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Resilience and Metacognitive Awareness of Preschool Teacher Candidates

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ABSTRACT

This study aims to examine the resilience and metacognitive awareness of preschool teacher candidates, along with some demographic characteristics. The study is a causal comparative research, one of the relational survey models. A sample group of 236 teacher candidates was selected using simple random sampling method. The Resilience Attitude Skill Scale and the Metacognitive Awareness Scale were used. Since the obtained data showed normal distribution, parametric tests were applied for analysis. According to the gender of teacher candidates, no significant differences were found in the sub-dimensions of the Resilience Attitude Skill scale, namely relationships and values orientation, independence and entrepreneurship, and humor. A significant difference was found in favor of male teacher candidates in the sub-dimensions of resilience, namely insight and creativity. There was no significant gender difference in the Metacognitive Awareness Scale among teacher candidates. The results indicated that the resilience and metacognitive awareness of teacher candidates did not vary according to class levels. A high positive correlation was identified between resilience attitude skill and metacognitive awareness scores. Metacognitive awareness was determined to be predictive of resilience attitude skills, and conversely, resilience attitude skills were found to be predictive of metacognitive awareness.

Keywords: Metacognitive awareness, preschool, resilience, teacher candidates.

Okul Öncesi Öğretmen Adaylarının Psikolojik Sağlamlıkları ile Üstbiliş Farkındalıkları

**Sorumlu yazar*

Süreç
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Bu çalışma ön inceleme sürecinde ve yayımlanmadan önce iThenticate yazılımı ile taranmıştır.

ÖZ

Bu çalışmada, okul öncesi öğretmen adaylarının psikolojik sağlamlıkları ile üst bilişsel farkındalıkları ve bazı demografik özelliklerinin incelenmesi amaçlanmıştır. Çalışma, ilişkisel tarama modellerinden nedensel karşılaştırma araştırmasıdır. Evrenden basit seçkisiz örnekleme yöntemiyle seçilen 236 öğretmen adayı çalışmanın örneklem grubunu oluşturmaktadır. Öğretmen adaylarının psikolojik sağlamlıklarının belirlenmesi için Psikolojik Sağlamlık Tutum Beceri, üst bilişsel farkındalıklarının incelenmesi için Öğretmen Adaylarına Yönelik Üst bilişsel Farkındalık Ölçeği kullanılmıştır. Öğretmen adaylarının cinsiyet değişkenine göre Psikolojik Sağlamlık Tutum Beceri Ölçeğinin alt boyutları olan ilişkiler ve değerler oryantasyonu, bağımsızlık ve girişimcilik, mizah arasında anlamlı farklılık bulunmamıştır. Psikolojik sağlamlığın alt boyutu olan iç görü ve yaratıcılık puanlarında erkek öğretmen adaylarının lehine anlamlı farklılık saptanmıştır. Üst Bilişsel Farkındalık Ölçeği ile öğretmen adaylarının cinsiyetleri arasında anlamlı farklılık bulunmamıştır. Öğretmen adaylarının psikolojik sağlamlıklarının ve üst bilişsel farkındalıklarının sınıf düzeylerine göre değişiklik göstermediği sonucu elde edilmiştir. Psikolojik sağlamlık tutum becerisi ile üst bilişsel farkındalık puanları arasında pozitif yönde yüksek düzeyde korelasyon saptanmıştır. Üst bilişsel farkındalıkların, psikolojik sağlamlık tutum becerileri üzerinde yordayıcı olduğu belirlenmiştir. Benzer şekilde psikolojik sağlamlık tutum becerilerinin, üst bilişsel farkındalıkları belirlemede yordayıcı olduğu tespit edilmiştir.

Anahtar Kelimeler: Okul öncesi, öğretmen adayları, psikolojik sağlamlık, üst bilişsel farkındalık.

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Introduction

Even though the UNESCO Sustainable Development Goals 2030 stress the importance of young people having skills to support sustainable development and lead healthy lives, mental health challenges have become a global concern. The United Nations defines individuals between the ages of 15 and 24 as youth (UNESCO, 2023). Compared to the general population, youth, especially university students, are seen as a group with a higher risk of social pressure, anxiety, and depression, becoming increasingly vulnerable (Browning et al., 2021). University life is a process of adapting to changes between school and social life, and students, in particular, are in a critical transitional period. The changes during this period affect students' psychosocial and emotional development and mental health (Contreras et al., 2017; Wang et al., 2014).

Garmezy (1993) defined resilience as an individual's ability to overcome challenging life circumstances and return to their previous state despite facing these adversities. The literature emphasizes the importance of risk factors that an individual is exposed to in the formation of resilience. Some of these risk factors identified in research include low socioeconomic status (Garmezy, 1993; Gizir, 2007; Karaırmak, 2006), growing up in an oppressive-authoritarian environment (Sameroff, 1989), migration (Gizir, 2007; Karaırmak, 2006), parental psychopathology (Pilowsky et al., 2004), and child neglect and abuse (Lansford et al., 2006). The literature also highlights protective factors that help mitigate or eliminate the negative outcomes brought about by these risk factors. According to researchers, protective factors are categorized into internal protective factors (intelligence, self-esteem, sense of humor, etc.) and external protective factors (supportive family environment, community-related protective factors, etc.) (Gizir, 2007; Karaırmak, 2006; Masten, 2012; Werner, 2000).

Resilience plays a protective role as the ability of young people to cope with challenging living conditions and stressful situations. Low resilience can lead to the development of disorders as a result of encountered difficulties (Campbell Sills et al., 2006; Öz & Yılmaz, 2009; Öztürk & Uluşahin, 2015; Smith & Yang, 2017). Individuals with low and high levels of resilience do not show a difference in the stages of receiving or processing emotional information. The differentiation occurs in the stage where they separate themselves from emotional information. Individuals with low resilience experience positive emotions less and negative emotions more, while those with high resilience can more easily separate themselves from both positive and negative emotions (Yi et al., 2020). It is expected that this difference occurs through metacognitive processes, and coping strategies influence this relationship (Matthews et al., 2019).

Metacognitive processes help regulate and monitor learning while involving prediction, planning, monitoring, and evaluation. They also entail controlling the outcomes of cognitive activities (Desoete et al., 2001). Metacognition includes knowledge about the structure of cognition and various cognitive tasks, as well as the strategies that enable individuals to manage these tasks (Flavell, 2005). Although the cognitive aspect of metacognition has been emphasized, it has been noted that over time, the term has been expanded to encompass not only cognitive processes but also psychological processes (Aydın & Ünsever, 2024). Coping strategies, especially, are suggested to have a regulatory role in the relationship between stress and personality traits (Connor Smith & Compas, 2002). When individuals are exposed to challenging life events and risk factors, positive outcomes in resilience emerge when they use effective coping strategies and adaptation skills with the support of protective factors (Karaırmak, 2006). Therefore, individuals use various coping strategies when faced with adverse living conditions. Metacognitive processes can lead individuals to choose coping strategies such as dysfunctional avoidance and constant monitoring of danger signals (Dunlosky & Metcalfe, 2009). In this way, metacognitive approaches, which are relatively new from a historical perspective, offer new insights into psychological processes (Corcoran & Segal, 2008). It has been stated that metacognition is essential and vital in enhancing resilience. Metacognition promotes a deep level of thinking that involves the ability to reflect on, understand, adapt, modify, control, and manage one's thought processes (Capobianco et al., 2020).

According to Flavell (1979), metacognition is the ability of individuals to be aware of their cognitive processes, evaluate their thoughts, and take actions to organize them. Metacognition involves active control over cognitive processes related to learning, including developing strategies for approaching learning, planning, and monitoring (Whitebread et al., 2010). Individuals' perceptions of the level of their own metacognitive knowledge and metacognitive control processes reveal their metacognitive awareness (Yıldırım & Ersözlü, 2013). Metacognitive awareness is the ability of individuals to define their goals and individual resources in a task process, determine what they know and do not know, identify their motivations and needs, and consciously evaluate themselves in this process (Ertmer & Newby, 1996; Kallio et al., 2018).

In educational research and practices, metacognitive awareness holds great importance in effective learning and teaching processes. The ultimate goal in education is for teachers to ensure effective and lasting learning for children. Teachers have significant responsibilities in supporting children's metacognitive skills. Firstly, teachers should be aware of their metacognitive thinking and characteristics (Jiang et al., 2016; Jones, 2007). Supporting metacognitive skills in teachers from university education onwards is essential for producing individuals who think independently, are aware of their cognitive performance, and decide on strategies to improve these performances (Asy'ari & Ikhsan, 2019). Colker (2008) highlighted

characteristics such as patience, perseverance, and flexibility—traits indicative of resilience—as essential qualities that can make a preschool teacher effective. Given the significant impact of both individual traits and the interaction between individuals and their environment on resilience, identifying variables related to resilience and implementing interventions targeting risk factors to enhance the resilience levels of teacher candidates are crucial. This is important not only for the mental health of the teachers themselves but also for the children in their classrooms and the creation of a healthy school climate (Hoşoğlu et al., 2018). Bouillet et al. (2014) noted that the resilience of preschool teachers is related to the resilience of the children in their classrooms and that teachers can positively influence their students. In this context, it can be stated that the resilience of preschool teacher candidates is critically important for supporting the resilience of young children and for the overall quality of education.

The acquisition of metacognitive awareness is critical in early childhood. Developing metacognitive awareness in this period leads to the development of awareness related to learning skills in later years (Whitebread et al., 2010). Similarly, early childhood experiences are crucial for the development and lifelong shaping of resilience (Barton, 2005; Yoon et al., 2021). In this context, there are studies showing that preschool teachers can strengthen children's metacognitive awareness and resilience (Chatzipanteli et al., 2014; Gray et al., 2017). However, for teachers to be able to provide such support, it is considered important that they gain comprehensive awareness of metacognitive awareness and resilience starting from their university education. This would enable them to develop these qualities themselves, making them better equipped to foster these traits in their students.

In the related literature, limited studies on resilience in teacher candidates have been found. Bordás (2023) stated that presenting resilience as a holistic concept based on system theory with good practice and examples during teacher candidates' education, positively affects their well-being in the profession. Squires et al. (2022) mentioned that more than half of university students experience great stress and anxiety in constantly challenging work environments. In a study by Ng et al. (2018), it was found that providing early field experiences for teacher candidates in Singapore had a positive impact on their resilience. In studies conducted in Turkey, Gülay Ogelman et al. (2023) found a significant and positive relationship between teacher candidates' levels of resilience and their expectations for the future. They also determined that resilience significantly predicted future expectations. Ensar and Gündüz (2022) identified that teacher candidates' levels of resilience were a significant predictor of public speaking anxiety. In a study by Eroğlu (2020), it was found that teacher candidates' resilience levels did not vary based on factors such as where they were born and raised, where they lived during university, or whether their parents were together. However, the study concluded that female teacher candidates had statistically higher resilience scores than their male counterparts. Among these studies, the study conducted by Gülay Ogelman and colleagues (2023) was the only study conducted with preschool teacher candidates.

Similarly, studies on metacognition have been limited in recent years and are relatively scarce. Ford et al. (2023) revealed that participating in virtual simulation experiences enhanced teacher candidates' metacognitive awareness and they were confident in evaluating their metacognitive awareness. Astriani et al. (2020) developed a tool for improving metacognitive skills in university students using the mind mapping technique. In studies conducted in Turkey, there are studies examining the metacognitive skills of teacher candidates in terms of creative thinking areas (Tok, 2022), epistemological beliefs (Akçay & Usta Gezer, 2020), gender, class level, age, and various variables (Alkan & Açıkyıldız, 2020; Özkan & Yıldız, 2023). The study conducted by Tok (2022) focused exclusively on preschool teacher candidates and found a significant relationship between metacognitive awareness and the sub-dimensions of creative thinking (academic, performance, everyday/self, and artistic). The study also revealed that metacognitive awareness significantly predicts creative thinking areas. When examining the literature, studies have been found indicating that metacognition has an effect on resilience (Narayanan, 2009), and that resilience, as a multifaceted structure, plays a role in various cognitive processes (Matthews et al., 2017; Parsons et al., 2016). In addition, no research has been found in our country that examines the resilience and metacognitive awareness of preschool teacher candidates. Considering the gap in the literature and research findings, it is thought that it is important to examine the relationship between the resilience and metacognitive awareness of preschool teacher candidates, especially when thinking about the impact on the quality of the educational environment. Starting from this need, this study aims to examine the resilience and metacognitive awareness of preschool teacher candidates, along with some demographic characteristics.

The research problem statement is defined as "Do metacognitive awareness and resilience of preschool teacher candidates mutually predict each other?" The sub-problem statements are as follows:

1. Does the resilience of preschool teacher candidates differ according to gender and class level?
2. Does the metacognitive awareness of preschool teacher candidates differ according to gender and class level?
3. Is there a significant difference between the resilience and metacognitive awareness of preschool teacher candidates?
4. Is the resilience of preschool teacher candidates a significant predictor of metacognitive awareness?
5. Is the metacognitive awareness of preschool teacher candidates a significant predictor of resilience?

Method

Research Design

This study, conducted to examine the resilience and metacognitive awareness of preschool teacher candidates, along with some demographic characteristics, is a causal comparative research within the framework of relational survey models. Causal comparative research aims to determine the causes of an existing situation or event, the variables influencing these causes, or the results of an effect (Büyüköztürk et al., 2017).

Population and Sample

The population of the study consisted of 364 student teachers in the first, second, third and fourth year of study. The sample group was consisted of 236 teacher candidates selected from the population using simple random sampling. To ensure equality, teacher candidates from different grade levels were included in the study in similar numbers. When examining Table 1, it is observed that 81.80% of the participating teacher candidates are female, while 18.20% are male. Regarding the class levels, 23.70% of teacher candidates are in the first grade, 27.50% in the second grade, 24.20% in the third grade, and 24.60% in the fourth grade.

Data Collection Tools

To determine the resilience of teacher candidates, the Resilience Attitude Skill Scale, developed by Hurtes (1999) and adapted into Turkish by Akar and Aktan (2020), was used. The psychometric properties of the scale were reviewed by Hurtes and Allen (2001). The measurement tool was developed based on Wolin and Wolin's (1993) Damage Model. There are no reverse-coded items in the scale. Higher scores on the scale indicate higher resilience. The scale consists of 34 items and four sub-dimensions (Relationships and values orientation, insight and creativity, independence and entrepreneurship, humor), developed in a 4-point Likert type. Cronbach's alpha values were found to be .86 in the 1st factor, .85 in the 2nd factor, .81 in the 3rd factor, and .79 in the 4th factor. In this study, the Cronbach-Alpha values were calculated as .77 for the 1st factor, .76 for the 2nd factor, .78 for the 3rd factor, and .70 for the 4th factor.

For the examination of metacognitive awareness, the Metacognitive Awareness Scale for Teacher Candidates, developed by Fırat Durdukoca and Arıbaş (2019), was used.

The scale consists of 18 items and three sub-dimensions (Personal awareness, organizational awareness, and judgmental awareness), developed in a 5-point Likert type. The scale ranges from a minimum of 18 to a maximum of 90 points. The Cronbach's Alpha reliability coefficient of the scale was determined as .75. In this study, the Cronbach-Alpha reliability coefficient of the scale was determined to be .93.

Data Collection Process

The ethics committee approval was obtained with decision number 18 dated 10/10/2023 from Dokuz Eylül University. After obtaining the necessary permissions for the conduct of the research, teacher candidates to whom the data collection tools would be applied were determined using a simple random sampling method. A “Voluntary Participation Form” was distributed to teacher candidates, and those who declared their participation participated in the study voluntarily. Before the implementation of data collection tools, participants were informed about the purpose of the research. The applications in each group were completed in approximately 30 minutes.

Data Analysis

In the research, the data obtained were examined for missing values and outliers in the dataset before the analyses. No missing values were found, and in the outlier examination, the data of four teacher candidates were excluded. Statistics related to the normality of the scores are provided in Table 2.

When examining Table 2, it was observed that the obtained data showed a normal distribution, and therefore, it was considered appropriate to apply parametric analysis methods. Tabachnick and Fidell (2013) stated that Kurtosis and Skewness values between ±1.50 in social science research and Büyüköztürk (2017) mentioned that values between ±2.00 could be considered as a normal distribution. Therefore, it is concluded that data in this research is normally distributed.

Table 1. Values Regarding the Demographic Structure of the Group

	Groups	f	%	Val.%	Cum.%
Gender	Female	193	81.80	81.80	81.80
	Male	43	18.20	18.20	100.00
Class Level	1st Grade	56	23.70	23.70	23.70
	2nd Grade	65	27.50	27.50	51.30
	3rd Grade	57	24.20	24.20	75.40
	4th Grade	58	24.60	24.60	100.00

Table 2. Normality Test

	n	y1	β2	Min	Max	x̄	ss
RRVO	236	-.55	-.35	25.00	44.00	37.59	4.22
RIC	236	-.13	-.16	21.00	40.00	32.44	3.87
RIE	236	-.08	-.38	14.00	32.00	25.28	3.63
RH	236	-.48	.14	6.00	20.00	15.50	2.86
RSum	236	-.11	-.26	77.00	135.00	110.81	11.57
MAPA	236	-.60	-.00	11.00	40.00	29.66	5.98
MAOA	236	-.44	-.44	9.00	30.00	22.82	4.74
MAJA	236	-.28	-.69	5.00	20.00	14.33	3.83
MASum	236	-.27	-.47	26.00	90.00	66.81	13.19

Table 3. Independent Group t-test Results for Sub-dimension Scores of the Resilience Attitude Skill Scale and Metacognitive Awareness Scale Based on Gender

Score	Gender	N	Mean	sd	t	df	p
RRVO	Female	193	37.61	4.17	.14	234	.89
	Male	43	37.51	4.47			
RIC	Female	193	32.16	3.94	-2.38	234	.02*
	Male	43	33.70	3.30			
RIE	Female	193	25.12	3.68	-1.36	234	.18
	Male	43	25.95	3.39			
RH	Female	193	15.41	2.94	-1.02	234	.31
	Male	43	15.91	2.48			
RSum	Female	193	110.31	11.72	-1.41	234	.16
	Male	43	113.07	10.74			
MAPA	Female	193	29.68	5.78	.13	234	.90
	Male	43	29.56	6.88			
MAOA	Female	193	22.81	4.70	-.06	234	.95
	Male	43	22.86	5.00			
MAJA	Female	193	14.46	3.74	1.15	234	.25
	Male	43	13.72	4.18			
MASum	Female	193	66.96	12.84	.37	234	.71
	Male	43	66.14	14.79			

In the research, the obtained data were analyzed using the t-test method for independent samples and the one-way ANOVA analysis method for independent samples. Independent sample t-test or One-Way ANOVA was used to analyze the difference of the dependent variable on categorical variables. The relationship between continuous variables was determined using Pearson's correlation coefficient, and prediction levels were identified using simple linear regression analysis. In the research, a significance level of .05 was accepted.

Results

Table 3 presents the results of the independent group t-test for the sub-dimension scores of the Resilience Attitude Skills Scale and the Metacognitive Awareness Scale according to the gender variable of the teacher candidates constituting the sample group.

As seen as Table 3, no significant difference was found between the sub-dimensions of the Resilience Attitude Skills Scale, which are relationships and values orientation, independence and entrepreneurship, humor, and the sub-dimensions of the Metacognitive Awareness Scale, which are personal awareness, organizational awareness, and judgmental awareness, according to the gender variable of the teacher candidates in the sample group (t=.14; -1.36; -1.02; .13; -.06; 1.15; p>.05). Significant differences in favor of male teacher candidates were detected in the scores of the sub-dimension of resilience, namely insight and creativity (t=-2.38; p<.05).

Table 4. Results of one-way analysis of variance (ANOVA) for the sub-dimension scores of the Resilience Attitude Skills Scale and Metacognitive Awareness Scale according to class level

f , $\bar{x}$, sd values					ANOVA Results					
Score	**Group**	N	$\bar{x}$	sd	**Var. K.**	*SoS*	*df*	*MS*	F	p
	1st Grade	56	37.23	4.04	**B.group**	9.69	3	3.23		
	2nd Grade	65	37.71	4.08	**W.group**	4167.26	232	17.96		
RRVO	3rd Grade	57	37.74	4.57	**Sum**	4176.95	235		.18	.91
	4th Grade	58	37.67	4.26						
	Sum	236	37.59	4.22						
	1st Grade	56	31.84	4.34	**B.group**	50.26	3	16.75		
	2nd Grade	65	32.34	3.86	**W.group**	3465.91	232	14.94		
RIC	3rd Grade	57	33.16	3.82	**Sum**	3516.17	235		1.12	.34
	4th Grade	58	32.43	3.40						
	Sum	236	32.44	3.87						
	1st Grade	56	25.48	3.62	**B.group**	6.30	3	2.10		
	2nd Grade	65	25.05	3.72	**W.group**	3098.80	232	13.36		
RIE	3rd Grade	57	25.25	3.61	**Sum**	3105.10	235		.16	.93
	4th Grade	58	25.36	3.66						
	Sum	236	25.28	3.63						
	1st Grade	56	15.11	2.85	**B.group**	14.95	3	4.98		
	2nd Grade	65	15.45	2.73	**W.group**	1910.05	232	8.23		
RH	3rd Grade	57	15.72	2.87	**Sum**	1925.00	235		.61	.61
	4th Grade	58	15.74	3.04						
	Sum	236	15.50	2.86						
	1st Grade	56	109.66	12.56	**B.group**	150.70	3	50.23		
	2nd Grade	65	110.54	10.95	**W.group**	31319.10	232	135.00		
RSum	3rd Grade	57	111.86	12.14	**Sum**	31469.80	235		.37	.77
	4th Grade	58	111.21	10.85						
	Sum	236	110.81	11.57						
	1st Grade	56	29.11	6.44	**B.group**	52.00	3	17.33		
	2nd Grade	65	29.34	5.35	**W.group**	8340.89	232	35.95		
MAPA	3rd Grade	57	29.91	6.77	**Sum**	8392.88	235		.48	.70
	4th Grade	58	30.31	5.40						
	Sum	236	29.66	5.98						
	1st Grade	56	22.30	4.88	**B.group**	71.98	3	23.99		
	2nd Grade	65	22.54	5.08	**W.group**	5228.54	232	22.54		
MAOA	3rd Grade	57	22.70	4.91	**Sum**	5300.53	235		1.06	.36
	4th Grade	58	23.76	4.01						
	Sum	236	22.82	4.75						
	1st Grade	56	14.25	4.40	**B.group**	24.09	3	8.03		
	2nd Grade	65	14.66	3.41	**W.group**	3417.78	232	14.73		
MAJA	3rd Grade	57	13.82	3.70	**Sum**	3441.88	235		.55	.65
	4th Grade	58	14.52	3.85						
	Sum	236	14.33	3.83						
	1st Grade	56	65.66	14.63	**B.group**	269.61	3	89.87		
	2nd Grade	65	66.54	12.72	**W.group**	40614.81	232	175.06		
MASum	3rd Grade	57	66.44	14.23	**Sum**	40884.42	235		.51	.67
	4th Grade	58	68.59	11.20						
	Sum	236	66.81	13.19						

Table 4 presents the results of the one-way analysis of variance (ANOVA) for the sub-dimension scores of the Resilience Attitude Skills Scale and Metacognitive Awareness Scale according to the class level of the teacher candidates.

Table 4 shows that there is no significant difference in the sub-dimensions of the Resilience Attitude Skill Scale, namely relationships and values orientation, insight and creativity, independence and entrepreneurship, humor, and the sub-dimensions of the Metacognitive Awareness Scale, namely personal awareness, organizational awareness, and judgmental awareness, based on the class level variable (F=.18; 1.12; .16; .61; .48; 1.06; .55 p<.05).

The Pearson analysis results for the relationships between the scores of the Resilience Attitude Skill Scale and Metacognitive Awareness Scale for teacher candidates are presented in Table 5.

Table 5. Pearson Analysis Results for the Relationships Between Resilience Attitude Skill Scores and Metacognitive Awareness Scores

Variables	N	r	p
Resilience Metacognitive Awareness	236	.52	.00

Table 6. Effect Size and ANOVA Table for Predicting Resilience Attitude Skill by Metacognitive Awareness

	R	R^2	df	F	p
Regression Sum	.52	.27	1 234	87.22	.00*

*p<.05

Table 7. Results of Simple Linear Regression Analysis Predicting Resilience Attitude Skill by Metacognitive Awareness

Variables	B	Std.Error	β	t	p
Constant	80.27	3.33		24.08	.00
Metacognitive Awareness	.46	.05	.52	9.34	.00

Dependent Variable: Resilience Attitude Skill

Table 8. Effect Size and ANOVA Table for Predicting Metacognitive Awareness by Resilience Attitude Skill

	R	R^2	df	F	p
Regression Sum	.52	.27	1 234	87.22	.00

Table 9. Results of Simple Linear Regression Analysis for Predicting Metacognitive Awareness by Resilience Attitude Skill

Variables	B	Std.Error	β	t	p
Constant	1.00	7.09		.140	.89
Resilience	.59	.06	.52	9.34	.00

As seen in Table 5, a Pearson analysis was conducted to determine whether there is a significant relationship between resilience attitude skill and metacognitive awareness scores. The analysis resulted in a positively significant relationship between the variables (r=.52; p<.05). A high level of correlation has been observed between resilience attitude skill and metacognitive awareness scores (Cohen, 1988).

Table 6 presents the effect size and ANOVA table for predicting Resilience Attitude Skill by Metacognitive Awareness. According to Table 6, the correlation coefficient between metacognitive awareness and resilience in the model was determined to be .52. Metacognitive awareness explains 27% of the variance in resilience attitude skill, leaving approximately 70% of the variance unaccounted for, which may be attributed to different factors. In this context, it can be stated that the regression equation results between the two variables are significant (p<.05).

The results of the simple linear regression analysis predicting Resilience Attitude Skill by Metacognitive Awareness are presented in Table 7. When examining Table 7, the constant coefficient in the regression equation was determined to be 80.27. The partial regression coefficient of metacognitive awareness variable was found to be .46. It is observed that the metacognitive awareness variable is significant (p<.05). The analysis results indicate that the metacognitive awareness of teacher candidates is a statistically significant predictor in determining resilience attitude skills (p<.05). In this context, metacognitive awareness significantly predicts resilience attitude skills in a positive direction.

Table 8 presents the effect size and ANOVA table for predicting Metacognitive Awareness by Resilience Attitude Skill. According to Table 8, the correlation coefficient between resilience and metacognitive awareness in the model is determined to be .52. The resilience attitude skill explains 27% of metacognitive awareness. It is observed that the remaining approximately 70% is dependent on different factors. In this context, it can be stated that the results of the regression equation between the two variables are significant.

The results of the simple linear regression analysis for predicting Metacognitive Awareness by Resilience Attitude Skill are presented in Table 9. Upon examining Table 9, the constant value coefficient in the regression equation is determined to be 1.00. The constant value is not significant. The partial regression coefficient of the resilience attitude skill variable is determined to be .59. It is found that the resilience attitude skill variable is significant (p<.05). The analysis results indicate that the resilience attitude skills of teacher candidates are statistically significant predictors of metacognitive awareness (p<.05). This finding shows that resilience attitude skills significantly predict metacognitive awareness in a positive direction.

Discussion, Conclusion, And Recommendations

In this study, the resilience and metacognitive awareness of preschool teacher candidates were examined with certain demographic characteristics. The study investigated whether there were significant differences in the dimensions of the Resilience Attitude Skill Scale, such as relationships and values orientation, independence and entrepreneurship, and humor, based on the variable of gender. No significant differences were found among these dimensions for male and female participants. When reviewing the relevant literature, it is noteworthy that different studies have yielded diverse results regarding the resilience levels of female and male. Some studies indicate that there is no significant difference in resilience between male and female university students (Kardaş, 2017; Maddi et al., 2006; Oflas, 2017). Conversely, other studies suggest that there are gender differences, with males having higher resilience than females (Dolbier et al., 2007; Atarbay, 2017; Sarwar et al., 2010), while some studies find higher resilience levels in females (Davidson et al., 2005; McGloin & Widom, 2001; Werner, 1995). It is thought that the fact that resilience does not differ or does differ according to gender may be due to differences in research groups, the periods during which the studies were conducted, or societal expectations.

No significant differences were found between the dimensions of metacognitive awareness, including personal awareness, organizational awareness, and judgmental awareness in terms of gender. Studies related to metacognitive awareness in teacher candidates generally support this finding (Abu Snoubar, 2017; Asy'ari & Rosa, 2022; Deliany & Cahyono, 2020; Zhang, 2018). Karakuyu and Uyar (2020) also found no significant difference in meta-cognitive awareness according to gender and emphasized that meta-cognition is related to awareness. Therefore, it can be concluded that preschool teacher candidates' metacognitive awareness did not differ in terms of gender.

The study revealed that the resilience and metacognitive awareness of teacher candidates did not vary according to their class levels. While some studies suggest that resilience increases with class level among university students (Hunter et al., 2012; Wu et al., 2020), others support the finding that resilience does not differ significantly based on class level (Doğrul & Kılıç, 2020; García Martínez et al., 2022). These discrepancies may be attributed to differences in the backgrounds and experiences of participants from various regions, families, and schools. To better understand these differences, it may be essential to compare universities from different regions. Although there are limited studies examining the metacognitive awareness of university students based on class levels, those available do not provide significant differences (Alkan & Açıkyıldız, 2020; Öztürk & Serin, 2020). This lack of distinction might be due to the relatively small age range among university students and the early establishment of metacognitive foundations. In this context, based on the studies conducted, it can be said that the lack of differences in the resilience and metacognition of teacher candidates according to their grade levels in this study may be due to the fact that their age groups are close to each other and that some critical periods have already passed.

A high positive correlation has been identified between resilience attitude skill and metacognitive awareness scores. It was determined that metacognitive awareness predicted resilience attitude skills, and conversely, resilience attitude skills predicted metacognitive awareness. Existing literature supports the relationship between psychological vulnerability and metacognitive beliefs, suggesting that metacognition has a significant impact on resilience (Narayanan, 2009; Nordahl & Wells, 2017). Resilience, on the other hand, is considered a crucial factor in adapting healthily to negative thoughts and emotions about oneself, potentially influencing metacognition (Hagen et al., 2020). Therefore, it can be concluded that this study aligns with the literature, indicating that resilience and metacognitive awareness positively influence each other. The multidimensional approach of this study, considering the sub-dimensions of resilience and metacognitive awareness, sets it apart from other studies.

Based on the findings and results of the study, some educational programs can be implemented to enhance the resilience and metacognitive awareness of teacher candidates. These trainings can be conducted in a mixed format, ensuring that teacher candidates from all grade levels participate together. Various methods and techniques that support the creativity of teacher candidates can be integrated into the courses in the early childhood education undergraduate program. During their university education, early childhood teacher candidates can be provided with opportunities to engage in practices that support resilience and metacognitive awareness in children by offering related recommendations. The importance of supporting children's metacognition and resilience is emphasized in the early childhood education program. The program can include various examples related to these topics. In-service training can be provided to teachers, and topics on metacognition and resilience can be included in family education programs. Conducting similar studies with different groups of teacher candidates from various fields and universities could provide valuable insights. Resilience and metacognition could also be examined in terms of different variables, allowing for a more comprehensive understanding. Comparisons and discussions of the findings of this study with other relevant studies could lead to a deeper understanding of resilience and metacognitive awareness among teacher candidates. Additionally, conducting a qualitative study using a model to explore resilience and metacognitive awareness in greater detail could yield more nuanced results.

Limitations

The study is limited to 236 teacher candidates studying in the Department of Pre-School Education at a state university in the 2023-2024 academic year. The results of the study are also limited to the data collection tools used.

Genişletilmiş Özet

Giriş

UNESCO Sürdürülebilir Kalkınma 2030 Hedeflerinde, gençlerin sağlıklı bir birey olarak sürdürülebilir kalkınmayı teşvik etmek için çeşitli becerilere sahip olmaları önemle belirtilmesine rağmen aralarında buna engel olan ruh sağlığı etkileri küresel bir konu haline gelmiştir (UNESCO, 2023). Genel nüfusla karşılaştırıldığında gençler, özellikle de üniversite öğrencileri daha yüksek düzeyde toplumsal baskı, kaygı ve depresyon riski taşıyan ve giderek daha savunmasız olan bir grup olarak görülmektedir (Browning vd., 2021).

Gençlerin zorlu yaşam şartları ve stresli durumlar karşısında mücadele edebilme ve uyum sağlama gücü olarak psikolojik sağlamlık koruyucu bir role sahiptir. Psikolojik sağlamlığın zayıf olması, karşılaşılan güçlükler sonucunda bozuklukların oluşmasına neden olabilir (Campbell Sills vd., 2006; Öz ve Yılmaz, 2009; Öztürk ve Uluşahin, 2015; Smith ve Yang, 2017).

Yirmi birinci yüzyıl becerilerinden biri olan üst biliş becerilerinin öğretmenlerde üniversite eğitimlerinden itibaren desteklenmesi; bağımsız düşünen, bilişsel performanslarının farkında olan, bu performansları geliştirecek stratejilere karar veren bireyler yetiştirebilmesi açısından önemlidir (Asy'ari ve Ikhsan, 2019).

Üst bilişsel farkındalığın kazanılmasında erken çocukluk dönemi kritik bir öneme sahiptir. Bu dönemde üst bilişsel farkındalığın geliştirilmesi ileriki yıllarda öğrenme becerilerine ilişkin farkındalık geliştirmelerine yol açar (Whitebread vd., 2010). Benzer şekilde psikolojik sağlamlığın gelişmesinde ve yaşam boyu şekillenmesinde de erken çocukluk döneminde mikro ve makro ortamlarından gelen deneyimler önemlidir (Barton, 2005; Yoon vd., 2021). Bu bağlamda okul öncesi öğretmenlerinin, küçük çocukların üst bilişsel farkındalıklarını ve psikolojik sağlamlıklarını güçlendirebileceklerini gösteren çalışmalar bulunmaktadır (Chatzipanteli vd., 2014; Gray vd., 2017). Ancak öğretmenlerin bu tür destekler sağlayabilmesi için üniversite eğitimlerinden itibaren kapsamlı bir şekilde üst bilişsel farkındalığı ve psikolojik sağlamlığı desteklemeye ilişkin farkındalıklar ve bilgiler kazandırılarak, kendilerinin de bu konuda gelişebilen nitelikte olmasının önemli olduğu düşünülmektedir.

Bu çalışmada, okul öncesi öğretmen adaylarının psikolojik sağlamlıkları ile üst bilişsel farkındalıkları ve bazı demografik özelliklerinin incelenmesi amaçlanmıştır.

Araştırmanın problem cümlesi "Okul öncesi öğretmen adaylarının üst biliş farkındalıkları ve psikolojik sağlamlıkları birbirini karşılıklı olarak yordamakta mıdır?" olarak belirlenmiştir. Alt problem cümleleri ise aşağıdaki şekildedir:

1. Okul öncesi öğretmen adaylarının psikolojik sağlamlıkları ile üst bilişsel farkındalıkları cinsiyet ve sınıf düzeyi değişkenlerine göre farklılaşmakta mıdır?
2. Okul öncesi öğretmen adaylarının psikolojik sağlamlıkları ile üst bilişsel farkındalıkları arasında anlamlı farklılık var mıdır?
4. Okul öncesi öğretmen adaylarının psikolojik sağlamlıkları üst bilişsel farkındalıklarının anlamlı bir yordayıcısı mıdır?
5. Okul öncesi öğretmen adaylarının üst bilişsel farkındalıkları psikolojik sağlamlıklarının anlamlı bir yordayıcısı mıdır?

Yöntem

Bu çalışma, ilişkisel tarama modellerinden nedensel karşılaştırma araştırmasıdır. Araştırmanın evrenini birinci, ikinci, üçüncü ve dördüncü sınıfta öğrenim gören 364 öğretmen adayı oluşturmuştur. Evrenden basit seçkisiz örnekleme yöntemiyle seçilen 236 öğretmen adayı örneklem grubunu oluşturmuştur.

Hurtes (1999) tarafından geliştirilen Akar ve Aktan (2020) tarafından Türkçeye uyarlama çalışması yapılan Psikolojik Sağlamlık Tutum Beceri Ölçeği, Fırat Durdukoca ve Arıbaş (2019) tarafından geliştirilen Öğretmen Adaylarına Yönelik Üst Bilişsel Farkındalık Ölçeği kullanılmıştır.

Etik kurul onayı Dokuz Eylül Üniversitesi'nden 10/10/2023 tarih ve 18 sayılı kararla alınmıştır. Basit seçkisiz örnekleme yöntemi ile öğretmen adaylarına "Gönüllü Katılım Formu" dağıtılmış olup katılımlarını beyan eden kişiler gönüllükleri doğrultusunda çalışmaya katılmışlardır. Her grupta uygulamalar yaklaşık olarak 30 dakikada tamamlanmıştır.

Araştırmada elde edilen veriler bağımsız örneklemler için t testi yöntemi, ilişkisiz örneklemler için tek yönlü ANOVA analiz yöntemi, Pearson Korelasyon katsayısı, basit doğrusal regresyon analizi ile saptanmıştır.

Sonuç

Öğretmen adaylarının cinsiyet değişkenine göre Psikolojik Sağlamlık Tutum Beceri Ölçeğinin alt boyutları olan ilişkiler ve değerler oryantasyonu, bağımsızlık ve girişimcilik, mizah arasında anlamlı farklılık bulunmamıştır. Psikolojik sağlamlığın alt boyutu olan iç görü ve yaratıcılık puanlarında erkeklerin lehine anlamlı farklılık saptanmıştır. Üst bilişsel Farkındalık Ölçeğinin alt boyutları olan kişisel farkındalık, organizasyonel farkındalık ve yargısal farkındalık ile öğretmen adaylarının cinsiyetleri arasında anlamlı farklılık bulunmamıştır. Öğretmen adaylarının psikolojik sağlamlıklarının ve üst bilişsel farkındalıklarının sınıf düzeylerine göre değişiklik göstermediği sonucu elde edilmiştir. Psikolojik sağlamlık tutum becerisi ile üst bilişsel farkındalık puanları arasında pozitif yönde yüksek düzeyde korelasyon saptanmıştır. Üst bilişsel farkındalıkların, psikolojik sağlamlık tutum becerileri üzerinde yordayıcı olduğu belirlenmiştir. Benzer şekilde psikolojik sağlamlık tutum becerilerinin, üst bilişsel

farkındalıkları belirlemede yordayıcı olduğu tespit edilmiştir.

Tartışma

İlgili literatür incelendiğinde kadınların ve erkeklerin psikolojik sağlamlık düzeylerine ilişkin farklı sonuçlar elde edildiği dikkat çekmektedir. Üniversite öğrencilerinin psikolojik sağlamlıklarının cinsiyete göre farklılaşmadığını gösteren çalışmalar bulunmaktadır (Kardaş, 2017; Maddi vd., 2006; Oflas, 2017). Buna karşın psikolojik sağlamlığın cinsiyete göre farklılaştığını gösteren çalışmalar mevcuttur. Erkeklerin psikolojik sağlamlığının kadınlara göre daha yüksek olduklarını saptayan çalışmalar bulunmaktadır (Dolbier vd., 2007; Atarbay, 2017; Sarwar vd., 2010). Bazı araştırmalarda ise kadınların psikolojik sağlamlık düzeylerinin erkeklerden daha yüksek olduğu belirlenmiştir (Davidson vd., 2005; McGloin ve Widom, 2001; Werner, 1995). Psikolojik sağlamlığın cinsiyete göre farklılaşmaması ya da farklılaşmasının, araştırma gruplarındaki farklılıklardan, çalışmaların yapıldığı dönemlerden ya da toplumsal beklentilerden kaynaklanabileceği düşünülmektedir.

Literatürde üniversite öğrencilerinin psikolojik sağlamlıklarının sınıf düzeylerine göre farklı sonuçlar bulunduğu görülmektedir. Sınıf düzeyi artıkça psikolojik sağlamlığın da artış gösterdiğini saptayan çalışmalara rastlanmıştır (Hunter vd., 2012; Wu vd., 2020). Öte yandan bu çalışma ile paralel bir şekilde, psikolojik sağlamlığın sınıf düzeyine göre farklılık göstermediğini belirten çalışmalar mevcuttur (Doğrul ve Kılıç, 2020; García Martínez vd., 2022).

Literatür incelendiğinde psikolojik kırılganlığın üst bilişsel inançlarla ilişkili olduğu, üst bilişin psikolojik sağlamlık üzerinde anlamlı bir etkiye sahip olduğu görülmektedir (Narayanan, 2009; Nordahl ve Wells, 2017). Psikolojik sağlamlık ise kişinin kendisi ile ilgili olumsuz düşünce ve duygulara sağlıklı bir şekilde uyum sağlamasında önemli bir etken olarak belirtilerek üst biliş üzerinde etkisinin olabileceği ifade edilmiştir (Hagen vd., 2020). Bu bağlamda bu çalışma doğrultusunda literatürü de destekleyecek şekilde psikolojik sağlamlık ve üst bilişsel farkındalığın birbirleri üzerinde olumlu yönde etkilerinin olduğu söylenebilir.

Öneri

Öğretmen adaylarının psikolojik sağlamlık ve üst biliş farkındalıklarının geliştirilmesine ilişkin her sınıf düzeyinden öğretmen adaylarının bulunacağı bir şekilde karma olarak eğitimler verilebilir. Üniversite eğitimlerinde okul öncesi öğretmen adaylarına çocuklarda psikolojik sağlamlık ve üst biliş farkındalıklarını destekleyici öneriler sunularak uygulamalar yapmasına fırsat verecek ortamlar sunulabilir. Okul öncesi eğitim programında çocukların üst bilişlerini ve psikolojik sağlamlıklarını desteklemenin önemine değinilmektedir. Bu konulara ilişkin programda çeşitli örneklendirmeler sunulabilir. Öğretmenlere hizmetiçi eğitimler verilebilir. Aile eğitimlerine üst biliş ve psikolojik sağlamlık konuları dahil edilebilir. Farklı alanlardaki ve üniversitelerdeki öğretmen adayları ile örneklem grubu değiştirilerek çalışma yapılabilir. Psikolojik sağlamlık ve üst biliş farklı değişkenler açısından incelenebilir. Nitel model ile daha ayrıntılı sonuçlar elde edilebilir.

Sınırlılıklar

Çalışma 2023-2024 eğitim-öğretim yılında bir devlet üniversitesinde Okul Öncesi Eğitimi Anabilim Dalı'nda öğrenim gören 236 öğretmen adayı ile sınırlıdır. Çalışmanın sonuçları kullanılan veri toplama araçlarıyla sınırlıdır.

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Kaynaklar

Abu Snoubar, T. (2017). Gender differences in metacognitive reading strategy use among English as a foreign language students at Al-Balqa Applied University. *Journal of Education and Practice, 8*(18), 1-12.

Akar, A., & Aktan, T. (2020). Adaptation of the resiliency attitude and skills profile into Turkish: A validity and reliability study. *Electronic Journal of Social Sciences, 19*(74), 665-679. https://doi.org/10.17755/esosder.574101

Akçay, B., & Usta Gezer, S. (2020). Comparison of preservice teachers' epistemological beliefs and metacognitive awareness across domains. *Sakarya University Journal of Education Faculty, 20*(1), 1-23.

Alkan, S., & Açıkyıldız, G. (2020). Metacognitive awareness of candidate teachers. *Journal of Bayburt Education Faculty, 15*(29), 43-63. https://doi.org/10.35675/befdergi.478133

Astriani, D., Susilo, H., Suwono, H., Lukiati, B., & Purnomo, A. (2020). Mind mapping in learning models: A tool to improve student metacognitive skills. *International Journal of Emerging Technologies in Learning (iJET)*, *15*(6), 4-17.

Asy'ari, M., & da Rosa, C. T. W. (2022). Prospective teachers' metacognitive awareness in remote learning: Analytical study viewed from cognitive style and gender. *International Journal of Essential Competencies in Education*, *1*(1), 18–26. https://doi.org/10.36312/ijece.v1i1.731

Asy'ari, M., & Ikhsan, M. (2019). The effectiveness of inquiry learning model in improving prospective teachers' metacognition knowledge and metacognition awareness. *International Journal of Instruction*, *12*(2), 455-470. https://doi.org/10.29333/iji.2019.12229a

Atarbay, S. (2017). *The effects of social anxiety on resilience of university students studying at different programs* [Master's thesis]. İstanbul Universtiy.

Aydın, E., & Ünsever, Ö. (2024). Essence, encourage, and evaluation of metacognition in early childhood. *Journal of Education for Life, 38*(2), 482-500. https://doi.org/10.33308/26674874.2024382696

Barton, W. H. (2005). Methodological challenges in the study of resilience. *Handbook for working with children and youth: Pathways to resilience across cultures and contexts*, 135-147.

Bordás, A. (2023). Investigation of resilience among teachers and in teacher education. *Central European Journal of Educational Research, 5*(1), 24–36. https://doi.org/10.37441/cejer/2023/5/1/11119

Bouillet, D., Pavin Ivanec, T., & Miljević-Riđički, R. (2014). Preschool teachers' resilience and their readiness for building children's resilience. *Health Education*, *114*(6), 435-450.

Browning, M. H. E. M., Larson, L. R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach, L., Cloutier, S., Vu, T. M., Thomsen, J., Reigner, N., Metcalf, E. C., D'Antonio, A., Helbich, M., Bratman, G. N., & Alvarez, H. O. (2021). Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PLos One, 16*(1), e0245327. https://doi.org/10.1371/journal.pone.0245327

Büyüköztürk, Ş., Çakmak, K., Akgün, E., Özcan, E., Karadeniz, Ş., & Demirel, F. (2017). *Bilimsel araştırma yöntemleri [Scientific research methods].* Pegem Academy.

Campbell Sills, L., Cohan, S. L., & Stein, M. B. (2006). Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. *Behaviour research and therapy*, *44*(4), 585-599. https://doi.org/10.1016/j.brat.2005.05.001

Capobianco, L., Faija, C., Husain, Z., & Wells, A. (2020). Metacognitive beliefs and their relationship with anxiety and depression in physical illnesses: A systematic review. *PloS one*, *15*(9), e0238457. https://doi.org/10.1371/journal.pone.0238457

Chatzipanteli, A., Grammatikopoulos, V., & Gregoriadis, A. (2014). Development and evaluation of metacognition in early childhood education. *Early Child Development and Care, 184*(8), 1223–1232. https://doi.org/10.1080/03004430.2013.861456

Colker, L. J. (2008). Twelve characteristics of effective early childhood teachers. *YC: Young Children*, *63*(2).

Connor Smith, J. K., & Compas, B. E. (2002). Vulnerability to social stress: Coping as a mediator or moderator of sociotropy and symptoms of anxiety and depression. *Cognitive Therapy and Research, 26*(1), 39–55. https://doi.org/10.1023/A:1013889504101

Contreras, M., de León, A. M., Martínez, E., Peña, E. M., Marques, L., & Gallegos, J. (2017). Psychopathological symptoms and psychological wellbeing in mexican undergraduate students. *International journal of social science studies*, *5*(6), 30.

Corcoran, K. M., & Segal, Z. V. (2008). Metacognition in depressive and anxiety disorders: Current directions. *International Journal of Cognitive Therapy, 1*(1), 33-44.

Davidson, J. R. T., Payne, V. M., Connor, K. M., Foa, E. B., Rothbaum, B. O., Hertzberg, M. A., & Weisler, R. H. (2005). Trauma, resilience and saliostasis: Effects of treatment in posttraumatic stress disorder. *International Clinical Psychopharmacology, 20,* 43–48. https://doi.org/10.1097/00004850-200501000-00009

Deliany, Z., & Cahyono, B. Y. (2020). Metacognitive reading strategies awareness and metacognitive reading strategies use of EFL university students across gender. *Studies in English Language and Education, 7*(2), 421-437. https://doi.org/10.24815/siele.v7i2.17026

Desoete, A., Roeyers, H., & Buysse, A. (2001). Metacognition and mathematical problem solving in grade 3. *Journal of learning disabilities*, *34*(5), 435-447.

Doğrul, H., & Kılıç, F. (2020). Investigation of pre-school teacher's attitudes towards teaching rofession in terms of different variables. *Journal of University Research, 3*(2), 49-57. https://doi.org/10.32329/uad.699452

Dolbier, C. L., Smith, S. E., & Steinhardt, M. A. (2007). Relationships of protective factors to stress and symptoms of illness. *American Journal of Health Behavior, 3*(4), 423-433.

Dunlosky, J., & Metcalfe, J. (2009). *Metacognition.* Sage.

Ensar, F., & Gündüz, A. (2022). The relationship between pre-service teachers' resilience and public speaking anxiety. *Journal of Mother Tongue Education, 10*(1), 266-276. https://doi.org/10.16916/aded.946373

Eroğlu, M. (2020). Investigation of psychological resilience of preservice teachers. *Journal of Education and New Approaches, 3*(2), 80-86.

Ertmer, P. A., & Newby, T. J. (1996). The expert learner: Strategic, self-regulated, and reflective. *Instructional Science, 24*(1), 1–24. https://doi.org/10.1007/BF00156001

Fırat Durdukoca, Ş., & Arıbaş, S. (2019). Development of metacognitive awareness scale for teacher candidates. *Electronic Journal of Social Sciences, 18*(72), 1541-1557. https://doi.org/10.17755/esosder.474601

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist, 34*(10), 906–911. https://doi.org/10.1037/0003-066X.34.10.906

Flavell, J. H. (2005). Development of children's knowledge about the mental world. In *Growing Points in Developmental Science* (pp. 102-122). Psychology Press.

Ford, D. J., Luke, S. E., Vaughn, S. M., & Fulchini-Scruggs, A. (2023). Virtual simulations to practice whole group discussions: Preservice teachers' metacognitive awareness. *Journal of Educational Technology Systems*, *52*(1), 73-95. https://doi.org/10.1177/00472395231184566

García Martínez, I., Augusto-Landa, J. M., Quijano-López, R., & León, S. P. (2022). Self-concept as a mediator of the relation between university students' resilience and academic achievement. *Frontiers in Psychology*, *12*, 747168. https://doi.org/10.3389/fpsyg.2021.747168

Garmezy, N. (1993). *Children in poverty: Resilience despite risk. Psychiatry,* 56, 127-136.

Gizir, C. (2007). A literature review of studies on resilience, risk, and protective factors. *Turkish Psychological Counseling and Guidance Journal*, *3*(28), 113-128.

Gray, C., Wilcox, G., & Nordstokke, D. (2017). Teacher mental health, school climate, inclusive education and student learning: A review. *Canadian Psychology, 58*(3), 203–210. https://doi.org/10.1037/cap0000117

Gülay Ogelman, H., Amca Toklu, D., & Özbilen, A. E. (2023). Examination of resilience and future expectations of preschool teacher candidates. *Turkish Journal of Education, 8*(1), 106-119. https://doi.org/10.54979/turkegitimdergisi.1260355

Hagen, R., Havnen, A., Hjemdal, O., Kennair, L. E. O., Ryum, T., & Solem, S. (2020). Protective and vulnerability factors in self-esteem: the role of metacognitions, brooding, and resilience. *Frontiers in psychology*, *11*, 1447.

Hoşoğlu, R., Kodaz, A. F., Bingöl, T. Y., & Batık, M. V. (2018). The resilient levels of preservice teachers. *OPUS International Journal of Society Researches*, *8*(14), 217-239. https://doi.org/10.26466/opus.405751

Hunter, M. S., Keup, J. R., Kinzie, J., & Maietta, H. (2012). *The senior year: Culminating experiences and transitions.* University Oof South Carolina.

Hurtes, K. (1999). *The development of a measure of resiliency in youth for recreation and other social services* [Unpublished doctoral dissertation]. Clemson University.

Hurtes, K. P., & Allen, L.R. (2001), Measuring resiliency in youth: The resiliency attitudes and skills profile. *Therapeutic Recreation Journal, 35*(4), 333-347.

Jiang, Y., Ma, L., & Gao, L. (2016). Assessing teachers' metacognition in teaching: The teacher metacognition inventory. *Teaching and Teacher Education*, *59*, 403-413. https://doi.org/10.1016/j.tate.2016.07.014

Jones, D. (2007). Speaking, listening, planning and assessing: The teacher's role in developing metacognitive awareness. *Early Child Development and Care*, *177*(6-7), 569-579. https://doi.org/10.1080/03004430701378977

Kallio, H., Virta, K., & Kallio, M. (2018). Modelling the components of metacognitive awareness. *International Journal of Educational Psychology, 7*(2), 94-122. https://doi.org/10.17583/ijep.2018.2789

Karaırmak, Ö. (2006). Resilience, risk and protective factors. *Turkish Psychological Counseling and Guidance Journal*, *3*(26), 129-142.

Karakuyu, A., & Uyar, A. (2020). A research on pre-service teachers' metacognition. *Route Educational & Social Science Journal, 7*(9), 334-343. https://doi.org/10.17121/ressjournal.2784

Kardaş, F. (2017). *Testing a model on the college students: interaction of positive feelings and personal resources* [Doctoral dissertation]. Ankara University

Lansford, J. E., Malone, P. S., Stevens, K. I., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2006). Developmental trajectories of externalizing and internalizing behaviors: Factors underlying resilience in physically abused children. *Development and Psychopathology*, *18*(1), 35-55.

Maddi, S. R., Harvey, R. H., Khoshaba, D. M., Lu, J. L., Persico, M., & Brow, M. (2006). The personality construct of hardiness, III: Relationships with repression, innovativeness, authoritarianism, and performance. *Journal of Personality, 74*(2), 575-598.

Masten, A. S. (2012). Resilience in individual development: Successful adaptation despite risk and adversity. In *Educational resilience in inner-city America* (pp. 3-25). Routledge.

Matthews, G., Lin, J., & Wohleber, R. (2017). Personality, stress and resilience: A multifactorial cognitive science perspective. *Psihologijske Teme, 26*(1), 139–162. https://doi.org/10.31820/pt.26.1.6

Matthews, K. M., Newcomb, E. T., Morgan, C. A., Chen, T., & Vanderburg, N. (2019). Effects of emulation training on activities of daily living and job-related skills. *Behavior Analysis: Research and Practice, 19*(4), 379–388. https://doi.org/10.1037/bar0000161

McGloin, J. M., & Widom, C. S. (2001). Resilience among abused and neglected children grown up. *Development and Psychopathology, 13,* 1021–1038.

Narayanan, A. (2009). Resilience, metacognition and complexity. *Journal of the Indian Academy of Applied Psychology, 35*(spec iss), 112–118.

Ng, P. T., Lim, K. M., Low, E. L., & Hui, C. (2018). Provision of early field experiences for teacher candidates in Singapore and how it can contribute to teacher resilience and retention. *Teacher Development*, *22*(5), 632-650. https://doi.org/10.1080/13664530.2018.1484388

Nordahl, H., & Wells, A. (2017). Individual differences in metacognitive knowledge contribute to psychological vulnerability more than the presence of a mental disorder does. *Mental Health & Prevention*, *7*, 17-20.

Oflas, G. S. (2017). *Predicting the psychoogical resilience levels of college students according to gender roles, intercultural sensitivity and risk factors* [Master's thesis]. Yıldız Teknik Universtiy.

Öz, F., & Yılmaz E. B. (2009). A significant concept in protecting mental health: Resilience. *Journal of Hacettepe University School of Nursing, 16*(3), 82-89.

Özkan, B., & Yıldız, E. (2023). Metacognitive awareness of preschool teacher candidates. *The Journal of Buca Faculty of Education,* 2039-2058. https://doi.org/10.53444/deubefd.1317779

Öztürk, M. O., & Uluşahin, A. (2015). *Ruh sağlığı ve bozuklukları [Mental health and mental disorders].* Nobel Tıp Kitapları.

Öztürk, S., & Serin, M. K. (2020). Examination of pre-service primary school teachers' metacognitive awareness with anxiety towards mathematics teaching. *Kastamonu Education Journal, 28*(2), 1013–1025. https://doi.org/10.24106/kefdergi.705074

Parsons, S., Kruijt, A. W., & Fox, E. (2016). A cognitive model of psychological resilience. *Journal of Experimental Psychopathology*, *7*(3), 296-310. https://doi.org/10.5127/jep.053415

Sameroff, A. J., & Emde, R. (1989). *Relationship disturbances in early childhood: A developmental approach.* Basic Books.

Sarwar, M., Inamullah, H., Khan, N., & Anwar, N. (2010). Resilience and academic achievement of male and female secondary level students in Pakistan. *Journal of College Teaching & Learning, 7*(8), 19-24.

Smith G. D., & Yang F. (2017). Stress, resilience and psychological well-being in Chinese undergraduate nursing students. *Nurse Education Today*, 49, 90–95. https://doi.org/10.1016/j.nedt.2016.10.004

Squires, V., Walker, K., & Spurr, S. (2022). Understanding self perceptions of wellbeing and resilience of preservice teachers. *Teaching and Teacher Education*, *118*, 103828. https://doi.org/10.1016/j.tate.2022.103828

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*. Pearson.

Tok, E. (2022). Pre-service preschool teachers' metacognitive awareness and creative thinking domains. *Shanlax International Journal of Education*, *10*(3), 71-78.

UNESCO (2023, October 30). *Turkish National Commission for UNESCO*. https://www.unesco.org.tr/

Wang, L., He, C. Z., Yu, Y. M., Qiu, X. H., Yang, X. X., Qiao, Z. X., ... & Yang, Y. J. (2014). Associations between impulsivity, aggression, and suicide in Chinese college students. *BMC public health*, *14*(1), 1-8.

Werner, E. E. (1995). Resilience in development. *Current Directions in Psychological Science, 4*(3), 81 85. https://doi.org/10.1111/1467-8721.ep10772327

Werner, E. E. (2000). Protective factors and individual resilience. *Handbook of Early Childhood Intervention*, *2*, 115-132.

Whitebread, D., Almeqdad, Q., Bryce, D., Demetriou, D., Grau, V., & Sangster, C. (2010). Metacognition in young children: Current methodological and theoretical developments. in A. Efklides & P. Misailidi (Eds.), *Trends and prospects in metacognition research* (pp. 233–258). Springer Science + Business Media. https://doi.org/10.1007/978-1-4419-6546-2_11

Wolin, S. J., & Wolin, S. (1993). *The resilient self - how survivors of troubled families rise above adversity.* Villard Books.

Wu, Y., Sang, Z. Q., Zhang, X. C., & Margraf, J. (2020). The relationship between resilience and mental health in Chinese college students: A longitudinal cross-lagged

analysis. *Frontiers in Psychology*, *11*, 108. https://doi.org/10.3389/fpsyg.2020.00108

Yıldırım, S., & Ersözlü, Z. N. (2013). The relationship between students' metacognitive awareness and their solutions to similar types of mathematical problems. *Eurasia Journal of Mathematics, Science and Technology Education*, *9*(4), 411-415.

Yi, F., Li, X., Song, X., & Zhu, L. (2020). The underlying mechanisms of psychological resilience on emotional experience: Attention-bias or emotion disengagement. *Frontiers in Psychology*, *11*, 1993. https://doi.org/10.3389/fpsyg.2020.01993

Yoon, S., Maguire Jack, K., Knox, J., & Ploss, A. (2021). Socio-ecological predictors of resilience development over time among youth with a history of maltreatment. *Child Maltreat 26*(2), 162–171. https://doi.org/10.1177/1077559520981151

Zhang, L. (2018). *Metacognitive and cognitive strategy use in reading comprehension.* Springer.