy were found to have inadequate skills in solving problems, showing the right approach to children, inadequate classroom management skills, and stressful attitudes (Hardianto, Sari, & Hidayat, 2023). Considering all these, it is clear how vital teacher self-efficacy is. Developing these self-efficacies plays a crucial role in educational environments and children, who are the future of society. It is seen as a necessity to raise self-confident teachers who believe in themselves and can solve problems (Wray, Sharma, & Pearl, 2022).

Teachers with high levels of self-efficacy can be more comfortable and confident leaders in their classrooms. Alanoglu (2021) found that teachers with high levels of self-efficacy were more willing to direct and lead the students in their classrooms. In his study, Erdoğan (2023) found that teacher self-efficacy and teacher leadership strengthen each other in direct proportion, positively affect teachers' professional development, and thus learning outcomes are more qualified. These results show that teacher self-efficacy promotes student achievement, motivation, effectiveness, and leadership. In a classroom, the more effectively the teacher creates an effective learning environment and actively engages the students in activities and activities, the better and more effective the learning will be. Klassen and Tze (2014) suggested a strong and positive relationship between teaching effectiveness and teacher self-efficacy. In addition to the effectiveness, it is vital for teachers to be able to make practices and plans that will foster student success and motivation. The higher the students' motivation, the more positively their achievement is affected. Together, these factors increase the efficiency and quality of the learning environment (Gordon, Blundell, Mills, & Bourke, 2022). Especially the early childhood period, which is the first stage of education, has a special place. Because the quality of the learning environment and the high self-efficacy of teachers

will affect children's feelings towards school positively or negatively.

Early childhood education institutions serve as children's second homes, shaping their educational lives. The skills acquired here lay the foundation for their future development. Children's growth and acquisition of various skills enable them to become self-confident individuals (Çapa, Çakıroğlu, & Sarıkaya, 2005). Self-confident children tend to perform better in their educational pursuits. Additionally, children positively impact themselves and their surroundings through the skills obtained in early childhood (O'Reilly, Devitt, & Hayes, 2022). Teachers play a pivotal role in providing quality education and creating enriching learning environments. The self-efficacy levels of early childhood teachers are crucial in this regard (Wulandari & Suryandari, 2022). The higher the self-efficacy levels of teachers, the higher the quality of education they provide. Teacher self-efficacy is crucial for educators in all fields. Research has shown that undergraduate students with high teacher efficacy tend to be happier in their future careers and experience greater job satisfaction (Williams, Christensen, McElroy, & Rutledge, 2023). The sense of self-efficacy has allowed teachers to be more creative in enriching their teaching environments, and this has been a contributing factor to increased student academic achievement. When teachers are creative, students also become more creative and find innovative ways to solve problems (Ma, 2022). Teachers being creative and happy in their profession plays a critical role in achieving goals at all levels of education (Shu, 2022). Early childhood education institutions are where children are first introduced to school, and teachers' self-efficacy forms the basis of all levels. Therefore, when shaping the educational environment, teacher self-efficacy should be taken into consideration and developed.

Early childhood teachers' problem-solving skills and the activities they implement affect the teaching environment and children, and their self-efficacy levels are crucial in solving the problems faced in their profession. Oğuz's (2017) study illustrated a positive correlation between problem-solving skills and teacher self-efficacy. Solving classroom issues facilitates the teaching environment and aids in reaching all children. Early childhood teachers should be able to approach all children in their classrooms in an inclusive way and touch all children (D'Agostino & Horton, 2023). Due to the migration movement seen all over the world, inclusive education has become a necessity and touching every child has become even more difficult.

Especially since 2011, millions of migrants have come to our country due to the migration operation that started with Syrian migration, and today, people are migrating from different countries. When we look at the 2023 data, there are 3,222,012 migrants, and 1,006,650 of them are children between the ages of 0-9 (Directorate of Migration Management, 2023). In addition, considering the economic situation in Turkey, the number of economically disadvantaged student groups increases yearly. In early childhood classrooms, children from different cultures and financially underprivileged groups are present in a considerable number of provinces, and their numbers are increasing daily. This difference and diversity makes classroom management difficult and reduces student participation. It has been a challenge for teachers to reach children who do not know the language of instruction and who are socially deficient. (Özoruç & Dikici Sığırtmaç, 2022)

In recent years, there has been an increase in both global and local migration, driven by political and economic factors. This has led to challenges for children who find themselves in new environments with different languages and cultures. Furthermore, the financial difficulties in Turkey have had widespread effects, including on children. The early childhood years are crucial for language acquisition and overall development. Early childhood teachers play a significant role in shaping children's lives during this time. High teacher self-efficacy is essential for the well-being of both teachers and children, as well as for the future of our society.

Both student profiles and family profiles are being updated all over the world and in our country. For example, millions of immigrants have come to Turkey in the last 10 years, and working with these immigrant children requires different skills and self-efficacy. When examining national and international studies on the self-efficacy level of early childhood teachers, it is evident that such studies are scarce, and more research is required. Hence, it is crucial to assess the current self-efficacy of teachers and study the impact of different factors. Based on these findings, the Ministry of Education and school administrators can develop new initiatives to enhance teachers' self-efficacy and ability to adjust to new circumstances. Furthermore, it is essential to use a self-efficacy assessment tool with up-to-date construct validity for early childhood teachers in today's educational environment. It is believed that assessing teachers' self-efficacy, recognizing their strengths and weaknesses, and exploring the correlation between self-efficacy and demographic variables will benefit both teachers and the field.

Problem Statement

The present study addressed the following questions: "What are the levels of self-efficacy among early childhood teachers?" and "Is there a significant variance in teachers' self-efficacy levels based on demographic factors?"

Sub Problems

1. What are the self-efficacy levels of early childhood teachers?
2. Does the age variable significantly affect early childhood teachers' self-efficacy levels?
3. Does the marital status variable make a significant difference in the self-efficacy levels of early childhood teachers?
4. Does the graduated department variable make a significant difference in the self-efficacy levels of early childhood teachers?
5. Does the education level variable make a significant difference in the self-efficacy levels of early childhood teachers?
6. Does the experience variable make a significant difference in the self-efficacy levels of early childhood teachers?

Method

In this part of the study, information about the participants, research model, data collection, data collection tools, and the analysis employed are given in this section.

Research Model

In this study, the survey model, a type of quantitative research method, was employed. Survey models are used to describe past or current situations and to carefully determine specific characteristics of a group (Büyüköztürk et al., 2018).

Participants

The participants of the present study consist of early childhood teachers. The data were collected by the researcher through face-to-face and online forms with early childhood teachers. For this purpose, data were collected from a total of 230 early childhood teachers; erroneous and incomplete forms were eliminated, and as a result, data from a total of 219 early childhood teachers were evaluated. The criterion sampling method, one of the sub-headings of the purposive sampling method, was preferred in forming the sample group. In this sampling method, observation units are formed from certain events, objects, situations, or people, and those who meet the criteria determined for the sample are included (Baltacı, 2018). Three criteria were used to select participants for this study. First, participation in the study was voluntary. Second, being an early childhood teacher. Finally, having previously or currently had refugee children in the classroom. Information on the demographic characteristics of the early childhood teachers in the research group is presented below.

Table 1:

Demographic Characteristics of Participants

Variable	Group	*f*	%
Age Group	18-25 years old	44	20.1
	26-30 years old	78	35.6
	31-40 years old	52	23.7
	40 years and older	45	20.5
Marital Status	Married	115	52.5
	Single	104	47.5
Graduated Program	Early Childhood Education	184	84.0
	Child Development	35	16.0
Education Level	Associate Degree	20	9.1
	Undergraduate	159	72.6
	Postgraduate	40	18.3
Economic Level	Low	60	27.4
	Middle	146	66.7
	High	13	5.9
Work Experience	0-5 Years	104	47.5
	6-10 Years	46	21.0
	11-20 Years	45	20.5
	20 Years and above	24	11.0
Type of Institution	Practice Early Childhood Instutions	13	5.9
	Early Childhood Instutions	142	64.8
	Kindergarten	64	29.2
Total		219	100.0

In Table 1, he age distribution of the participants was as follows: 20.1% were between 18-25 years old, 35.6% were between 26-30, 23.7% were between 31-40, and 20.5% were 40 years or older. Also, the study shows that 52.5% of the early childhood teachers were single, and 47.5% were married. Moreover %84 of the participants graduated from Early childhood Education Department and %16 of participants graduated from Child Development Department. Regarding educational background, 9.1% held associate degrees, 72.6% held bachelor's degrees, and 18.3% had postgraduate qualifications. Economically, 27.4% had low, 66.7% had medium, and 5.9% had high economic status. Regarding work experience, 47.5% had 0-5 years, 21% had 6-10 years, 20.5% had 11-20 years, and 11% had over 20 years of experience. Also %84 of the participants graduated from Early childhood Education Department and %16 of participants graduated from Child Development Department. Finally, 29.2% of the early childhood teachers worked in kindergarten, 64.8% in early childhood instutions, and 5.9% in practice early childhood instutions. (Tabloya göre sıralandırıldı.)

Data Collection Tools

Data collection tools consist of a demographic information form and a teacher self-efficacy scale. Data were collected and analyzed by the researcher online and face-to-face.

Demographic Information Form

The Demographic Information Form includes questions about early childhood teachers' age, marital status, work experience, and education level. The Demographic Information Form was filled out by the early childhood teachers participating in the study.

Teacher Self-Efficacy Scale

The teacher Self-Efficacy Scale was developed by Tschannen-Moranand and Hoy (2001) to measure teachers' self-efficacy and self-efficacy beliefs and adapted into Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005). The scale consists of 24 items and three sub-dimensions. The sub-dimensions are self-efficacy for instructional strategies, self-efficacy for student participation, and self-efficacy for classroom management. The summation method was used in scoring the scale, and the maximum score that can be obtained from the 5-point Likert scale is 120, while the minimum score is 24. According to the scale, high scores indicate high self-efficacy, while low scores indicate low self-efficacy. According to Cronbach's Alpha analysis, which was conducted to measure the internal consistency coefficient of the original scale, the reliability coefficient of the whole scale was obtained at .94, which is relatively high.

When analyzing the data from the scale adapted into Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005), it was found that the data were collected from 628 pre-service teachers, with only 91 of them being from the early childhood teaching department. The literature on early childhood teaching does not use the words "lesson" and "student". Instead, it is widely acknowledged that children do not view school as a place for courses; instead, it is a space for children to be themselves. Teachers often use the words "child" and "activity" in their communication (Çocuk, Yanpar Yelken, Aslantürk, & Güçlü, 2021). Confirmatory factor analysis was conducted to determine the validity of the scale due to the changes made and the difference in the sample group and to understand whether the factor loadings of the original scale were valid for this research.

During the confirmatory factor analysis, the term "lesson" in the original scale was changed to "activity," and the term "student" was changed to "child" as specific to the early childhood field. In addition, the 14th item of the scale, "How much can you ensure that a student who is unsuccessful understands the lesson better?" was revised as "How much can you ensure that children with low participation in activities participate more in activities?". Other than these changes, no other changes were made. The original scale was administered to a total of 628 pre-service teachers, and only 15% of them were pre-service early childhood teachers. In this study, the data for the Early Childhood Teacher Self-Efficacy scale were collected from 219 early childhood teachers. Before the scale adaptation, permission was obtained from the scale owners. As it is known, if a scale whose construct validity has already been demonstrated is adapted to another culture and sample, it is a recommended approach to conduct confirmatory factor analysis directly without performing exploratory factor analysis again to test the construct validity of this scale (Ercan & Kan, 2004; Kahn, 2006). In addition to confirmatory factor analysis, the internal consistency reliability coefficient was also examined. Cronbach's alpha value of the scale was found to be .97, which is a very high reliability level. As a result of confirmatory factor analysis, acceptable fit values were obtained. Analyses related to construct validity and reliability are presented in this section.

Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was conducted to examine the construct validity of the Teacher Self-Efficacy Scale. The first-level correlated CFA examined the scale's 24-item and 3-factor structure.

Table 2.
Model fit values

	χ^2	*sd*	χ/sd^2	IFI	CFI	SRMR	RMSEA
Before modification	796.716	249	3,199	0.890	0.890	0.045	0.100
After modification	731.85	246	2,975	0.900	0.900	0.043	0.096
Acceptable fit values	-	-	<3	>0.90	>0.90	<0.08	<0.10

As a result of the analysis, acceptable fit values could not be reached (χ^2/sd=3,199, IFI=0,890, CFI=0,890, SRMR=0,045, RMSEA=0,100). Therefore, 3 modifications (m1-m2, m5-m15, m23-m24) were made considering the modification indices. Acceptable fit values were reached after modification. Model fit values are given in Table 2.

The item factor loadings, standard error, *t*, and *p* values after CFA are presented in Table 3. (S.S. = Student Engagement, I.S.= Instructional Strategies, C.M.= Classroom Management)

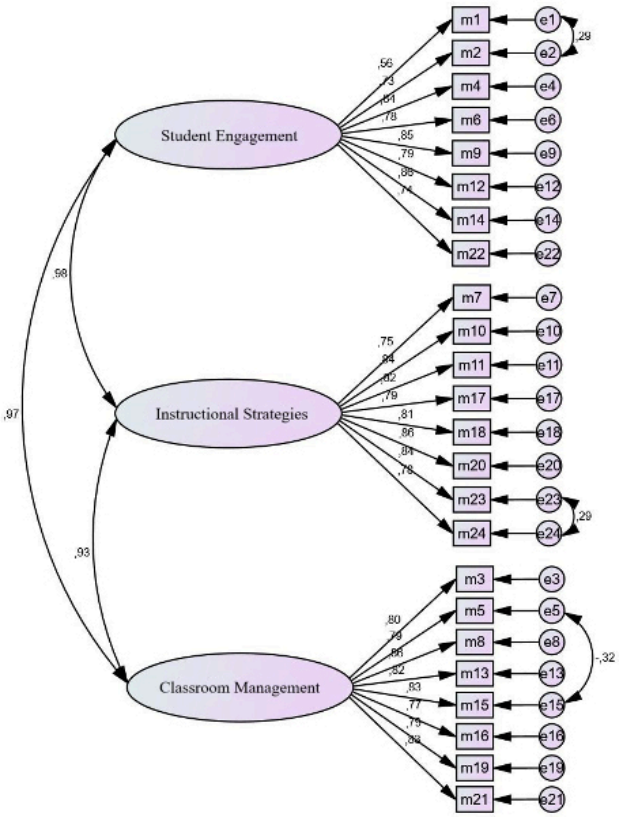
Table 3.
Item Factor Loadings, Standard Error, T and P Values

		Factor Load	S.H.	t	P
SS	m1	0.563	0.246	10.301	0.000
	m2	0.733	0.129	10.089	0.000
	m4	0.835	0.072	9.713	0.000
	m6	0.782	0.083	9.958	0.000
	m9	0.848	0.068	9.619	0.000
	m12	0.787	0.082	9.943	0.000
	m14	0.858	0.059	9.538	0.000
	m22	0.739	0.097	10.078	0.000
IS	m7	0.75	0.102	9.892	0.000
	m10	0.836	0.077	9.437	0.000
	m11	0.822	0.078	9.544	0.000
	m17	0.789	0.082	9.735	0.000
	m18	0.814	0.087	9.596	0.000
	m20	0.857	0.061	9.244	0.000
	m23	0.837	0.069	9.403	0.000
	m24	0.776	0.105	9.751	0.000
CM	m3	0.8	0.092	9.712	0.000
	m5	0.788	0.109	9.642	0.000
	m8	0.862	0.062	9.252	0.000
	m13	0.819	0.076	9.607	0.000
	m15	0.835	0.078	9.349	0.000
	m16	0.766	0.106	9.86	0.000
	m19	0.795	0.091	9.74	0.000
	m21	0.829	0.081	9.538	0.000

The factor loadings for the items ranged from 0.563 (m1) to 0.862 (m8), and all items in the scale showed statistically significant t values (p < 0.001). When conducting a t-test, researchers determine significance by examining the p-value. If the p-value is less than 0.001, the predetermined significance level, then the difference is considered significant (Kalaycı, 2006).

The structural model and standardized coefficients obtained after confirmatory factor analysis are presented in Figure 1.

Figure 1.
Standardized coefficients and structural model obtained after CFA



The confirmatory factor analysis confirmed the construct validity of the three-dimensional scale, which consists of 24 items. The scale was tested using the Amos program and confirmed with confirmatory factor analysis. Figure 2 shows the measurement model of the Teacher Self-Efficacy Scale.

The analysis concluded that the self-efficacy scale is a valid and reliable measurement tool.

Ethics Committee Declaration

This study was conducted with the permission of the Hacettepe University Educational Sciences Ethics Committee, whose decision is numbered E-51933218-300-00003096872, dated 24609/2023.

Findings

The purpose of this study was to assess the variation in self-efficacy among early childhood teachers based on demographic factors such as age, marital status, educational background, level of education, economic status, and teaching experience. Data was gathered from 219 teachers for this study. The collected data was analyzed using the SPSS program, and the findings were subsequently reported.

First, the f-percentage values and frequencies of the participant teachers' demographic information

were analyzed in the analyses. In addition, whether the research data met the assumption of normal distribution was examined, and as a result, skewness and kurtosis values were considered for the research data.

In the analyses conducted within the scope of the research objectives, nonparametric analysis methods were preferred. In this context, the Mann-Whitney *U* test was used in the analyses made according to variables with 2 groups, and the Kruskal Wallis *H* test was used in the analyses made according to variables with more than 2 groups. Significant differences in the Kruskal Wallis h test were analyzed using the Games-Howell test, one of the post-hoc tests.

In addition, Cronbach's alpha values were calculated to measure the reliability of the scale used in the study. The results of these analyses are reported.

Findings Regarding the Distribution of Research Data

Before analyzing the data collected for teacher self-efficacy, the distribution of the relevant data was checked. It is generally recommended that Shapiro-Wilk and Kolmogorov-Smirnov tests be used when conducting normality checks (Büyüköztürk, 2010). On the other hand, when checking normality in different sciences, especially in social sciences, skewness and kurtosis values play an important role in terms of control (Yalçıntaş, 2019). According to George and Mallery (2010), a value between -2 and +2 indicates a normal distribution.

According to Table 2, the skewness and kurtosis values of the data collected for teacher self-efficacy are not between -2 and +2. In this context, it was accepted that the research data were not normally distributed. Nonparametric methods are used to analyze studies whose data do not show normal distribution (Kul, 2014). For this reason, the research was continued with nonparametric tests.

Findings on Teacher Self-Efficacy

Within the scope of the research purpose, teacher self-efficacy was analyzed according to demographic variables. In this context, the Mann-Whitney *U* test was used to analyze variables with 2 groups, and the Kruskal Wallis *H* test was used to analyze variables with more than 2 groups. Significant differences in the Kruskal Wallis H test were analyzed using the Games-Howell test, one of the post hoc tests.

Table 4.
Normality Checks of Participant Teachers' Self-Efficacy Levels

Size	Skewness		kurtosis	
	Statistics	St. Error	Statistics	St. Error
Total	-1.39	.16	3.04	.33
SS	-1.46	.16	3.28	.33
IS	-1.34	.16	2.95	.33
CM	-1.18	.16	2.69	.33

Table 5.
Evaluation of Early Childhood Teachers' Self-Efficacy by Age

Size	Age Group	n	Rank Mean	x^2	df	p	Difference
Total	18-25 years old	44	90.45	19.75	3	.000**	4>1,2
	25-30 years old	78	94.64				
	30-40 years old	52	129.38				
	40 years and older	45	133.34				
Competence for Student Engagement	18-25 years old	44	92.50	17.57	3	.001*	4>1,2
	25-30 years old	78	94.96				
	30-40 years old	52	128.22				
	40 years and older	45	132.12				
Competence for Instructional Strategies	18-25 years old	44	90.90	19.69	3	.000**	4>1,2
	25-30 years old	78	94.67				
	30-40 years old	52	127.02				
	40 years and older	45	135.58				
Competence for Classroom Management	18-25 years old	44	92.69	13.52	3	.004*	4>1
	25-30 years old	78	98.02				
	30-40 years old	52	126.22				
	40 years and older	45	128.94				

*p<.05; **p<.001

According to Table 5, when the data on teacher self-efficacy were compared by age group, significant differences were found between the groups in total score and all sub-efficacy dimensions ($p < .05$).

Games Howell test, one of the post-hoc tests that has an important place in determining the direction of the differences in teacher self-efficacy according to age group, was conducted. Accordingly, in the total score and the dimensions of efficacy for student engagement and efficacy for instructional strategies, the scores of teachers aged 40 and over were significantly higher than those of teachers in the 18-25 and 25-30 age groups. In the dimension of competence for classroom management, the score of teachers aged 40 years and over was significantly higher than that of teachers aged 18-25.

According to Table 6, when the data on teacher self-efficacy were compared according to marital status, significant differences were found between the groups in total score and all sub-efficacy efficacy dimensions ($p<.05$). However, no significant difference was found in the dimension of efficacy for classroom management according to marital status ($p>.05$).

One of the posthoc tests, the Games Howell test, was used to determine the direction of the differences in teacher self-efficacy according to marital status. Accordingly, married teachers' scores were significantly higher than single teachers' in total scores and the dimension of efficacy for teaching strategies.

According to Table 7, when the data on teacher self-efficacy were compared according to graduation, no significant difference was found between the groups in the total score and the dimensions of efficacy for teaching strategies, efficacy for student engagement, and efficacy for classroom management ($p > .05$).

Table 6.

Evaluation of Early Childhood Teachers' Self-Efficacy According to Their Marital Status

Size	Med. Status	*n*	S.O.	x^2	df	*p*	Difference
Total	Married	115	119.95	8.36	2	.02*	1>2
	Single	102	97.65				
Competence for Student Engagement	Married	115	117.94	7.54	2	.02*	3>1,2
	Single	102	99.54				
Competence for Instructional Strategies	Married	115	121.32	10.25	2	.01*	1>2
	Single	102	96.11				
Competence for Classroom Management	Married	115	118.90	5.44	2	.07	
	Single	102	99.45				

Table 7.

Evaluation of Early Childhood Teachers' Self-Efficacy According to the Department of Graduation

Size	Graduation	n	S.O.	x^2	df	p	Difference
Total	Early Childhood Teacher.	184	106.02	4.64	2	.10	
	Child Development	35	129.89				
Competence for Student Engagement	Early Childhood Teacher.	184	105.42	6.04	2	.05	
	Child Development	35	134.33				
Competence for Instructional Strategies	Early Childhood Teacher.	184	107.11	2.78	2	.25	
	Child Development	35	123.17				
Competence for Classroom Management	Early Childhood Teacher.	184	105.90	4.91	2	.09	
	Child Development	35	130.69				

*p<.05; **p<.001

Table 8.

Evaluation of Early Childhood Teachers' Self-Efficacy by Educational Background

Size	Education Status	n	S.O.	x^2	df	p	Difference
Total	Associate Degree	20	130.38	5.24	2	.07	
	Undergraduate	159	104.08				
	Postgraduate	40	123.36				
Competence for Student Engagement	Associate Degree	20	136.80	7.81	2	.02*	1,3>2
	Undergraduate	159	102.88				
	Postgraduate	40	124.89				
Competence for Instructional Strategies	Associate Degree	20	129.57	3.61	2	.16	
	Undergraduate	159	105.27				
	Postgraduate	40	119.03				
Competence for Classroom Management	Associate Degree	20	128.63	4.68	2	.10	
	Undergraduate	159	104.38				
	Postgraduate	40	123.04				

*p<.05; **p<.001

According to Table 8, when the data on teacher self-efficacy were compared according to educational status, no significant differences were found between the groups in total score, competence for teaching strategies, and guidance for classroom management ($p > .05$). However, significant differences were found in the dimension of efficacy for student engagement ($p < .05$).

One of the posthoc tests, the Games Howell test, was used to determine the direction of the differences in teacher self-efficacy according to educational status. Accordingly, in the dimension of efficacy for student engagement, the scores of teachers with associate and postgraduate degrees were significantly higher than those of teachers with bachelor's degrees.

According to Table 9, when the data on teacher self-efficacy were compared according to experience, significant differences were found between the groups in total score, efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management ($p<.05$).

Games Howell test, one of the post-hoc tests, was used to determine the direction of the differences in teacher self-efficacy according to experience. Accordingly, in the total score and the dimension of efficacy for teaching strategies, the score of teachers with 10-20 years and 20 years and more experience was significantly higher than the score of teachers with 0-5 years of experience; the score of teachers with 20 years and more experience was significantly higher than the score of teachers with 5-10 years of experience. In the dimensions of competence for student engagement and competence for classroom management, the scores of teachers with 10-20 years and 20 years or more experience were significantly higher than those with 0-5 years of experience.

Discussion, Conclusion And Recommendations

The study examined the self-efficacy of early childhood teachers using descriptive statistics for both the overall scale and its sub-dimensions. The findings indicated that early childhood teachers generally exhibit high levels of self-efficacy. Several studies support this result. For instance, Klassen and Chu (2010) found high levels of self-efficacy among early childhood teachers, particularly in the areas of classroom management and student engagement. Similar findings were also reported in previous studies by Gömleksiz and Serhatlıoğlu (2013), Ergun (2015), Semerci and Uyanık Balat (2018), Balci and Kucukoglu (2019), Karabulut (2023), Aslan et al. (2023), and Schaub and Lütolf (2024), which highlighted the high self-efficacy of early childhood teachers in classroom management and student engagement. The literature review suggests that the high self-efficacy of early childhood teachers has a significant impact on learning environments in various ways. According to the research, teachers with high levels of self-efficacy are more open-minded (O'Reilly, Devitt, & Hayes, 2022) and can produce creative solutions to the challenges encountered (Alfonso, 2023). They are able to keep up with the current and technological developments required by the age (Williams et al., 2023; Zhao & Yang, 2023), have more beliefs about the goals to be achieved, and are more self-confident teachers (Tschannen-Moran et al., 1998; Erdoğan, 2023; Zee et al., 2018). In addition, early childhood teachers with high levels of self-efficacy are able to plan inclusive activities that include all children in the classroom and ensure the participation of all children in these activities (D'Agostino & Horton, 2023). Teachers with high self-efficacy could offer creative options in classroom management and early childhood activities that play a critical role in children's development and skills (O'Reilly, Devitt, & Hayes, 2022). Furthermore, they have a higher level of job satisfaction and liking for their

Table 9.

Evaluation of Early Childhood Teachers' Self-Efficacy According to Their Experience

Size	Experience	n	S.O.	x^2	df	p	Difference
Total	0-5 Years	104	92.40	22.56	3	.000**	3,4>1 4>2
	5-10 Years	46	108.23				
	10-20 Years	45	131.34				
	20 Years and above	24	149.63				
Competence for Student Engagement	0-5 Years	104	95.02	17.18	3	.000**	3,4>1
	5-10 Years	46	106.84				
	10-20 Years	45	129.90				
	20 Years and above	24	143.67				
Competence for Instructional Strategies	0-5 Years	104	94.51	20.06	3	.000**	3,4>1 4>2
	5-10 Years	46	105.16				
	10-20 Years	45	129.96				
	20 Years and above	24	148.96				
Competence for Classroom Management	0-5 Years	104	93.24	20.76	3	.000**	3,4>1
	5-10 Years	46	108.20				
	10-20 Years	45	129.92				
	20 Years and above	24	148.73				

*p<.05; **p<.001

profession (Şenol & Ergün, 2015), and increased critical thinking skills and attitudes of both teachers and students (Arslan & Kutluca, 2021). It has emerged that the level of self-efficacy of early childhood teachers is fundamental. These studies show how vital the self-efficacy levels of early childhood teachers are.

Given the current developments, the significance of self-efficacy is increasingly evident. Therefore, it is crucial to have a self-efficacy scale that is relevant to present conditions. The research findings demonstrate that the self-efficacy scale, tailored for early childhood teachers, is reliable and valid. The study thoroughly analyzed the validity and reliability of the adapted scale, yielding positive and robust results. The findings suggest that the adapted Teacher Self-Efficacy Scale is indeed a reliable and valid tool for early childhood teachers. This adaptation is believed to hold significant value for early childhood teachers and the field of early childhood education.

When early childhood teachers' self-efficacy was evaluated according to age groups, the scores of teachers aged 40 years and over were significantly higher than those of teachers aged 18-25 years and 26-30 years in the total score and student engagement and instructional strategies sub-dimensions. In the sub-dimension of classroom management, the score of teachers aged 40 and over was significantly higher than that of teachers aged 18-25. In other words, as early childhood teachers' ages increase, their self-efficacy increases directly. In support of the results, Şenol and Ergün (2015) found that early childhood teachers aged 30 years and older had higher levels than teachers under 30. In addition, Gökmen et al. (2016) found that as the age increases, the self-efficacy levels of early childhood teachers also increase. In addition, Koç and Sak (2017) found a positive relationship between early childhood teachers' age and their self-efficacy. Sağlam (2018) presented a significant difference between the ages of early childhood teachers and their self-efficacy in his study. He concluded that as the age of early childhood teachers increased, their self-efficacy also increased. In addition, Karabulut (2023) found a directly proportional relationship between teachers' ages and their self-efficacy levels. The results of the study in terms of age were similar to most studies. It can be thought that the self-confidence brought by experience with age is the reason for the high level of self-efficacy.

When early childhood teachers' self-efficacy was evaluated according to marital status, significant differences were found between the groups in the total score and the dimensions of efficacy for student engagement and teaching strategies. However, no significant difference was found in the dimension of efficacy for classroom management according to marital status. According to the study conducted by Aslan et al. (2023), no significant difference was found between marital status and self-efficacy of early childhood teachers. Also, Mbongo (2024) found that there is no significant difference between marital status and teachers' self efficacy levels. While these support the research result in the sub-dimension of classroom management, it does not support the dimension of student engagement and teaching strategies. The difference here can be said to be that the Aslan and coworkers's sample included secondary school teachers as well as early childhood teachers. Similarly, Mbongo made his research with high school teachers.

When evaluated according to the department of graduation, which is another variable, no significant difference was found between the groups in total score and all sub-competency dimensions. Similarly, Metin and Aydoğan (2019) found no significant relationship between the department early childhood teachers graduated from and their self-efficacy. The reason for this may be that the contents of the undergraduate programs of child development and early childhood teaching departments are similar.

Another variable used in the data analysis was the early childhood teachers' education level. Accordingly, while there were no significant differences between the groups in the total score and the dimensions of competence for teaching strategies and guidance for classroom management, significant differences were found in the competence dimension for student engagement according to educational level. According to the Games Howell test, in the dimension of efficacy for student engagement, the scores of teachers with associate and postgraduate degrees were significantly higher than those of teachers with bachelor's degrees. In general, no significant relationship was found between education levels and self-efficacy. The reason for the high student participation rate may be that teachers take courses or conduct research that includes different methods for student participation in their master's or doctoral education. Similarly, Semerci and Uyanık Balat (2018) revealed that early childhood teachers with associate's degrees had higher levels of self-efficacy than teachers with graduate and undergraduate degrees. In addition, Aslan et al. (2023) According to the study conducted by the Turkish National Education Association, teachers with postgraduate degrees had more self-efficacy than teachers with undergraduate degrees. These results partially support this study. On the other hand, Sağlam (2018) did not find a significant difference between early childhood teachers' education level and their self-efficacy. The reason for this result may be that not all of the participants at the graduate level graduated from the same department.

After analyzing the data based on experience, significant differences were revealed between

the groups in total score and all sub-competency dimensions. According to the Games Howell test, teachers with 10-20 years and 20 years or more experience scored significantly higher in total score and the dimension of competence for instructional strategies than teachers with 0-5 years of experience. Additionally, teachers with 20 years or more experience scored significantly higher than those with 5-10 years of experience. In student engagement and classroom management, teachers with 10-20 years and 20 years or more experience scored significantly higher than those with 0-5 years of experience. This aligns with the findings of several studies, including Klassen and Chu (2010), Senol and Ergun (2015), Gokmen et al. (2016), Koc and Sak (2017), Saglam (2018), Cetinkaya (2019), and Aslan et al. (2023). The studies mentioned observed a strong positive correlation between early childhood teachers' experience and their self-efficacy. In addition, these results showed similar and expected results regarding the age criterion of the study, which is generally related to experience. However, there are some differing results from other studies. Gömleksiz and Serhatlıoğlu (2013) found no significant relationship between early childhood teachers' self-efficacy and their experience. This difference may be because only 10% of the participants in their study had 10 years or more of experience. Additionally, Infurna, Riter, and Schultz (2018) found no significant difference between early childhood teachers' self-efficacy and experience. This could be because their study was only conducted with teachers working in urban areas, and children in rural areas may create more challenging learning environments than children in urban areas.

This study involved 219 early childhood teachers and focused solely on data collected from this group. To improve the research, it is suggested that a broader range of early childhood teachers be included in future studies. Additionally, experimental studies on various factors that influence the self-efficacy levels of early childhood teachers are recommended. Furthermore, organizing training sessions and seminars to help teachers address current challenges is also advised. It is also recommended that qualitative research be planned to examine in depth the self-efficacy status of preschool teachers.

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