THE RELATIONSHIP BETWEEN PRESCHOOL CHILDREN'S METACOGNITIVE SKILLS AND RESILIENCE OF THEIR FAMILIES AND TEACHERS

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

NAZLI BERFİN YAPAR

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
THE DEPARTMENT OF ELEMENTARY AND EARLY CHILDHOOD EDUCATION, EARLY CHILDHOOD EDUCATION

AUGUST 2023

Approval of the thesis:

THE RELATIONSHIP BETWEEN PRESCHOOL CHILDREN'S METACOGNITIVE SKILLS AND RESILIENCE OF THEIR FAMILIES AND TEACHERS

submitted by **NAZLI BERFİN YAPAR** in partial fulfillment of the requirements for the degree of **Master of Science in Elementary and Early Childhood Education, Early Childhood Education, the Graduate School of Social Sciences of Middle East Technical University** by,

Prof. Dr. Sadettin KİRAZCI
Dean
Graduate School of Social Sciences _____

Prof. Dr. Feyza TANTEKİN ERDEN
Head of Department
Department of Elementary and Early Childhood Education _____

Assoc. Prof. Dr. Hasibe Özlen DEMİRCAN
Supervisor
Department of Elementary and Early Childhood Education _____

Examining Committee Members:

Assoc. Prof. Dr. Selda ARAS (Head of the Examining Committee)
Hacettepe University
Department of Elementary and Early Childhood Education _____

Assoc. Prof. Dr. Hasibe Özlen DEMİRCAN (Supervisor)
Middle East Technical University
Department of Elementary and Early Childhood Education _____

Prof. Dr. Feyza TANTEKİN ERDEN
Middle East Technical University
Department of Elementary and Early Childhood Education _____

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last Name: Nazlı Berfin YAPAR

Signature:

ABSTRACT

THE RELATIONSHIP BETWEEN PRESCHOOL CHILDREN'S METACOGNITIVE SKILLS AND RESILIENCE OF THEIR FAMILIES AND TEACHERS

YAPAR, Nazlı Berfin
M.S., The Department of Elementary and Early Childhood Education, Early Childhood Education
Supervisor: Assoc. Prof. Dr. Hasibe Özlen DEMİRCAN

August 2023, 280 pages

This study aimed to explore the relationship between the metacognitive skills of preschool children and the resilience of their families and teachers by investigating the possible effects of demographic variables. Accordingly, an explanatory correlational research design was chosen. Data were collected from 40 preschool teachers, 208 preschool children, and their families living in Ankara, Türkiye. Six instruments were used to collect the data: a demographic information form for families, and one for preschool teachers, the Family Resilience Assessment Scale, the Psychological Resilience Scale for Adults, the Train Track Task, and the Children's Independent Learning Development Checklist. Descriptive analyses were conducted to examine differences and correlations among the variables. Furthermore, path analysis was performed to investigate direct and indirect relationships among the study variables.

The descriptive analyses' results indicated that preschool children's metacognitive skills differ regarding their gender, parental education level, and family income. Additionally, parents' gender, educational status, and family income influenced family

resilience, while teacher educational status and income affected teacher resilience. Moreover, a positive relationship was found between the metacognitive skills of preschool children and the resilience of their families and teachers. The results of the path analysis confirmed that family and teacher resilience significantly and positively predicted preschool children's metacognitive skills. Furthermore, the demographic variables were found to significantly influence preschool children's metacognitive skills, either directly or through the mediation of family and teacher resilience. To conclude, the current study demonstrates that resilient families and teachers can strengthen and support metacognitive skill development in preschool children.

Keywords: Metacognitive skills, preschool children, family resilience, teacher resilience, early childhood education

ÖZ

ERKEN ÇOCUKLUK DÖNEMİNDEKİ ÇOCUKLARIN ÜSTBİLİŞSEL BECERİLERİ İLE AİLELERİNİN VE ÖĞRETMENLERİNİN YILMAZLIKLARI ARASINDAKİ İLİŞKİ

YAPAR, Nazlı Berfin
Yüksek Lisans, Temel Eğitim, Okul Öncesi Eğitimi Bölümü
Tez Yöneticisi: Doç. Dr. Hasibe Özlen DEMİRCAN

Ağustos 2023, 280 sayfa

Bu çalışmanın amacı, erken çocukluk dönemindeki çocukların üstbilişsel becerileriyle ailelerinin ve okul öncesi öğretmenlerinin yılmazlıkları arasındaki ilişkiyi çeşitli demografik değişkenler açısından incelemektir. Bu amaçla, açıklayıcı ilişkisel araştırma deseni kullanılmıştır. Araştırmaya Ankara'da yaşayan 40 okul öncesi öğretmeni, erken çocukluk dönemindeki 208 çocuk ve aileleri katılmıştır. Veriler, aileler ve okul öncesi öğretmenleri için demografik bilgi formları, Aile Yılmazlığı Değerlendirme Ölçeği, Yetişkinler için Psikolojik Dayanıklılık Ölçeği, Tren Rayı Görevi ve Okul Öncesi Çocuklar için Bağımsız Öğrenme Davranışları Ölçeği 3-5 ile toplanmıştır. Değişkenler arasındaki farklılıkları ve ilişkileri incelemek için betimsel analizler yapılmıştır. Ayrıca, çalışma değişkenleri arasındaki doğrudan ve dolaylı ilişkiler yol analiziyle araştırılmıştır.

Betimsel analiz sonuçları, erken çocukluk dönemindeki çocukların üstbilişsel becerilerinin cinsiyet, ebeveynlerinin eğitim düzeyi ve ailelerin gelirine göre farklılaştığını göstermiştir. Ayrıca, ebeveynlerin cinsiyetinin, eğitim düzeyinin ve aile gelirinin aile yılmazlığını etkilediği bulunurken, öğretmenlerin eğitim düzeyinin ve

gelirinin de öğretmen yılmazlığını etkilediği bulunmuştur. Ek olarak, erken çocukluk dönemindeki çocukların üstbilişsel becerileriyle ailelerinin ve öğretmenlerinin yılmazlığı arasında pozitif bir ilişki olduğu sonucuna ulaşılmıştır. Yol analizinin sonuçları, ailelerin ve öğretmenlerin yılmazlıklarının erken çocukluk dönemindeki çocukların üstbilişsel becerilerini anlamlı ve pozitif olarak yordadığını göstererek bu bulguyu desteklemiştir. Buna ek olarak, demografik değişkenlerin erken çocukluk dönemindeki çocukların üstbilişsel becerilerini doğrudan ya da aile ve öğretmen yılmazlığının aracılığıyla önemli ölçüde etkilediği bulunmuştur. Bu çalışma, yılmaz ailelerin ve öğretmenlerinin erken çocukluk dönemindeki çocukların üstbilişsel becerilerinin gelişimini destekleyebileceğini göstermiştir.

Anahtar Kelimeler: Üstbilişsel beceriler, erken çocukluk dönemindeki çocuklar, aile yılmazlığı, öğretmen yılmazlığı, erken çocukluk eğitimi

To all the mistakes and failures that make us who we are…

ACKNOWLEDGMENTS

This master's period has made me realize once again how lucky I am in life. I would like to thank all the valuable people in my life who made me excited to write this section and supported me throughout this process. First, I would like to express my sincere gratitude to my supervisor, Assoc. Prof. Dr. Hasibe Özlen Demircan for her warm, constructive, and enlightening attitude. Thanks to her academic knowledge and experience, I could design and perform the study. However, I am grateful for her not only for her academic vision but also for her contributions as a human being. Without her support and guidance, this period would have been very challenging for me. I feel lucky to have the chance to work with her and be her student.

Furthermore, I would like to thank my thesis committee members, Prof. Dr. Feyza Tantekin Erden and Assoc. Prof. Dr. Selda Aras, for their constructive feedback and valuable contributions. Their suggestions have significantly strengthened my research, allowing me to perceive and enhance various aspects of my study.

I would also like to thank Dr. Donna Bryce for being such a welcoming, supportive, and encouraging researcher. Without her quick responses and constructive feedback, I would have had a hard time completing this study. Meeting her is one of the most important and inspiring contributions of this thesis process, which I am grateful for.

I would like to thank all the teachers, parents, and children who participated and contributed to the data collection of this study. Without their consent and willingness, the data collection period could even be longer. The children's happiness when they saw the train track pieces and played with them inspired and motivated me to eliminate all my tiredness in the data collection process.

I would like to thank my beloved mother, Hamdiye Yapar, my dear father, Ali Nihat Yapar, and my precious brother Fahrettin Sertaç Yapar. I am grateful for you not just in my master's period but for my whole life. You are always there for and supporting me, which I am very thankful for. My biggest luck is being a Yapar, and we really did!

I also want to express my sincere gratitude to Kıymet Yetiş, who is also family to me. Thank you very much for always supporting me and doing everything you can for me. Your belief in me has increased my belief in myself as well. I am fortunate to have you in my life. I could not wait to share this thesis with you!

I would especially like to thank my dear friends, Nilgün Erzincan, Hazal Serpen, and Güneş Ezgi Demirci, from the bottom of my heart. We embraced this journey together and were together at every step. You were always with me in good times and bad, making me laugh and encouraging me to overcome difficulties. I could not imagine how I would complete this thesis without our relaxation sessions. I would also like to thank Arjin Bingöl and Yankı Tandırcıoğlu whose distance I do not feel even though you are far away. Thank you all for bringing all the beauty into my life. You are one of the most important things that METU has given me, and I cannot explain how lucky I feel to have you on my side.

I would like to thank my dear friends and colleagues, Zeliha Demirci Ünal, Sabiha Üzüm, Ayşenur Mumcuoğlu, Hatice Şebnem Çetken Aktaş, Funda Eda Tonga Çabuk and Elif Güvelioğlu, who inspired, encouraged, and not let me despair even for a second.

Most importantly, I would like to thank Ali Serkan Bayar for his golden heart, endless support, and patience. Even though we majored in different fields, I think you might have a promising career in early childhood education :) Thank you for always being there for me and for helping me when I face difficulties. You always inspire me with the way you think and I still have so much to learn from you! There is no end to my gratitude, but I just want to thank you for who you are. No matter whether you are close by or far away, you are always with me. We have grown up together, dreamed together, and we will make those dreams come true together! I am just extremely lucky to have you in my life.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness of Fit Index
ANOVA	Analysis of Variance
CFI	Comparative Fit Index
CG	Child Gender
CHILD (3-5)	Children's Independent Learning Development Checklist
FI	Family Income
FRAS	Family Resilience Assessment Scale
GFI	Goodness of Fit Index
MANOVA	Multivariate Analysis of Variance
MoNE	Ministry of National Education
MSE	Metacognitive Skills Easy Task
MSH	Metacognitive Skills Hard Task
PES	Parent Educational Status
PG	Parent Gender
RSA	Psychological Resilience Scale for Adults
SEM	Structural Equation Modeling
SRMR	Standardized Root Mean Square Residual
TES	Teacher Educational Status
TI	Teacher Income
TL	Turkish Lira
TLI	Tucker-Lewis Index
TURKSTAT	Turkish Statistical Institute

CHAPTER 1

INTRODUCTION

A fifteen-year-old girl sits alone at the back desk in a high school class, staring at the paper in front of her. All she has to do is solve a math problem and present the solution to her friends. The teacher notices the student is not doing anything and goes near her and asks why she is not progressing. The student's response is, "Because I am stuck." The teacher begins to ask her questions to gain a deeper understanding of where the challenge starts for her, but she cannot get any satisfying answers. Then, the teacher realizes she has no idea what the challenge is and why she is stuck. Therefore, the teacher starts to worry because the student does not know where to start and is unaware of her knowledge. As a result, the teacher ends up thinking that "This student cannot be academically successful because she lacks the ability to deal with tasks requiring a higher order of thinking" (Zohar & Dori, 2003), which is enabled by the individual's awareness of how much he or she knows (Chen, 2020).

A five-year-old boy approaches a box of crayons; however, the crayons resemble chocolates wrapped in colorful packages. Seeing that the child is interested in the box, the teacher asks the child what he thinks is inside. The boy answers, "chocolate." The teacher tells and shows that it is actually crayon. Then, the teacher asks the child what a friend who will see the box for the first time would think, and the child answers, "crayon." Thus, the teacher says that "Students have limited skills in thinking; it is about what they see, what they hear and what they 'get,' that is why they could not think at a higher level" (Row et al., 2016).

What is the connection between these two scenarios? Though there is a nine-year gap between the subjects, in both situations cause an uncomfortable feeling or emotion that is most probably familiar to all educators. Teachers may have difficulty in understanding why children cannot understand or realize the things explained or evident to them. Those who routinely experience this frustration might express "my students are just not able to think”, despite their class showing healthy development

according to their age and following normal language development. However, the actual connection between them is students' failure. This failure is not because of the cognitive processes but because of the higher-level thinking higher-level thinking—also known as metacognition (Flavell, 1979), which is thought to be unique to humans (Metcalfe & Kober, 2005).

The term 'meta' denotes an idea of progression to a higher level, while 'cognition' refers to the ability to think and know (Larkin, 2009). Thus, the concept of 'meta' refers to higher-order thinking that goes beyond the norm and involves introspection and reflection on one's own thinking (Larkin, 2009). Flavell (1976), who coined the term, defined it as "one's knowledge about one's own cognitive processes, or anything related to them" (p.232). However, metacognition is not a simple term; on the contrary, it is a multifaceted construct that involves several components and skills. One of the main components of metacognition is knowledge of one's own cognitive processes, which includes knowledge of strategies, strengths, and weaknesses (Efklides, 2011; Flavell, 1979). Another key component of metacognition is regulation, which involves the ability to monitor and control one's own thinking processes and behavior (Efklides, 2011; Zimmerman, 2000). More recent conceptualizations of metacognition have added additional components, such as cognitive monitoring and evaluation (Efklides, 2011; Nelson & Narens, 1990) and metacognitive experiences such as feelings of confidence or uncertainty (Schraw & Moshman, 1995). In order to influence learning and achievement outcomes, these components interact with each other and with metacognitive skills (Schraw & Moshman, 1995).

Metacognitive skills play a crucial part in various tasks involving attention, comprehension, problem-solving, verbal communication, self-control, reading and writing, learning, or remembering (Escolano-Perez et al., 2019). This makes it possible to realize that metacognitive abilities are a more reliable predictor of academic success than intelligence (Bryce et al., 2015; Maric & Sakac, 2018; Nelson & Marulis, 2017). Therefore, the metacognitive skills and benefiting from them become distinguishing factors among successful and unsuccessful students (Holmberg & Wannarka, 2018; Wang et al., 2020). Those who use metacognitive skills comprehend more than those who do not; because they realize and solve problems faster, decide the best strategies to reinforce what they have learned, and adapt them to other contexts. In this way, they

become more involved and encouraged toward learning and show higher levels of self-efficacy (Chatzipanteli et al., 2014; Maric & Sakac, 2018).

A study performed using the PISA findings discovered that there are several factors affecting reading comprehension, with the most significant impact for metacognition, which are metacognitive knowledge, decoding rate, and the number of books at home as an indicator for family background (Artelt et al., 2001). Furthermore, various other studies found a strong connection between metacognition and reading achievement (Mikk, 2015; Miyamoto et al., 2019; Soodla et al., 2017).

However, metacognition is not only related to cognitive processes but also social and emotional development as it enables individuals to manage emotional and physiological responses, regulate their emotional reactions (Delahaij et al., 2011; Martinez, 2006), enhance motivation for acquiring new knowledge (Bartels & Magun-Jackson, 2009), and navigate social interactions with greater empathy and insight (Martinez, 2006). Indeed, the ability to comprehend and assess one's own thought and emotional processes is a fundamental metacognitive skill. Metacognitive awareness, on the other hand, encompasses being conscious of both emotions and cognitions (Karakelle & Saraç, 2010). By possessing both metacognitive skills and awareness, individuals gain valuable insights into their cognitive strengths and weaknesses, emotional states, and how these factors interplay in various situations.

But how does metacognition develop? And when do metacognitive skills start to appear? Metacognitive skills arise very early and improve during the subsequent years (Roebers, 2017). Several elements impact the development of these skills; one of them is the child himself/herself. It has been discovered that 12 to 18 month old children can reflect on their judgments to assess their accuracy and adapt their following behaviors via their behaviors (Escolano-Perez et al., 2019). Therefore, they insist more on their behaviors after giving a correct decision than an incorrect one. Goupil and Kouider (2016) found that complicated metacognition and verbal expression structures develop later in childhood. However, they added that even infants in their first year of life, through their behaviors, show that they already evaluate the accuracy of their basic judgments, scan their errors, and regulate their following behavior through these metacognitive evaluations (Goupil & Kouider, 2016). Similarly, other studies have exhibited that 18-month old children already employ reflexive techniques to correct

their mistakes during problem-solving (DeLoache et al., 1985). Moreover, a study conducted by Sperling et al. (2000) found that at three years, children can monitor their problem-solving behavior, and four-year-olds' use metacognitive processing during puzzle tasks. Therefore, numerous studies demonstrate that children develop remarkably in their metacognitive skills, particularly from 3 to 5 years old.

However, in the literature, it has been revealed that various factors affect the metacognitive development process as it is associated with people's gender (Liliana & Lavinia, 2011; Topcu & Yılmaz-Tüzün, 2009), the families they grow up in (Carr et al., 1989; Marliyani & Suradijono, 2019; Pino-Pasternak & Whitebread, 2010; Rani & Duhan, 2020; Valcan et al., 2017)-especially in terms of their socioeconomic (Maric & Sakac, 2020; Topcu & Yılmaz-Tüzün, 2009) and educational statuses (Maric & Sakac, 2020) and the teachers they are taught by (Carr et al., 1989; Soodla et al., 2016).

There are some contradictions about whether metacognitive skills develop equally in terms of gender. Some findings show a difference between males and females (Liliana & Lavinia, 2011; Topcu & Yılmaz-Tüzün, 2009); on the other hand, others determined the differences to be insignificant (Chhatio & Mohalik, 2016; Sperling et al., 2002). Although several studies on the relationship between gender and metacognitive skills in different age groups were carried out, consistent results have not emerged. Thus, investigating this variable in the early childhood period is critical in gaining an overall understanding of metacognition.

Studies also claim that children's metacognitive skills are affected by their families; in other words, the nearest adults who are most positioned to support their children's cognitive and metacognitive skills (Marliyani & Suradijono, 2019). Therefore, they play an essential role in fostering children's metacognitive development (Pino-Pasternak & Whitebread, 2010; Valcan et al., 2017). Interactions that promote metacognitive development and self-regulation first occur in the home environment (Marliyani & Suradijono, 2019), wherein the foundation for children’s metacognitive development is provided before children start school (McCombs, 1986). In parallel with these findings, a recent study by Rani and Duhan (2020) revealed a positive and significant correlation between the overall home environment and metacognition. By creating enhanced home environments and engaging learning opportunities, intentionally or unintentionally, families can significantly contribute to the

metacognitive development of their children. For example, the speed and structure of children's metacognitive development are affected by the problem-solving scenarios they are exposed to in their home environment (Carr et al., 1989).

However, some factors affect the home environment and the relationship between families and their children; one is socioeconomic status. Families with high socioeconomic status could have more experience, resources, actions, and social interactions than families with low socioeconomic status (Yunus & Dahlan, 2013), decreasing their children's developmental risks (Rochette & Bernier, 2014). Children from low socioeconomic backgrounds have feelings of inferiority and inadequacy, which influences their memory and cognitive operations, including perception and monitoring, information management techniques, cognition monitoring, as well as metacognitive skills (Rani & Duran, 2020). Also, a study by Topcu and Yılmaz-Tüzün (2009) supports that metacognition is associated with socioeconomic status for different age groups. The same research also revealed that the educational status of parents is positively related to students' metacognition (Topcu & Yılmaz-Tüzün, 2009). The rationale for this might be justified by Schommer's (1990) study, which showed that parents with higher educational status have higher expectations from their children to take responsibility for their own thinking. The studies indicate that parent education status influences younger students' metacognition more than older ones. Therefore, it is critical to examine it in the early childhood period. It is known that children learn from others, and the impact of families on children's learning has been reasonably confirmed (Bronfenbrenner, 1974; Goodson & Hess, 1975).

Carr et al. (1989) stated that not only families but also teachers can facilitate children's cognitive development by fostering their metacognition skills. Therefore, teachers make an important contribution to metacognitive development. Indeed, according to Chatzipanteli et al. (2014), metacognition is teachable, and educators can assist their students, even at a very young age. Molnar et al. (2011) suggest that schools set the climate for thinking by teaching the skills and concepts of thinking, but also by structuring interaction and encouraging children to think about their own thinking. Furthermore, Soodla et al. (2016) demonstrated a significant relationship between teachers' metacognitive knowledge of reading strategies and their students'

metacognitive knowledge. Consequently, it can be inferred that, preschool teachers have a critical role in developing preschool children's metacognitive skills.

As the family and the teacher are the most familiar entities within the child's immediate environment, any changes in the elements included in this microsystem directly impact the child (Bronfenbrenner, 1979). While a teacher with a steady mood and good well-being will affect the students positively, one who is not will affect their development negatively. A study conducted by Gray et al. (2017) revealed that teachers who experience burnout have a cascade of behaviors, such as irritability, that negatively impact their students. Similarly, this is also valid for families. Various research indicated that numerous types of family adversity, such as socio-economic disadvantage, adolescent parenthood, parental separation, parental mental health problems, stressful family life events, increase the likelihood that children will develop mental health difficulties (Amato, 1991; Bradley & Corwyn, 2002; Fergusson & Horwood, 2001; Masten et al., 1999; Sawyer et al., 2000). All these difficulties affect the person, and a term is used for the level of one's coping with them. Resilience refers to the process of positive adaptation despite exposure to significant adversity (Luthar, 2006; Masten et al., 2009).

Resilience has become a well-known concept during 1970's and since then, studies related to resilience on human development continue to expand (Masten & Barnes, 2018). There are bodies of literature encompassing evidence of resilience in children and youth (Goldstein & Brooks, 2013; Masten, 2014), in adults (Southwick & Charney, 2018), and in families (Walsh, 2016a; 2016b). One of the most important reasons for this may be that resilience is considered as one of the 21st century skills (Brown et al., 2015).

Resilience is about understanding many types of complex adaptive systems, including an entire person, a family, an economy, a work organization or a school, and the many dynamic ecosystems on the planet (Masten, 2021). One of these dynamic systems is the family. According to Family Systems Theory, families are dynamic systems characterized by stability and change (Kerr & Bowen, 1988). If a problem occurs, it causes an imbalance, and all family members adjust to those changes to establish equilibrium. One of the factors that affects family stability is socioeconomic status (Trickett et al., 1991). A number of reports have shown that low income, financial

instability, or economic problems are associated with lower levels of marital quality (Amato et al., 2007; Dakin & Wampler, 2008; Falke & Larson, 2007; Stanley et al., 2006), which also affects family stress and stability. Wister et al. (2016) suggests that individuals with higher SES have greater resilience, as they have greater social and economic resources available to them compared to individuals of lower SES.

Dakin and Wampler (2008) found that families with lower income levels had lower educational status. Therefore, exploring the relationship between the resilience and educational statuses of parents are critical. Ha et al. (2008) found that the number of years of education parents receive has a positive impact on some well-being indicators. On the other hand, Kaner et al. (2011) and Taşdemir (2013) found that parental education status predicted no significant differences in the general resilience levels of children with multiple disabilities. However, given the inconsistencies of such findings and in the education attained by parents of preschool children, it is critical to examine this variable on resilience.

Another factor that is thought to have an impact on resilience is gender. However, there is no apparent agreement among several studies that have sought to identify differences between genders. For example, Şahin and Hepsöğütlü (2018) discovered that psychological resilience levels among high school students are not gender specific. Further investigations (Arı & Çarkıt, 2020; De Caroli & Sagone, 2014; Diker-Coşkun et al., 2014; Sagone & Indiana, 2017; Thomas, 2020) have drawn similar conclusions. Nevertheless, there are also studies showing that women are psychologically more robust than men (Çelikkaleli & Kaya, 2016; Güngörmüş et al., 2015). On the other hand, in some studies, the relationship between gender and resilience was not observed (Esen-Aktay, 2010; Sezgin, 2012). Considering the inconsistencies in the research results, it can be said that there is a need for research that will examine this relationship in the family context.

Outside the home environment, most children spend a significant amount of time at school. In this context, their teacher is the adult figure with whom they associate, and the effect of teachers on students' development has been proved in various aspects across several studies. Therefore, it is thought that exploring the resilience level of teachers is essential.

Teacher resilience is explained as a teacher's capability to adapt successfully even when he or she is faced with challenging and endangering circumstances (Greenfield, 2015). With the high demands and everyday challenges encountered in the teaching profession, teachers must be able to successfully adjust and overcome each adversity in the workplace (Greenfield, 2015). Teachers must be able to efficiently 'bounce back' to regain their strength and confidence in teaching during challenging situations (Richards et al., 2014). If teachers lack the coping skills to adapt and bounce back from the difficulties faced in the schools, they will become less effective, and their enthusiasm and dedication will decrease, likely affecting students' learning and education (Greenfield, 2015).

Teaching is known as one of the most stressful occupations (Greenfield, 2015; Paquette & Rieg, 2016), and several factors contribute to the stress encountered by teachers worldwide and affect their resilience. Gu and Li (2013) listed the contextual factors that decreased teacher resilience: long working hours, inadequate salary, and high demands. Similarly, a study conducted by Kulekci-Akyavuz (2021) supports the finding that low salary negatively influences the resilience of teachers and forms a barrier to the profession. In parallel with these perspectives, researchers have classified contextual factors affecting teachers' decision to quit the field (Clandinin et al., 2015). Schaefer et al. (2012) defined seven themes for contextual factors, and two of them are salary and teacher education.

In terms of teacher education, there are inconsistent results regarding its effect on the resilience of teachers. Selçuklu (2013) found no difference between teachers' resilience and educational status in a study conducted on the resilience of preschool teachers. Similarly, Yılmaz and Yalçın (2020) supported this finding. However, there are also several studies revealing a significant difference on teacher resilience based on educational status (Akgün, 2021; Bozgeyikli & Şat, 2014; Chu & Liu, 2022).

Many studies have examined the relationship of resilience with different variables. However, research examining its relationship with metacognition is rare. A study conducted by Narayanan (2009) focused on the relationship between high school students' metacognitions and resilience levels. As the result of this study, it was found that metacognition had a significant effect on resilience. However, studies have not been conducted with children in the early years. Also, to the author's knowledge, the

impact of levels of resilience in families and teachers has not been investigated, which is critical as both are components of children's microsystem and directly affect their development (Bronfenbrenner, 1994). Therefore, examining the factors affecting families' and teachers' resilience is also important to provide better metacognitive developmental opportunities to young children. As a result, it is thought that this study is significant for families, teachers, and preschool children.

1.1. Purpose of the Study

At the inception of metacognition studies, young children's metacognitive skills were rarely considered as it was assumed that young children could only display these skills from eight years old (Veenman et al., 2006; Winne, 1997; Zimmerman, 1990). On the contrary, contemporary research demonstrates that young children possess more developed metacognitive skills than was previously accepted (Adagideli & Ader, 2014). In fact, researchers have started to focus on how to develop young children's metacognitive skills, and remarkable progress is now being made in this field (Perels et al., 2009; Whitebread & Coltman, 2010). The present study sough to provide researchers with information about the metacognitive skill levels of preschool children and the factors that have the potential to affect these skills, which can be considered to support children's development in the early years.

The reason for greater focus on these studies is that the metacognitive difficulties detected at these early ages may rise as children grow, and the experiences in the first years of life construct the foundation for later learning (Scharf et al., 2016). This shows the need to identify these difficulties as early as possible (Escolano-Perez et al., 2019). There is limited research focusing on the relationship between metacognition and resilience. Although a significant effect between these concepts has been found, there might be a limited number of studies examining this relationship on the early childhood level, and also the family and teacher aspect in this relationship, but not reached by the author. For this reason, the present study set out to investigate the relationship between the metacognition skills of preschool children and the resilience of their families and teachers. In the process the research would seek to answer the following questions:

R.Q.1. What is the level of metacognitive skills of preschool children?

1.1. Is there a significant difference between preschool children's metacognitive skills regarding gender?

1.2. Is there a significant difference between preschool children's metacognitive skills regarding the educational status of their parents?

1.3. Is there a significant difference between preschool children's metacognitive skills regarding the family's income?

R.Q.2.What is the resilience of preschool children's families?

2.1. Is there a significant difference between the resilience of preschool children's families regarding the gender of the parent?

2.2. Is there a significant difference between the resilience of preschool children's families regarding the educational status of the parent?

2.3. Is there a significant difference between the resilience of preschool children's families regarding the family income?

R.Q.3. What is the resilience of preschool children's teachers?

3.1. Is there a significant difference between the resilience of preschool children's teachers regarding the teacher's educational status?

3.2. Is there a significant difference between the resilience of preschool children's teachers regarding the teacher's income?

R.Q.4. Is there a relationship between preschool children's metacognitive skills and their families' resilience?

R.Q.5. Is there a relationship between preschool children's metacognitive skills and their preschool teachers' resilience?

R.Q.6. What are the direct and indirect relationships between the metacognitive skills of preschool children, their family resilience, and their preschool teacher's resilience regarding educational status, income, and gender?

1.2. Significance of the Study

To thrive in today's society, one needs to possess problem-solving skills that are both independent and flexible (Jiao et al., 2023). These skills require not only higher cognitive abilities such as sensory perception, memory, and thinking but also higher-order metacognitive functions. Such functions can be seen as the foundation for

achieving tremendous educational success as they impact all forms of learning (Blankson et al., 2017; Bryce et al., 2015). This might be why some researchers regard metacognition as one of the most superior learning skills of the 21st century, with strong relevance in the educational and psychological context (Muawiyah et al., 2019). Thus, supporting metacognitive development from an early age is critical.

However, studies on metacognitive skills have been conducted more frequently with older age groups compared to those involving young children. The existing literature on metacognition indicates that while it has been extensively researched and applied in primary, secondary, and higher education (Donker et al., 2014; Hong et al., 2020; Winne, 2017), the importance of metacognition in early childhood development and education has been relatively overlooked (Chatzipanteli et al., 2014). However, both quantitative and qualitative advancements have been observed in young children's metacognitive skills (Bryce & Whitebread, 2012). During preschool years, metacognitive skills such as monitoring cognitive processes (Lyons & Ghetti, 2013; Rohwer et al., 2012) and recognizing comprehension failures (e.g., Revelle et al., 1985) emerge. Nevertheless, there has been limited investigation into the development of metacognition in children before they start formal schooling, with only a small number of studies (see Bryce and Whitebread, 2012; Gourlay et al., 2020; Rohwer et al., 2012; Shamir et al., 2009; Whitebread et al., 2007, 2009, 2010) being conducted. Furthermore, these pioneering studies have played a crucial role in enhancing the understanding of how metacognitive processes develop in young children, as well as how to define, promote and evaluate such processes effectively. This is because, the research suggest that metacognitive skills can be developed at any age with practice (Brown & DeLoache, 1978; Doran & Cameron, 1995; Schellenberg et al., 2011; Yasir et al., 2020). Therefore, this study is valuable in shedding light on the educational programs to be prepared to support children's metacognitive skills from an early age.

Another important aspect of this research is that it revealed a need for studies examining more than one measure of metacognition in children under the age of 7, as very few studies have explored this topic (Marulis & Nelson, 2021). This gap in research is especially significant because the early years of a child's life are crucial for establishing effective learning practices at both fundamental and practical levels (e.g., Bronson, 2000), making it essential to address this gap in research. For the current

study, both the Train Track Task and CHILD 3-5 Checklist were used to examine the metacognitive skills of preschool children and their relationships with different variables. Therefore, this study is significant since it provides a more profound understanding by combining two aspects of metacognition by using two different instruments.

Since metacognition is a fundamental skill in successful learning, numerous studies have investigated its relationship with other variables, such as gender (Akın, 2016; Ciascai & Lavinia, 2011; Hemdan, 2012) and level of schooling (Harding et al., 2019; Roeschl-Heils et al., 2003; Van-Kraayenoord et al., 2012). However, none of them focused on its relationship with families and teachers to the best of the researcher's knowledge. For this reason, the study contributes to the literature regarding the relationship between families' and teachers' resilience and their children's metacognitive skills. This study aims to gain insight on the development of children by considering the support they obtain from their families and teachers. Thus, the study's findings may give researchers, educators, and policymakers a different perspective on family and teacher influence and inform the plans and programs they make to support metacognitive skills. Consequently, this study may encourage school administrators and authorities to involve families more in the educational process and collaborate with them.

The well-being of a family is a key determinant on how ably it can support their child’s education. It is known that resilient families have flexible organizational structures that enable them to remain together under challenging circumstances, quickly use crisis management techniques, find new strengths, and strengthen relationships (Rolland & Walsh, 2006). Resilient families also prioritize good communication and tight family bonds, which are essential to effective parenting strategies that improve children's psychosocial adjustment (Bámaca-Colbert et al., 2018). Therefore, this aspect of the study may motivate further examination of the factors affecting family resilience which can guide policymakers and strengthen the relationships between family members in Türkiye and beyond.

In addition to the resilience of families, this study also provides information about teacher resilience. Teachers who are unable to manage and overcome difficulties at school may be less effective and enthusiastic, which can have a severe effect on the

learning environment (Greenfield, 2015) and the academic achievement of students (Boyd, 2013). By presenting more detailed research on the factors related to teachers' resilience the present study can make a significant contribution to the existing literature and provide useful information for teachers and experts alike.

As well as the direct relationships, this study also reveals the indirect relationships between metacognitive skills and the demographic variables related to families and teachers. This study may be used to gain a holistic understanding of metacognitive development in the long term. Thus, the target audience of this research is policymakers, families, early childhood teachers, preschool principals, and school administrators to gain awareness about the rich potential of resilience and metacognition and promote practices and policies to support the development of metacognition from a very early age.

1.3. Proposed Model

The path model proposed and illustrated in Figure 1.1 portrays the direct influence of demographic variables on the resilience of families and teachers, as well as a possible mechanism by which the connection between demographic variables and metacognitive skills in preschool children is established. Explicitly, demographic factors might directly impact the metacognitive skills of preschool children, or they can have positive or negative effects on the resilience of families and teachers. Consequently, it may influence the metacognitive skills of preschool children, either negatively or positively, depending on the level of resilience exhibited by their families and teachers.

Taking into account the importance placed on the model specification in path analysis (Kline, 2016), the model proposed in this study was constructed based on the claims, recommendations, and results of earlier studies. Within the scope of explanatory correlational research design (Fraenkel et al., 2012), the current study explores the possible relationships between the demographic variables, family and teacher resilience, and the metacognitive skills of preschool children.

The existing literature shows that children learn from others, and the influence of families on children's learning has been well-established (Bronfenbrenner, 1974; Goodson & Hess, 1975). However, according to Bronfenbrenner's Ecological Systems

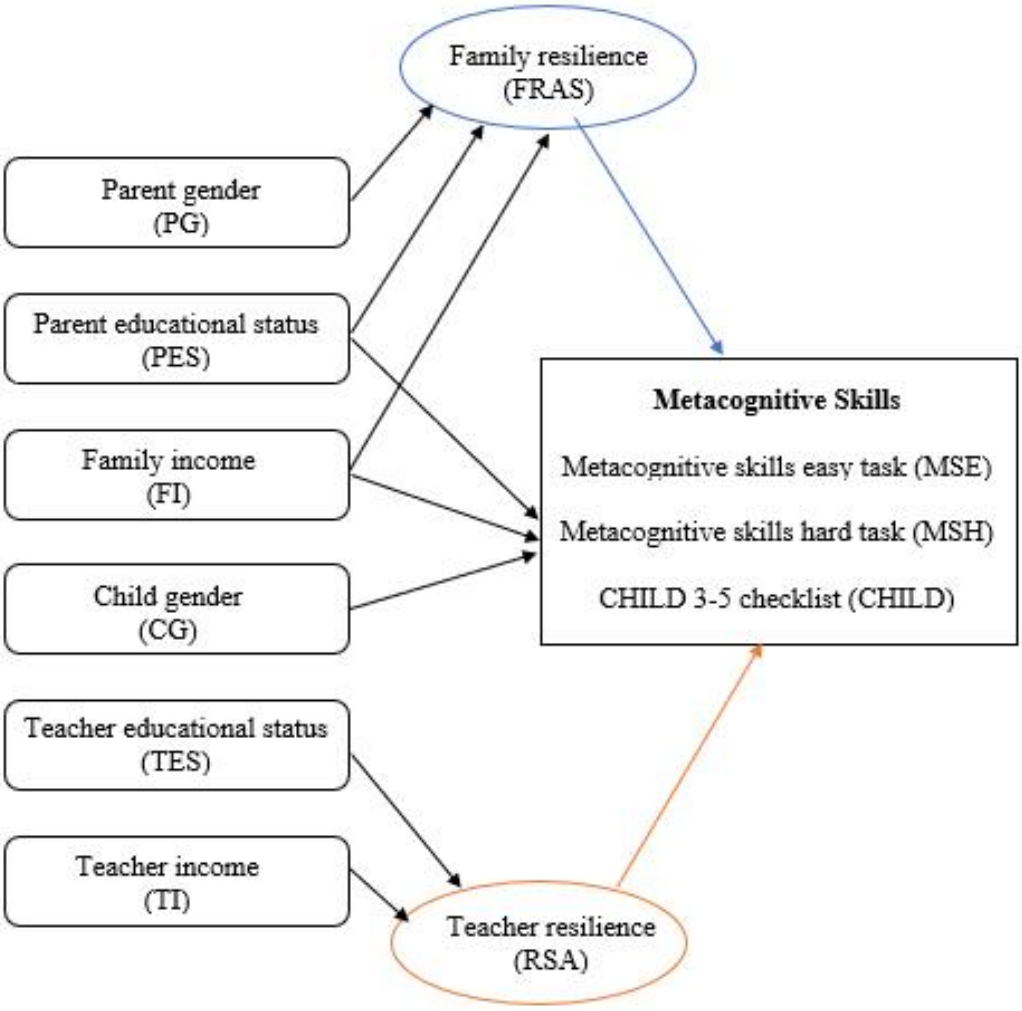


Figure 1.1 Proposed Model

perspective, the microsystem, which encompasses both families and teachers, has the most direct impact on children's development (1979). Specifically, in terms of metacognition, Cassata and French (2006) suggest that children's metacognitive skills can be improved with appropriate adult support, and indeed, Chatzipanteli et al. (2014) argue that educators can assist their students. The Sociocultural Theory also emphasizes the significance of both teacher and family interactions in children's learning and development (Vygotsky, 1978). The necessary guidance and support can be provided to the learners through scaffolding (Wood et al., 1976). Accordingly, studies have demonstrated that scaffolding provided within the home and school environments influences the development of metacognitive skills (Neitzel & Stright, 2003; Stright et al., 2009). Hence, building upon these theories, it is hypothesized that the metacognitive skills of preschool children would be predicted by considering the

resilience of both their families and teachers, as well as certain demographic variables that have the potential to influence their resilience. The anticipated relationships among these variables are presented below based on prior research that has examined the possible associations within the proposed model.

Firstly, the model (Figure 1.1) predicts that the demographic variables related to families (i.e., parent gender, parent educational status, and family income) have a direct relationship with family resilience. Eilertsen et al. (2015) revealed that mothers demonstrated higher resilience than fathers. However, studies discovered that mothers had higher levels of anxiety and depression compared to fathers (Bitsika et al., 2013; Cheatham & Fernando, 2022; Jones et al., 2013). Regarding educational status, Ha et al. (2008) found a positive correlation between parents' education and certain indicators of well-being. In terms of family income, Wister et al. (2016) proposed that individuals with higher socioeconomic status tend to exhibit greater resilience in contrast to those with lower socioeconomic status. In line with these findings, the current study investigates the direct effect of these variables on family resilience.

Moreover, according to the model, family resilience would not only have a direct effect on the metacognitive skills of preschool children but also serve as a mediator between the demographic variables (i.e., parent gender, parent educational status, and family income) and preschool children's metacognitive skills. Studies revealed that the overall home environment has a positive and direct relationship with children's metacognition (Maric & Sakac, 2020; Rani & Duhan, 2020). Regarding the indirect effects, while direct evidence may be lacking, several research studies provide indirect evidence that supports the idea that family resilience can act as a mediator between demographic variables related to families and the metacognitive skills of preschool children. This mediation could be attributed to either parents' self-efficacy beliefs (Cihan & Calik-Var, 2022) or the scaffolding provided by family members (Neitzel & Stright, 2003; Stright et al., 2009).

The model indicates that children's metacognitive skills might be directly affected by their gender, their family's educational status, and family income. In the literature, some studies reported that boys achieved higher metacognitive scores (Marulis et al., 2016), while other studies have argued that girls perform better (Akin, 2016; Ciascai & Lavinia, 2011). Furthermore, Maric and Sakac (2020) revealed a significant

relationship between parents' educational status and children's metacognitive skills. The same study also demonstrated a correlation between family income and the metacognitive skills of preschool children. Thus, based on the results in the literature, the present study aims to explore the relationship between preschool children's metacognitive skills and these variables.

In addition, according to the proposed model, there is a direct relationship between the demographic variables associated with teachers (i.e., teacher educational status and income) and teacher resilience. In the literature, studies revealed a positive relationship between teachers' educational status and resilience (Akgün, 2021; Bozgeyikli & Şat, 2014; Chu & Liu, 2022). For income, previous studies in the literature have consistently found that teachers with higher incomes have higher resilience (Kulekci-Akyavuz, 2021; Schonfeld, 2001). Therefore, in light of these findings, this study examines the correlations of teacher resilience with teacher educational status and income.

Lastly, the model proposes that teacher resilience plays a dual role in influencing the metacognitive skills of preschool children. Firstly, it has a direct impact on the development of preschool children's metacognitive skills. Secondly, teacher resilience mediates between the demographic variables (i.e., teacher educational status and income) and preschool children's metacognitive skills. Liew et al. (2019) claimed that a secure and nurturing classroom atmosphere, accompanied by a positive relationship between teachers and students, positively impacts students' emotional regulation and promotes increased engagement and self-directed learning. Also, concerning the indirect relationship, the mediating role could be associated with the self-efficacy beliefs of teachers, which are influenced by a sense of increased competence and knowledge regarding children and education (Orakcı et al., 2023; Shaukat et al., 2019; Yılmaz & Çokluk-Bökeoğlu, 2008).

In conclusion, the proposal suggests that the resilience exhibited by both families and teachers impacts the development of metacognitive skills in preschool children. Additionally, certain demographic variables have both direct and indirect effects on the metacognitive skills of preschool children. Drawing from existing literature, this study employed a model of metacognitive development rooted in Ecological Systems

Theory and Sociocultural Theory with the purpose of examining the direct impacts of demographic variables and their indirect effects through family and teacher resilience.

1.4. Definition of Key Terms

Endogenous variable. A variable that is affected by other variables in the model and is assumed to cause changes in other variables as well (Kline, 2016). For this reason, they are considered to be dependent on other variables in the model.

Exogenous variable. A variable that is not affected by other variables in the model and are assumed to cause changes in other variables in the model (Kline, 2016). In other words, they are considered to be independent of the other variables in the model.

Family. A unit comprising a minimum of two individuals who engage in social interactions with one another and describe their connection as familial (Lietz, 2006).

Family Resilience. The set of traits, factors, and features that assist families in coping with unexpected changes and challenging circumstances by enhancing their ability to resist disruption and adapt (McCubbin & McCubbin, 1988).

Metacognition. Metacognition pertains to thinking about thinking. By applying self-appraised knowledge about cognition, individuals can self-regulate their thinking to accomplish tasks (Baker & Brown, 1984; Cross & Paris, 1988; Flavell, 1979; Veenman et al., 2006).

Metacognitive control. The capacity to utilize information obtained through metacognitive monitoring to modify behavior in a flexible manner that meets the demands of the task. This type of control is proactive and driven by internal processes rather than being reactive to external factors (O'Leary & Sloutsky, 2017).

Metacognitive experiences. Metacognitive experience refers to self-motivational beliefs, which include conscious reactions and self-judgments regarding personal performance before, during or after task execution (Sweeney, 2010). Examples are individual's self-efficacy, outcome expectancy, comprehension of the task, perception of difficulty, effort needed to complete the task, and confidence in ability to accomplish the task (Efklides et al., 2006).

Metacognitive knowledge. Metacognitive knowledge refers to the interaction of the beliefs and knowledge stored in one's memory regarding personal functioning, task execution and strategy selection (Sweeney, 2010).

Metacognitive monitoring. Capacity to have an internal representation of both the task being performed and one's own performance on that task (Jiao et al., 2023).

Metacognitive skills. Metacognitive skills are strategies applied consciously or automatically during learning, cognitive activity, and communication to manipulate cognitive processes before, during, or after a cognitive activity (Flavell, 1976, 1979). Examples are executive function processes such as verbal mediation, self-regulation, planning, judgment, and self-monitoring (Patterson, 2011).

Perseveration. Tendency to repeat an unsuccessful approach multiple times without acknowledging its ineffectiveness and attempting a new approach. This lack of adaptability is regarded as a control process failure in the field of self-regulation (Deák & Narasimham, 2003; Bryce & Whitebread, 2012). The individual is unable to restrain an incorrect response and does not demonstrate flexibility in selecting an alternative response. Ultimately, this behavior leads to failure in achieving the intended objective.

Resilience. A process by which an individual bounces back, recovers, or adjusts well in the face of adversity, perceived threats, and trauma (Luthar et al., 2000).

Teacher resilience. Teacher resilience is the ability to adapt and/or cope with stressors that occur in the workplace and increase their competence as a teacher (Richards et al., 2014).

1.5. Summary

In this chapter, an introduction to the study including the statement of the problem, purpose of the study and research questions, significance of the study, and finally definitions of key terms were presented. The following chapter presents a review of the literature related to metacognition and resilience in terms of theoretical background, metacognition in the early years, the importance of metacognition, resilience of families and teachers.

CHAPTER 2

LITERATURE REVIEW

The present chapter commences by presenting the theoretical framework underpinning the current study. Subsequently, the definitions and conceptualization of metacognition, metacognitive development in the early years, and the importance of the development of metacognition are explained. Following this, the review shifts to the topics of resilience, risk and protective factors, and the resilience of families and teachers. Lastly, in parallel with the study's primary purpose, the relationship between metacognition, resilience, and children is explained.

2.1. Theoretical Framework

Early childhood is a critical time in children's lives where various skills are developed and internalized. Therefore, supporting children's development in the early years is critical. The following section explores ecological systems theory and sociocultural theory as two theories, which will support the theoretical frameworks for the relationship between preschool children's metacognitive development and the resilience of their parents and teachers.

2.1.1. Bronfenbrenner's Ecological Systems Theory (EST)

Since Bronfenbrenner published a paper, 'Toward an experimental ecology of human development' in 1977, a basic model of Ecological Systems Theory was fundamentally established and composed of four systems, along with a chronosystem that was added later. The fundamental objective of this theory is to understand the development of human beings and their ecologies from an individual to remote environments over time (Bronfenbrenner, 1993, 1994). This model not only guides a research investigation of the development of the life course from childhood through adulthood, but also highlights the interactions between developing individuals and ecologies they directly and indirectly encounter, which is the concept of a proximal process (Bronfenbrenner, 1993, 1994; Bronfenbrenner & Morris, 2006). Bronfenbrenner's Ecological Systems

Theory (EST) provides a systematic investigation of a developing individual across five proximities: the microsystem, mesosystem, exosystem, macrosystem and chronosystem (Bronfenbrenner, 1993, 1994; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 2006). EST also highlights that the reciprocal relationships between the individual and the five ecological systems influence the outcome of human development (Bronfenbrenner, 1993, 1994; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 2006).

The developmental process is influenced by all layers of interaction, with the microsystem being the immediate environment where children have direct contact with others (Bronfenbrenner, 1979; Neal & Neal, 2013). This system includes parents, peers, and school, and the relationships established within it have a bidirectional effect on individuals' development (Brofenbrenner & Morris, 2006), meaning that individuals affect and are affected by their environment. The relationship of the resilience of families and teachers on young children's metacognitive skills is an example of this system, as they represent children's immediate environment and direct contact.

Moreover, the effects of the microsystem are not isolated as it interacts with other systems, such as the mesosystem, which involves linkages and processes between different settings containing the developing person (Bronfenbrenner, 1979). For instance, the relationship between parents and teachers or home and school can affect the development of children (Hayes et al., 2017). Also, the relationship between two parents and subsequent parenting may affect a child's social and cognitive development (Cabrera et al., 2014; Scrimgeour et al., 2013).

In addition to them, the exosystem comprises environments that affect children through one or more microsystems, such as their parents' financial, emotional, or physical situations, even though they are not directly involved. For instance, unemployment can indirectly affect children by affecting their family's financial stability and emotional well-being (Taşğın, 2014).

The macrosystem refers to the broader context in which children live, including their lifestyles, social interaction patterns, sociocultural beliefs, and major life events

(Berns, 2013). It encompasses the sources of ideology and information from different cultures and subcultures (Bronfenbrenner, 1977).

According to Bronfenbrenner (1986), the last system, the *chronosystem* mostly focused on life transitions. It relates to the developments and changes over time in the previously mentioned systems. These changes can cause shifts in how people develop across different contexts. Children's transition to school and the efforts of early childhood educators to provide a smooth transition include a host of factors that influence a child's development at this pivotal moment, with the chronosystem serving to measure and make sense of this important life change across the other four ecological levels (Hayes et al., 2017).

EST has two critical aspects, according to Guhn and Goelman (2011), establishing the rationale for utilizing this theory as a theoretical framework in this research. Firstly, developmental processes relevant at various ecological levels have the potential to not only have cumulative impacts on development but also to exhibit multiplicative effects such as interactive, moderating, or mediating ones. Through this theory, reciprocal interactions and relationships between preschoolers and their ecologies in their educational settings can be captured. This is because Bronfenbrenner's proximal processes, mesosystem, and exosystem emphasize environmental influences on child development (Bronfenbrenner, 1993, 1994; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 2006). These conceptions offer an opportunity to interpret preschoolers' meaningful direct and indirect interactions with their ecologies on their cognitive development, which aligns with the current study's purpose.

The second reason is that the development results cannot be explained only by a process-person-context-time model that works within one system (Guhn & Goelman, 2011). Instead, development outcomes arise from the interactions of process-person-context-time variables across and within all systems. A study by Mollborn (2016) revealed that a child who experiences positive development in various interconnected areas is expected to perform better in cognitive and behavioral development and overall health than a child whose development is hindered.

Parallel to this, EST is a systematic framework that can explore individuals' diverse influential protective and risk elements embedded in the ecological systems. This is

important because this theory offers five comprehensive systems to examine the potential, influential elements embedded in the context of this study. The general protective and risk factors occur in both the individual and the three contextual levels: family, school, and community (both direct and indirect). The microsystem, mesosystem, exosystem, macrosystem (Bronfenbrenner, 1977, 1979), and chronosystem (Bronfenbrenner, 1986, 1993) offer the more explicit and comprehensive classification of these influential factors on a young individual's cognitive development. In other words, EST was developed to explain how child development is affected by diverse institutions, groups, or settings, which are distributed into the five systems in accordance with the immediate and/or remote influence of these surroundings on the child (Bronfenbrenner, 1993, 1994).

2.1.2. Sociocultural Theory

Metacognitive development can be conceived as the core phenomenon of development envisioned by Vygotsky. The reason is that it involves the mastering of one's own mental processes, their voluntary control and establishing links between different functions and creating new functional systems. The theory of Vygotsky opens the possibility of a new view of the role of metacognitive experiences, which is considered a part of metacognitive development. Development is conceived by Vygotsky neither as maturation nor as learning; but as a unique interplay between natural and cultural processes that influence the cultural framing of personal experiences (Kovac-Cerovic, 1996). Hesitancy, not-being-sure-what-to-do-next, surprise, excitement, the scale from feeling uncertainty to feeling certainty, and other "cognitive emotions" (Scheffler, 1991) and "intellectual passions" (Perkins, 1992) might productively enlarge the list of metacognitive experiences.

Central to Lev Vygotsky's theory is the idea that biological and cultural growth does not happen in isolation (DeVries, 1997). He portrayed children as social beings, intertwined with different individuals supporting children to acquire skill and perception (Vygotsky, 1978). He regarded the influence of social interaction and its value in learning and development. His social constructivist theory is based on this belief, and he explained development as a social process. He supported the idea that cognitive development results from the interactions of a child with grown-ups and more qualified peers (Vygotsky, 1978).

The underlying assumption of this study is derived from the Vygotskian conception of development. The mechanism of metacognitive development is seen as internalization, proceeding from other-regulation or joint regulation to self-regulation- from being interpsychical toward becoming intrapsychical. Vygotsky was more concerned with children's developmental potential than with their actual level of development (Schaffer, 1996). He claimed that there is a zone of proximal development (ZPD) for every child, and this ZPD could be defined as the gap among children's capabilities to do something on themselves and their capabilities with the help of other people (Vygotsky, 1978).

The ZPD is not a fixed entity. It changes as the learner makes sense of the experiences they encounter. As the learner develops, what they can do alone and with the support of another will change over time as the learner understands more (Vygotsky, 1978). The guidance and support that is given to the learner is termed ***scaffolding***, and this may take the form of encouragement, reminders, suggestions, resources and questions (Wood et al., 1976). The scaffolding that is provided for the learner is flexible. The adult or more capable other needs to be responsive to the needs of the learner (Pearson, 1985) in order to remove or alter the scaffolding as the learner progresses.

Vygotsky's approach highlighted the significant performance of grown-ups in guiding and encouraging children's cognitive growth. With the social guidance presented by different people, children could function at a higher level of development in their own proximal developmental area (Schaffer, 1996), in which the adult is expected to gradually hand over metacognitive control to the child (Wertsch, 1978). But in order to function appropriately, the adult has to have a good well-being. Since Vygotsky stated that children learn and develop through social interactions, his theory is relevant to the purpose and the research questions of the current study.

The adult person who provides support in the school environment is the teacher (Cannella & Reiff, 1994), and a parent in the home environment (Neale & Whitebread, 2019). Through the social interactions in this process, the child's holistic development, including metacognition, is supported. If they underestimate their critical role in this process, or damage the child's well-being, the effect of such actions on children might be irreversible. Therefore, within the scope of this study, the relationship between children's metacognition, and their families and teachers' resilience, which affects the

interaction with their children/student will be examined. It will present the interaction and affect patterns between the metacognitive skills of preschool children and the resilience of families and teachers. In other words, the study will shed light on that whether the children who interact with adults with higher resilience display better metacognitive skills.

2.2. Definitions and Models of Metacognition

In the most basic version, metacognition refers to one's process of monitoring and regulating own fundamental cognitive functions and content (Flavell, 1979; Metcalfe & Kober, 2005). However, it is a complex construct, and one of the main challenges researchers' encounter is the need for a unified conceptualization (Zohar & Barzilai, 2013). Different researchers use different terminology and structural elements to describe metacognition. The existence of so many concepts related to metacognition has led to inconsistency and lack of agreement within the field (Veenman et al., 2006). Consequently, the concept of metacognition has been defined in diverse ways, owing to the appearance of multiple terms to explain it in literature. Brown (1987) defines it as an individual's ability to think about and evaluate their own learning processes. Similarly, Schraw and Moshman (1995) describe metacognition as an individual's awareness of their thinking and ability to assess and organize information. Sternberg and Davidson (1983), on the other hand, define it as high-level managerial processes involving planning, monitoring, and evaluating problem-solving. In addition, metacognition is characterized as the monitoring and regulating of cognitive processes such as problem-solving, comprehension, and reasoning (Karakelle, 2012). Hoy and Spero (2005) suggests that this process involves being aware of one's own executive control system, including the cognitive structure and learning characteristics, to control information acquisition.

Despite all the variety in these definitions, two core components of metacognition are widely agreed upon: metacognitive knowledge and regulation of cognition (Gascoine et al., 2017). Metacognitive knowledge involves any knowledge that contributes to understanding the cognitive processes used to complete a task, and it can be subdivided based on the subject or type of knowledge (Efklides, 2011; Flavell, 1979). Regulation of cognition involves monitoring cognitive processes, exerting control over mental and behavioral operations, and reflecting on the results (Efklides, 2011; Zimmerman,

2000). Newer ways of understanding metacognition have incorporated more aspects, including cognitive monitoring and assessment (Efklides, 2011; Nelson & Narens, 1990), as well as metacognitive experiences which comprises the thoughts, emotions, assessments, and metacognitive knowledge that arise while solving problems (Efklides, 2008). In order to provide a more precise understanding, this section offers an overview of how metacognition has been conceptualized in foundational research by presenting three prominent frameworks proposed by John Flavell (1979), Nelson and Naren (1990), and Schraw and Moshman (1995).

2.2.1. Flavell's Framework of Metacognition

Developmental psychologist and Piagetian researcher John Flavell first used the term *metacognition* in his research on children's metacognitive monitoring in the 1970s (Flavell, 1976). Metacognition was defined by Flavell as actively observing and controlling cognitive processes about the information being processed, typically to achieve a specific goal or objective. Many scholars (e.g., Avargil et al., 2018; Roebers et al., 2012) use his classic concept of metacognition. It is important to note that, in contrast to cognition, metacognition cannot directly affect behavior; instead, it can only affect cognition through awareness of, regulation of, and planning, monitoring, and assessing mental activity (Efklides, 2009). In his original conceptualization, Flavell divided metacognition into four main elements: metacognitive knowledge, metacognitive experiences, metacognitive goals, and metacognitive actions (Flavell, 1979). Nevertheless, goals and actions were only covered with knowledge and experiences, considered more fundamental elements. It has been claimed that the entire metacognitive process is produced through interactions between metacognitive knowledge and experiences, as well as with goals and actions (Flavell, 1979).

Avargil and colleagues (2018) describe metacognitive knowledge as the comprehension of how to learn and the process of acquiring knowledge. Indeed, according to Flavell's (1979) categorization, metacognitive knowledge can be classified into three categories: knowledge about person, task, and strategy. Knowledge about person pertains to a person's understanding of their cognitive abilities and general cognitive attributes relevant to learning. This can be exemplified by a child who struggles to visualize how the blocks should be stacked to create a stable structure. The child's self-awareness of their spatial reasoning skills can affect

their approach to building a tower, either by depending on their strengths or compensating for their weaknesses using other cognitive abilities. As for the knowledge about tasks, comprehending the task's objectives, demands, and how the information provided can influence one's performance in the related task (Flavell, 1979). For instance, a child's lack of knowledge about the required number of blocks or the tower height will cause difficulty in completing the task. On the other hand, knowledge about strategies involves being aware of the most suitable problem-solving techniques relevant to a task's goals (Flavell, 1979). For example, the child is now having difficulty stabilizing the tower. In that case, the child may develop a strategy to use a broader base of blocks for more excellent stability, or they may use smaller blocks for the top of the tower to prevent it from toppling over.

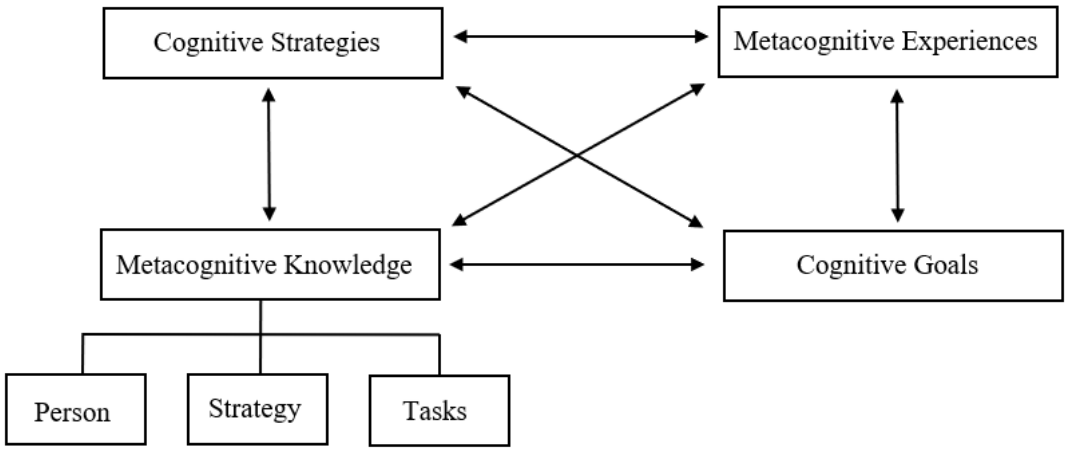


Figure 2.1 Flavell's (1979) Model of Metacognition

Flavell's second element, metacognitive experiences, are the act of consciously reflecting on their cognitive processes (Efklides, 2002; Flavell, 1979). A child who places blocks too far apart and causes the tower to collapse might realize that without paying enough attention to the spacing between blocks, they will be unable to make the tower stable. The third and fourth elements of metacognition—metacognitive goals and strategies—are frequently triggered by metacognitive experiences (Flavell, 1979). For example, the child building a tower with blocks may realize they are having difficulty maintaining balance and stability. They could *act* as either to continue adding more blocks in a trial-and-error method or engage in metacognitive strategies to reach the *goal*, such as reflecting on the desired height and shape of the tower and asking themselves questions about the effect of each block placement on its stability. By doing so, they aim to assess the tower's construction, which may prompt following

metacognitive experiences such as satisfaction, frustration, or surprise. These experiences have a crucial role in the process of monitoring and engaging in self-regulation (Chen & McDunn, 2022) involve assessing the efficacy of current strategies and improvement toward goals and adjusting behavior while learning (Gascoine et al., 2017). Other researchers, such as Veenman (2011), also consider them as metacognitive skills.

During the 1990s, more cognitive mechanisms, or strategic control processes, such as planning, evaluating and monitoring had been added to Flavell's model, and it has expanded by researchers like Schraw and Moshman (1995) and Nelson and Naren (1990).

2.2.2. Schraw and Moshman's Framework of Metacognition

Schraw and Moshman (1995) suggested a different yet comparable approach to Flavell's model of metacognition, which consists of two main elements: regulation of cognition and knowledge of cognition. They focused on the fundamental distinction between these components and detailed the distinction with sub-processes involved in these processes.

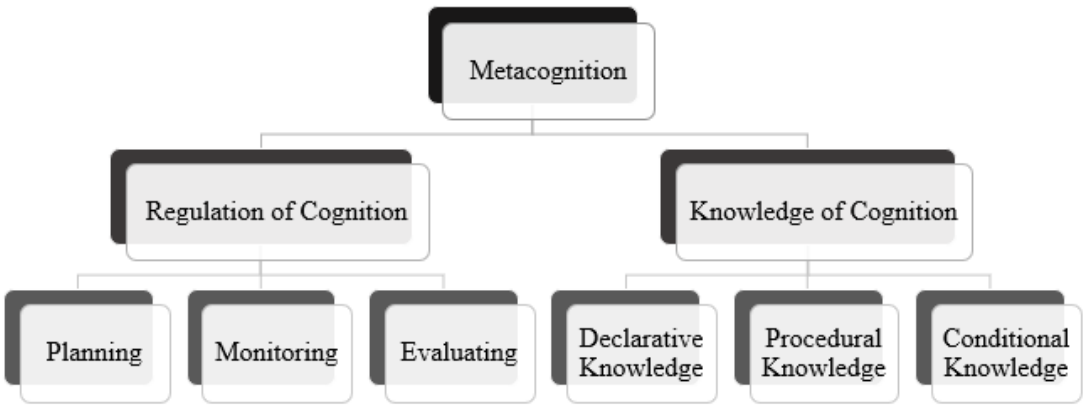


Figure 2.2 Shraw and Moshman's (1995) Model of Metacognition

In Schraw and Moshman's model, they highlighted the particular abilities required for the regulation of cognition, whereas Flavell focused on the practical applications of metacognitive thinking. According to Schraw (1998), the regulation of cognition involves a range of activities that aid students in managing their learning process. Especially planning, monitoring, and evaluation are universally acknowledged as

crucial regulatory skills (Schraw, 1998; Schraw & Moshman, 1995). Planning involves choosing appropriate strategies and managing time and resources effectively, while monitoring entails keeping track of one's knowledge and performance during learning. Finally, evaluation refers to assessing learning outcomes to improve subsequent learning.

Knowledge of metacognition, on the other hand, is similar to the metacognitive knowledge component in Flavell's original model. Different from his view, Schraw and Moshman (1995) categorized three types of metacognitive knowledge based on their purpose, including declarative, procedural, and conditional. Declarative knowledge refers to knowing 'about' something, procedural knowledge refers to knowing 'how' to do things, and situational knowledge refers to knowing the 'why' and 'when' aspects of cognition (Brown, 1987). Declarative knowledge includes the individual's knowledge about himself as a student and what factors affect his performance (Schraw & Moshman, 1995), similar to Flavell's knowledge about the person (Chen & McDunn, 2022). Indeed, it is the knowledge of whether an individual can perform a particular task (Flavell, 1979).

Procedural knowledge is the knowledge of how to complete a task successfully, that is, to know how to do it (Schraw & Moshman, 1995). This means that individuals who possess high levels of procedural knowledge are more likely to utilize their skills more automatically, sequence strategies effectively, and use different strategies to solve problems (Schraw & Moshman, 1995). Shraw and Moshman's (1995) description of procedural knowledge appears to resemble Flavell's conception of knowledge about strategies closely (Chen & McDunn, 2022). However, Schraw's definition of procedural knowledge is limited to information concerning the procedures and their automatic execution instead of knowing the appropriate context and conditions in which they may be effective (Schraw & Moshman, 1995).

Conditional knowledge is an individual's comprehension of how to perform a task efficiently and when to apply specific strategies (Jacobs & Paris, 1987; Schraw & Moshman, 1995). This type of metacognitive knowledge encompasses both declarative and procedural knowledge, which involves knowledge of the task and how to perform it successfully (Chen & McDunn, 2022; Flavell, 1979). Thus, people who possess a high level of conditional knowledge are considered capable of choosing the

most proper strategy during the learning process (Kyllonen & Woltz, 1989; Mclnerney & Mclnerney, 2013; Schraw, 2001).

2.2.3. Nelson and Narens's Principles of Metacognition

Nelson and Narens (1990) proposed a metacognition model that examines the cognitive processes involved in a task from an information-processing perspective, focusing on feedback loops. This model operates at two interrelated levels: the object-level and the meta-level. The object-level is the actual execution of a cognitive task, such as learning or problem-solving. On the other hand, the meta-level is a mental representation of the object-level task, including an individual's understanding of the cognitive processes involved. The information flow between the two levels can represent either 'monitoring' or 'control.' By characterizing it as the process of monitoring and controlling cognitive development, Nelson and Narens put forward an alternative model of metacognition (de Bruin et al., 2011; Kornell & Metcalfe, 2006).

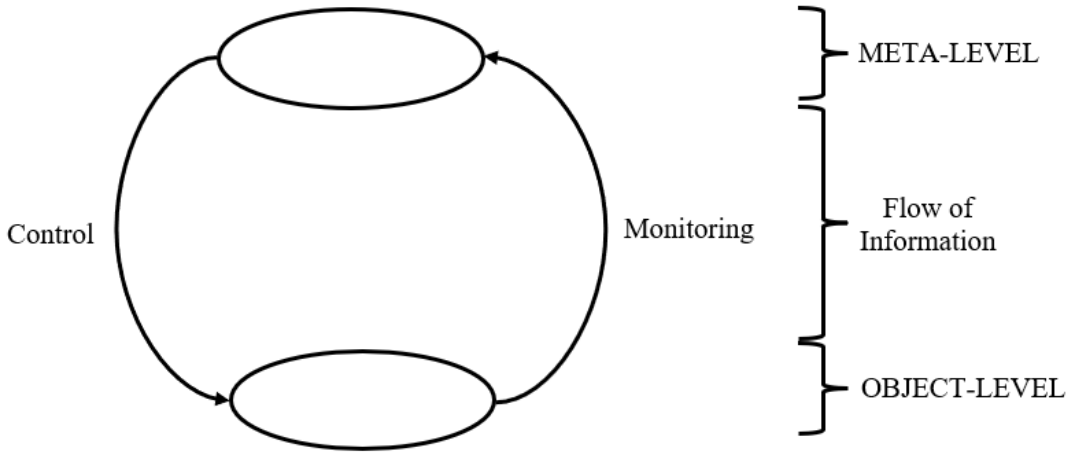


Figure 2.3 Nelson and Narens's (1990) Model of Metacognition

Monitoring occurs when information flows from the object-level to the meta-level (Nelson & Narens, 1990). An example of this might be a young child who tries to assemble a puzzle but has trouble finding the right pieces. They can watch their behavior, pausing to look at the completed picture on the puzzle box to determine the following pieces. In contrast to monitoring, control happens when information flows from the meta-level to the object-level (Nelson & Narens, 1990). This can be exemplified when the child encounters a piece that does not fit in the puzzle; they can try alternative strategies, such as rotating the piece or fitting it to a different one.

Therefore, this model provides insight into how an individual monitors and controls their own cognitive processes while performing a task. What is critical while working with young children is that when categorizing the metacognitive skills demonstrated by young children, it is considered beneficial to determine the flow of information, as it helps to classify behaviors as either monitoring or controlling (Bryce & Whitebread, 2012).

Nelson and Narens (1990) propose that monitoring involves constant observation and evaluation of one's thoughts and behavior, while control refers to the ability to make conscious decisions at the task level. Research reveals that monitoring and control skills start to develop during the preschool years. Studies by Coughlin and colleagues (2015) and Lyons and Ghetti (2013) have found that children in the preschool years (aged 3, 4, and 5) can accurately monitor their thought processes and strategically respond to questions during a perceptual identification task. These findings propose that the development of metacognitive skills occurs early in life.

2.2.4. Researcher's Frames of Reference on Metacognition

Since metacognition research still requires a unified definition (Veenman et al., 2006), researchers should clearly specify their adopted theoretical perspective and explain the definition and sub-components they use to ensure consistency in understanding metacognition (Zohar & Barzilai, 2013). Therefore, the adopted models and definitions for this study are presented in this section. Among various definitions suggested by different researchers, Flavell, Miller, and Miller's (2002) definition was embraced with a strong emphasis on metacognitive skills, and the definition has been slightly modified and combined with Nelson and Narens's framework to suit the purposes of the current study.

The reasons for choosing these frameworks are that firstly, Flavell is a prominent figure in metacognition research, and his work has functioned as the basis for numerous other models (Babbs & Moe, 1983; Efklides, 2008; Nelson & Narens, 1990; Shraw & Moshman, 1995). For this study, his latter definition from , instead of his earlier work from 1979, is used since he acknowledged the contributions of many researchers who wrote about metacognition towards the end of the era. Additionally, this framework addresses several metacognitive elements found in other frameworks and is also brief and comprehensible. Secondly, Nelson and Narens's (1990) model

proposes the examination of the information flow in the cognitive processes. Monitoring and controlling the behaviors are considered metacognitive skills, which are in parallel with the research instruments and questions.

Flavell and his colleagues categorize metacognition into three elements: metacognitive knowledge, metacognitive monitoring and self-regulation, and metacognitive experiences (Flavell et al., 2002). Some researchers refer to the second element as metacognitive skills (Efklides, 2006; Veenman, 2006), but Flavell et al. (2002) have not highlighted this term despite using it. *Metacognitive experiences*, which refer to the subjective and affective experiences of cognition and learning, have been a less-researched aspect of metacognition (Efklides, 2006; Flavell, 1979; Flavell et al., 2002). In line with this, Veenman and colleagues (2006) stated that the majority of existing metacognition frameworks consist of two main aspects: metacognitive knowledge and metacognitive skills, and studies in this field aim to explain individuals' metacognitive knowledge and metacognitive skills (Bryce et al., 2015).

Metacognition knowledge was explained in detail in Flavell's Framework (see 2.2.1). Whitebread and his colleagues (2009) proposed a framework that builds on Flavell's definition of metacognitive knowledge and includes regulatory skills such as planning, monitoring, evaluating, and control, which are considered metacognitive skills. Indeed, numerous models of metacognitive skills exist with slight theoretical differences and diverse terminology used by different researchers and authors (Efklides, 2008; Fletcher & Carruthers, 2012; Winne & Hadwin, 1998; Zimmerman, 2000). However, in general, metacognitive skills refer to the skills and procedures employed to guide, monitor, control, and regulate cognition and learning (Veenman, 2011). In Flavell's framework of metacognition, monitoring, and self-regulation are essential skills, along with planning and evaluation (Flavell et al., 2002). Similar to Flavell, Schraw and Moshman (1995) also identify planning, monitoring, and evaluation as crucial skills. These dimensions, as well as the definitions of concepts, were considered for the current study within the scope of the adopted metacognition framework.

2.3. Importance of Development of Metacognition

Flavell (1987) suggests that a good student is someone who has a strong knowledge base that includes metacognitive knowledge, the cognitive task to be solved and the strategies they deploy to achieve their goals. Students who are able to plan, monitor and evaluate their learning process are said to have good metacognitive skills. Metacognition allows them to select and invent strategies explicitly, by thinking about their understanding of the task demands, their available cognitive resources, and their own experience of solving similar problems (Pennequin et al., 2010). Schraw and Graham (1997) asserted that metacognition is an important component for effective learning because it enables individuals to plan, monitor and regulate their cognitive performance. Similarly, Rivas et al. (2022) stated that metacognition facilitates the development of self-directed learners by improving their awareness of their cognitive processes and self-regulation, empowering them to control their learning and apply it across various domains of their lives.

Metacognition is considered essential to student success as studies have found that students who use metacognitive abilities, learn and remember more than others (Woolfolk, 1998) and diagnose problems and correct them (Bereiter & Scardamalia, 1987), discover the best ways to reinforce what they have learned (Vandergrift, 2005). Several meta-analyses stretching back to the 1980s have found a positive link between metacognition and students' academic performance (Donker et al., 2014; Haller et al., 1988; Ohtani & Hisasaka, 2018). A study conducted by Hattie (2008) synthesized more than 800 meta-analyses focused on factors predicting academic achievement, and found teaching metacognitive strategies as one of the top ten most influential factors in student learning and success.

A more recent meta-analysis found metacognition predicts academic performance from primary school students through adults, in both classroom and laboratory settings, and when controlling for intelligence (Ohtani & Hisasaka, 2018). A study on the Programme for International Student Assessment (PISA) shows metacognitive knowledge is positively correlated with reading comprehension across the 34 Organisation for Economic Co-operation and Development (OECD) countries analyzed (Artelt & Schneider, 2015). The more metacognitive knowledge students possessed, the higher were their reading comprehension scores.

Studies have established the importance of metacognition in the acquisition of learning skills (Alexander et al., 2003; Hartman, 2002), and researchers agree that people with high level of metacognitive knowledge and skills have the ability to solve problems effectively (Gourgey, 2010). Such an ability occurs because knowledge about cognition leads to proper detection of problems and to selection of appropriate cognitive strategies (Kuhn, 2000a; Wang, 2015; Winsler & Naglieri, 2003), and the use of appropriate strategies in problem solving situations (Glaser & Chi, 1988).

On a general level, metacognitive skills are important for children's cognitive functioning and problem-solving, as is contextual metacognition, related to the problem the child is faced with (Gourgey, 2010; Mayer, 1998; Pintrich, 2002; Schraw, 1998). Studies have shown that older preschoolers significantly develop metacognitive potentials, such as awareness and cognition about their own cognitive processes and self-control of cognitive performance (Fisher, 1998; Karnes et al., 1986; Whitebread et al., 2005). The period from 4 to 9 years of age is especially important for developing metacognitive abilities (Melo-León, 2015; Young & Fry, 2008). During this period children become aware of themselves as thinking individuals (Geurten et al., 2015; Isquith et al., 2004). For instance, Kuhn (2000b) emphasized the influence of the development of metacognition in early years on higher-order thinking processes since it provided better cognitive skills. Students better performed the tasks in learning mathematics and solving problems (Mevarech & Fridkin, 2006). The improvements in metacognitive abilities help children become successful in problem solving (Leseman, 2012; Pawlina & Standford, 2011). Similarly, Eggen and Kauchak (2012) stated that successful students are those who are aware of the times when they act strategically or not as learning becomes effective when it is accomplished consciously. Metacognition helps students to carry out the steps of problem-solving and to manage this process (Sevgi & Çağlıköse, 2020).

One of the basic aims of education is for students to think critically. In order to achieve this end, it is important to identify certain cognitive factors that can facilitate it. Critical thinking occurs when individuals use their cognitive skills or strategies that increase the probability of a desirable outcome (Black, 2005; Halpern, 1998; Kuhn & Dean, 2004; Nickerson, 1994; Rivas et al., 2022; Schroyens, 2005). Specifically, developing students' critical thinking skills is facilitated through metacognition since it is based

on whether metacognitive mechanism functions are working well (Rivas et al., 2022). The relationship between metacognition and critical thinking was initially asserted up by Schoen (1983) where he explained that “a successful pedagogy that can serve as a basis for the enhancement of thinking will have to incorporate ideas about the way in which learners organize knowledge and internally represent it and the way these representations change and resist change when new information is encountered” (p. 87). In his explanation, the enhancement of knowledge is referred to as critical thinking and the process of organizing knowledge can be a factor of metacognition.

The literature shows the positive relationship between metacognition and various kind of skills. Studies show that even at the very early ages, supporting metacognition creates a difference. Thus, children should be encouraged to become aware of their own thinking, learning and understanding starting from a very early age.

2.4. Development of Metacognition in the Early Years

The literature of the last 40 years identifies many different views on metacognition: how it is defined, assessed and how it links to other areas, and what happens at different ages. Since Flavell first defined metacognition, several different theories have emerged concerning how early in life metacognition develops. These have ranged from Griffith and Ruan (2005) who strongly believe that metacognition only develops in later childhood, to the work of Larkin (2006), Whitebread et al. (2007), Wall (2008) and Gonzales et al. (2018) who all state that children show elements of metacognition as early as the age of four.

Upon examining the initial studies in the literature, it has been claimed that metacognition does not usually develop until 7-8 years old (Alexander et al., 1995; Flavell, 1976; Veenman & Spaans, 2005; Veenman et al., 2004). This late emergence of metacognition is believed to be due to young children's insufficient experience and education regarding metacognition (Flavell, 1979). However, contemporary research has presented that children exhibit signs of emergent metacognition at an early age (Escolano-Pérez et al., 2019; Gonzales et al., 2018) and develop over the subsequent years (Chatzipanteli et al., 2014; Nelson & Marulis, 2017; Roebers, 2017). For instance, infants who are as young as 12 and 18 months demonstrate the ability to reflect on their decisions and evaluate their accuracy through their behavior. They tend

to persist more in their behavior after making a correct decision than when it is incorrect, indicating early signs of metacognition. Although verbal expression and more complex forms of metacognition develop later in childhood, these infants already demonstrate an ability to estimate the accuracy of their simple decisions and use metacognitive evaluations to regulate their behavior. This suggests that infants use their ability to monitor their errors to adjust their behavior (Goupil & Kouider, 2016). Additionally, studies have found that 18-month-old children use spontaneous strategies to correct their mistakes during problem-solving (DeLoache et al., 1985), while 3-year-olds can monitor their problem-solving behavior and 4-year-olds can utilize metacognitive processing in puzzle tasks (Sperling et al., 2000). Therefore, current research supports that children demonstrate simple forms of planning, monitoring, and evaluation skills during their first year of life and early childhood years (Paulus et al., 2013; Chatzipanteli et al., 2014; Bernard et al., 2015; Roebers, 2017).

However, studies on metacognition have focused more on older children and adults when compared to younger children (Roebers et al., 2012; Whitebread et al., 2009), who know how to read and write. This might be because, in the literature, metacognitive skills are typically evaluated through self-report questionnaires (Wolters et al., 2012; Lachat-Shakeshaft et al., 2020), which cannot be applied to young children. Therefore, there is limited research on the metacognitive skills of young children.

It has been proposed that young children's lack of the ability to engage in metacognition may be attributable to methodological issues, such as an excessive emphasis on assessing metacognition through verbal means and inadequately designed experiments (Bryce et al., 2015; Chatzipanteli et al., 2014; Whitebread et al., 2009). For example, earlier studies heavily relied on children's capacity to express abstract ideas in hypothetical scenarios like the think-aloud technique (Chen & McDunn, 2022), which may be invalidated due to young children's restricted language and abstract thinking abilities (Papaleontiou-Louca & Thoma, 2014). Furthermore, these studies have been subject to other criticisms. There have been questions raised as to whether the measurement method (such as observational studies or verbal statements) is appropriate for the child's developmental stage or the setting in which the

measurement takes place (natural environment or laboratory environment) (Whitebread et al., 2007; Whitebread et al., 2009). Considering the limited verbal abilities and working memory capabilities of young children (Whitebread & Neale, 2020), data collection methods allow coding of both verbal expressions and actions of children during a task to assess metacognitive skills in early childhood have been implemented (see Bryce & Whitebread 2012; Bryce et al., 2015; Pino-Pasternak et al., 2010; Robson, 2010; Whitebread & Coltman, 2010; Whitebread et al., 2009). For instance, meaningful and authentic cognitive tasks like constructing a train track with instructions (Bryce & Whitebread, 2012) demand impromptu at-the-time metacognitive strategies (such as planning and monitoring) and elicit unplanned verbal and behavioral reactions (Chen & McDunn, 2022), which provides more precise metacognitive assessment outcomes.

As a result of the progress in these research methods and data collection tools, especially in terms of observation, new findings about metacognition in early childhood have been revealed (Bryce et al., 2015; Bryce & Whitebread, 2012; Destan et al., 2014; Geurten & Bastin, 2019; Robson, 2010; Whitebread & Coltman, 2010; Whitebread & Neale, 2020; Whitebread et al., 2009). For instance, Robson (2010) performed a study on the self-regulation and metacognitive skills of 3-4-year-old children over one year with a sample of 12 participants. The study collected two types of data: video footage of the children's self-initiated play activities and audio recordings of reflective dialogues where children watched and described their activities. The results indicated extensive evidence of metacognitive and self-regulation skills during their activities, with more evidence of metacognitive knowledge emerging in reflective dialogues. This study suggests that using video data and providing opportunities for young children to reflect on their activities are valuable tools for understanding their perspectives and effective tools for research and pedagogical purposes.

Another study by Geurten and Bastin (2019) employed the forced-choice perceptual identification test to evaluate metacognitive monitoring in two and a half-year-old children. They allowed them to ask for a cue when deciding whether their response was true. The study revealed that two and a half-year-olds exhibited metacognitive monitoring as they asked for cues more often following incorrect responses than

correct ones. These observations of what children actually do, instead of their recalls and beliefs, support a more precise assessment of metacognitive development in young children. This followed Whitebread et al. (2009) who conducted a study on three to five-year-old children and found that they demonstrated verbal and behavioral metacognitive knowledge and regulation in a problem-solving activity. Escolano-Pérez and colleagues (2019) expanded on this research by investigating the differences in metacognitive skills between 44 five-year-olds who either succeeded or failed at a puzzle task. The children were asked to assemble three triangle puzzle pieces into a shape depicted on picture cards. Firstly, they were allowed to think how to do it, then they were told to explain their plans verbally to the researcher, and lastly, execute the plan. During the implementation process, the experimenter recorded children's verbal and non-verbal behaviors using an observation instrument developed by Whitebread et al. (2009). Results revealed that the only difference in children's metacognitive skills was in metacognitive monitoring; the children who solved the puzzle better adjusted their strategies when encountering an error. These findings emphasize the importance of developing metacognitive monitoring skills in young children for successful problem-solving.

Destan and her colleagues (2014) investigated metacognitive monitoring and control processes in five to seven-year-old children, with a sample of 101 children in this age range. The researchers used three tools, including 'Stimuli,' featuring eight memory cards with Japanese characters and images, a 'metacognitive decision scale,' and a 'treasure chest and trash can' measure to assess children's decision-making confidence. After a study phase, the children were tested on their understanding of Japanese characters, and their judgments of their own learning were assessed. They were then given a memory test and asked to place their decisions in either a treasure chest or trash can to verify their accuracy. The results indicated significantly higher confidence in correct answers among all three age groups.

However, although the number of studies carried out in recent years has increased, research on the metacognition conducted in Türkiye is still limited for preschool children when compared to the older children and adults. In 2013, Adagideli conducted significant research investigating young children's metacognitive and self-regulatory skills while engaging in mathematics activities. The study's sample comprised 33

children aged 4 and 5. The research aimed to assess the children's potential to regulate their learning processes and develop an awareness of their thinking while involved in mathematics activities. The Cambridge Independent Learning (C.Ind.Le) Coding Scheme and the Children's Independent Learning Development (CHILD 3-5) Checklist, created by Whitebread et al. in 2009, were employed to analyze the data. The results indicated that young children possess metacognitive knowledge of individuals, tasks, and strategies, as well as metacognitive regulation abilities, empowering them to monitor and adjust their learning strategies based on the comprehension of their thinking processes. In addition, Saraç and her colleagues (2019) performed a validity and reliability study of the CHILD 3-5 Checklist (Whitebread et al., 2009) in the Türkiye context. They conducted the research in two phases. Two hundred and sixty-two children aged 3-5 participated in the first phase, while the second was carried out with 197 children. By removing six items in the 22-item scale, they determined that the scale remains valid for assessing the self-regulated learning of young children.

Moreover, Pekince and Avcı (2021) performed a study to examine the validity and reliability of the Train Track Task, developed by Bryce and Whitebread in 2012. Fifty-seven children, aged between 4 and 5 years, attempted to make three train tracks and were video recorded. The study analyzed the video recordings completing the oval, goggle, and P-shape tasks. The reliability of the ratings was measured using the Fleiss Kappa statistic, and a high level of agreement was observed across all sub-dimensions. In a different study, Pekince (2022) also examined the effect of participation-based education program on preschool children's executive functions and metacognitive skills with an intervention research design. The train track task was applied before and after the intervention program to assess metacognitive skills. As a result of the study consisting of 15 and 10 participants, a significant difference was found in favor of the experimental group in the sub-tasks of the goggle and P-shape train tracks, the sub-dimensions of monitoring and metacognitive skills, in which the intervention study was effective. Additionally, Yıldız-Altan and Temel (2023) also conducted an intervention study on the impact of a geometry education program on preschool children's metacognition and executive functions. Similar to Pekince, she used the Train Track Task to collect data in addition to the C.Ind.Le Coding Scheme. The study sample consists of 27 preschool children, 15 in the experimental group and 12 in the

control group. It was found that the metacognitive skills showed a significant difference in favor of the experimental group in the oval and P-shape sub-dimensions of the train track task, and the failures of metacognitive skills sub-dimensions were significantly reduced in the oval, goggle, and P tasks. In addition, in the three tasks, significant differences were found between the pretest and posttest in the sub-dimensions of control, metacognitive skills, failures of metacognitive skills, and quality scores of the children in the experimental group. These findings emphasize the importance of promoting metacognitive development in young children and highlight the potential for interventions to enhance their cognitive abilities. From the body of the relevant literature, it can be concluded that metacognition appears at an early age with a marked increase in ability at the transition between early childhood and adolescence (Schneider, 2008) and continues to grow into adulthood (Schraw & Moshman, 1995).

Studies have also found several socio-cultural and educational factors that influence preschool and school children's cognitive and metacognitive development (Barone, 2006; Dumais, 2006; Maric & Sakac, 2020; Yunlu & Clapp-Smith, 2014). Of these social factors, essential contributors were the family's socio-economic status and the educational background of the parents (Maric & Sakac, 2020). Maric and Sakac (2020) conducted research to investigate developmental and socio-educational variances in metacognition among a cohort of 418 preschool children whose ages ranged from three to six years. The study evaluated various factors, including children's gender, age, the socio-economic status of their families, parents' level of education, and the type of preschool institution attended. Participants were presented with a range of problem-solving tasks accompanied by explicit instructions. The C.Ind.Le Coding Scheme served as the primary means of evaluating the study's outcomes. The study revealed that children's metacognitive skills in the cognitive and motivational domains are positively influenced by higher socio-economic status. Children whose family had higher socio-economic status obtained higher scores for metacognitive components. Contrary to these findings, Pappas et al. (2003) showed that various socio-economic groups displayed similar, limited metacognitive skills. They also investigated the socio-economic differences of 102 children’s, aged 4-6, in terms of metacognitive skills and language to express these thinking processes during a problem-solving task. The key distinguishing factor between the groups was that the upper-SES children

were somewhat better than their middle- and lower-SES counterparts at providing sufficient explanations of their thinking, though the difference was insignificant.

However, socio-economic status is not the only factor causing inconsistencies. In some studies, males have been found to have higher scores (Marulis et al., 2016), while in others, females outperform (Akin, 2016; Ciascai & Lavinia, 2011), or no significant gender differences are observed (Maric & Sakac, 2020). Marulis et al. (2016) carried out a research project involving 43 preschool children aged between three and five years to evaluate metacognitive knowledge. A metacognitive knowledge interview (McKI) was developed, and the children's responses and behaviors were analyzed with regard to gender at two distinct points in time. The outcomes indicated that the boys had significantly higher scores on the McKI at Time 1; however, there were no significant gender differences observed in the McKI scores at Time 2. Similarly, Maric and Sakac (2020) found no significant difference between boys and girls in terms of metacognitive components in their study with 418 preschool children aged three to six years.

Maric and Sakac (2020) also revealed that children's metacognitive skills are positively influenced by higher levels of parental education. These abilities can be developed and improved through the use of various cognitive methods and instructions, as outlined by several sources (Clerc et al., 2014; Lai, 2011; Melo-León, 2015; Wang, 2015; Whitebread & O'Sullivan, 2012). Developing metacognitive skills and strategies is a form of meta-learning that depends heavily on early learning experiences, particularly within the family (Fisher, 1998). Well-educated parents are more likely to prioritize their children's early education and invest time, effort, and material resources in creating an appropriate educational environment during their children's early years (Barone, 2006; Dumais, 2006). Since gender, parent educational status and family income affect metacognition, it is important to understand them and support children’s metacognition starting from a very early age with appropriate experiences, relationships, sources, and strategies.

2.5. Resilience

The study of resilience spans multiple disciplines from psychology to public policy and calls upon numerous theoretical orientations. While it has drawn attention from

diverse fields it has primarily been investigated within psychology (Hosseini et al., 2016). Given the range of disciplines that are influenced by and inform the direction of resilience research, a broad range of definitions and conceptualizations exist (see Bryan et al., 2019; Fletcher & Sarkar, 2013; Southwick et al., 2014). Recent research has emphasized that a multitude of conflicting definitions have been utilized in papers related to resilience (Bryan et al., 2019). Differences in definitions and conceptualizations are concerning since how resilience is conceptualized also shapes how it is measured and analyzed and ultimately impacts the interventions implemented in practical settings (Den Hartigh & Hill, 2022). Resilience studies have their origins in the longitudinal research of Werner (1989), who examined how children in Kauia successfully overcame risks and difficulties in 1955. Initially, researchers focused on identifying the personal qualities that individuals needed to cope with stressful situations Similarly, resilience is generally defined as an individual's ability to achieve favorable results despite challenging circumstances (Southwick et al., 2014), and a major concern is developmental trajectories (Masten, 2018). When resilience is described in basic or tangible terms, it pertains to the capacity for constructive, favorable growth or adaptation at the biological, psychological, and social levels when encountering risks or challenges (Gavidia-Payne et al., 2015; Zimmerman, 2013). Alternatively, it has been defined in various ways, including a characteristic, sequence of events, result or life pattern, or a general area that contains all these concepts (Masten, 2018).

As a different approach, according to Rutten et al. (2013) resilience can be characterized from a biological perspective as the ability to sustain homeostasis during stressful times. Likewise, Luthar and colleagues define resilience as “a dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar et al., 2000, p. 545). While early research on the topic examined resilience as a trait or quality that an individual may or may not possess (Southwick et al., 2014), the literature now tends to recognize resilience as an adaptable process that shifts over the course of an individual’s lifetime (Masten, 2018). However, studies also indicate that resilience cannot be understood solely as an individual process but should also be analyzed within a specific socio-cultural context (McCubbin et al., 1999; Qamar, 2023) and within the protective factors in one’s environment (Luthar, 2003; Luthar et

al., 2000; Fraser, 2004). From this perspective, resilience encompasses both the effective use of internal and external resources.

Luthar et al. (2000) suggest that an individual's resilience is determined by balancing risk and protective factors in the face of adversity. This separating out of risk and protective factors has been a common way of conceptualizing what facilitates an individual in being resilient. Risk factors are seen to affect a person's ability to adapt to stress and can negatively impact on how vulnerable a person may be to develop physical and mental health difficulties (Smith-Osborne, 2007). On the other hand, protective factors are seen to promote resilience by decreasing the impact of risk and subsequently the negative reaction to it by helping individuals achieve a positive outcome in adverse situations (Rutter, 1987; Zauszniewski et al., 2010). Studies by Luthar et al. (2000) and Wyman et al. (2000) support the significance of fundamental factors providing positive development and fostering resilience. These factors consist of certain traits of the child, such as cognitive ability, self-regulation skills, positive self-concept, supportive and caring adults in the family and the community, and access to high-quality education. The protective effect of these factors is more pronounced when they operate in conjunction with each other (Toland & Carrigan, 2011).

Parallel to this, a significant amount of attention has been directed to resilient functioning of children, youth, and adolescents (Cicchetti, 2013; Garmezy & Rutter, 1983; Masten, 2014; Panter-Brick & Leckman, 2013; Ungar et al., 2013; Werner & Smith, 1992). The notion that resilience develops during childhood is supported by extensive research on the topic in the context of attachment theory and neurobiology (Rutten, et. al., 2013). Given this tenet, it is reasonable that the role of families and teachers in the context of adversity is often cited. Observation of current trends in resilience research suggests that individual and family functioning may be inextricable from one another, with the parent-child relationship playing a particularly operative role. Specifically, "high-quality relationships between parents and children are implicated in virtually every study of resilience in children" (Yates et al., 2015, p. 779). Furthermore, if teachers, who serve as the main role models for their students, do not exhibit resilient characteristics, it is unreasonable to anticipate students to be resilient (Henderson & Milstein, 2003). Thus, it can be concluded that resilience is shaped by how the person's internal strengths and external surroundings interact and influence each other as the person develops and adapts (Gu & Day, 2007). This shows

the necessity of adopting a holistic approach to examine resilience with its risk and protective factors.

2.5.1. Defining Risk and Protective Factors of Resilience

The World Health Organization's (WHO) European policy framework for health and well-being [Health 2020], published in 2013, emphasizes the crucial role of resilience, which has been a popular topic across different fields. Health 2020 considers resilience as the core area of focus that needs to be developed. According to the policy, the key to thriving individuals and communities lies in strengthening their resilience and creating supportive environments. One of the reasons for the increased focus on resilience might be that the complexities of contemporary social issues have increased compared to the previous decades (Yang et al., 2017). This situation highlights the necessity of more resilient individuals. Given the lack of a unified conceptualization and definition (Den Hartigh & Hill, 2022), presenting a common understanding is critical to examine the factors related to resilience.

According to Ungar et al. (2007), resilience is the result of both how people interact with their surroundings and the actions that lead to that outcome. These outcomes and actions are affected by the context in which individuals live, such as the well-being of their community and the ability of social institutions like schools and law enforcement to meet their needs, as well as the cultural values, beliefs, and daily coping practices (Boyden & Mann, 2005; McCubbin et al., 1998; Sonn & Fisher, 1998; Wolkow & Ferguson, 2001). Similarly, Fleming and Ledogar (2008) have emphasized that resilience is context-specific and expanded that the given domain, age, and broader social and environmental conditions like geography and culture influence resilience. The context shaped by these conditions will determine whether a particular factor is protective. This can be illustrated briefly by Luthar's (2006) study wherein she discusses how parents' different styles of monitoring and regulating adolescent behavior can vary according to race, geography, and socioeconomic status. In a middle-income, North American suburban family, strict monitoring could be excessive, resulting in opposition and defiance among adolescent children. However, in a low-income, inner-city family, such parental behavior could be perceived as supportive and loving by adolescents if there is an immediate threat of multiple

substantial risks in the neighborhood. Although there are differences in perceptions of risk and protective factors, various researchers put effort to detect these factors.

A body of literature categorizes the risk factors and protective factors into three levels which are generally called individual, family, and community/environment (Garmezy et al., 1984; Gizir, 2007; Rutter, 1979; Werner, 1995). Risk factors refer to specific characteristics of a particular group, which increase the chances of experiencing harmful and undesirable consequences (Masten, 1994). These risk factors can be genetic, biological, sociocultural, or demographic conditions or traits (Gizir, 2007). Numerous risk factors have been extensively studied within the concept of psychological resilience, particularly among children and young people in literature. Studies have considered chronic diseases (McCubbin et al., 2002; Nakashima & Canda, 2005), adverse life events (Masten et al., 1999; Tiet et al., 1998), and premature birth (Bradley et al., 1994) as *individual risk factors*. *Familial risk factors* are defined as becoming a mother during adolescence (Werner & Smith, 1982), separation, divorce, death of the parents, or living with a single parent (Chen & George, 2005; Greeff & Ritman, 2005; Tebes et al., 2004), and illness or psychopathology of the parents (Kumpfer & Bluth, 2004; Pilowsky et al., 2004; Pölkki et al., 2004). Finally, *social/environmental risk factors* are low socio-economic level, economic difficulties and poverty (Buckner et al., 2003; Schoon et al., 2004; Wu et al., 2021), child neglect and abuse (Lansford et al., 2006; Wilcox et al., 2004), social traumas such as war and natural disasters (Agabi & Wilson, 2005; Goodman, 2004), social violence and family disasters (O'Donnell et al., 2002) and homelessness (Reed-Victor & Stronge, 2002). Several studies have suggested that economic disadvantage during childhood can have a lasting impact and may lead to reduced resilience later in life (Miller et al., 2009; Morton et al., 2012; Shonkoff et al., 2012).

In addition to being categorized as individual, family, and community/environment, protective factors have also been assigned according to their deployment at the individual level, microsystem level and macrosystem level (Sandler, 2001). Accordingly, various protective factors have been observed at the *individual level*, namely intelligence (Masten et al., 1999; Masten & Reed, 2002; Sapienza & Masten, 2011), communication skills (Werner, 1995), constitutional resilience (Allen, 1998; Smith, 1999; Werner, 1995), sociability (Allen, 1998; Werner, 1995), and personal attributes such as optimism and hopefulness (Kumpfer, 1999; Martinek & Hellison,

1997; Sapienza & Masten, 2011), self-efficacy and self-esteem (Kumpfer, 1999; Masten et al., 1999; Olsson et al., 2003; Sapienza & Masten, 2011). *Family level protective factors* are associated with supportive families including positive relationships with family members, effective parenting and realistic expectations for the child (Buckner et al., 2003; Masten & Coatsworth, 1998; Masten et al., 1999; Rutter, 1990). The *social/environmental protective factors* are mentioned as socio-economic status (Allen, 1998; Wu et al., 2021), school experiences (Rutter, 1987; Werner, 1995) including peer support (McWhirter et al., 2012), positive relationships with supportive adults (Gilligan, 2000; Smokowski et al., 2000; Werner & Smith, 1992), supportive communities (Smith, 1999; Werner, 1995; Wolf, 1995), and effective social resources (Dearden, 2004; Masten, 1994). Thus, both cultivating an individual's internal resources and abilities, as well as modifying their social environment, should be considered to enhance resilience further (Olsson et al., 2003).

2.6. Resilience of Families

Resilience was initially studied as the positive adaptation of children to adversity (Rutter, 1987). Recently, the concept has been applied to family systems, building on research into family stress, coping, and adaptation by several authors (Allison et al., 2003; McCubbin & McCubbin, 1996; Walsh, 1998, 2002). Family resilience goes beyond managing stress or surviving adversity. It involves potential personal and relational transformation and growth that can emerge from adversity (Boss, 2001).

Walsh (1996; 2012) suggests that the notion of family resilience goes further than perceiving individual family members as possible sources of personal resilience, instead concentrating on the risk and resilience of the entire family as a functional entity. Bowlby (1977) highlighted the vital significance of the child-caregiver relationship and the way parents bring up their children has the potential to protect their welfare or intensify developmental risks in stressful environments (Nerenberg & Gewirtz, 2017). Similarly, Masten (2018) emphasizes the importance of caregiver resilience for the well-being of children and the family system. A systemic view recognizes that crises and adversity impact the entire family, potentially derailing family functioning and relationships (Bowen, 1978; Brown, 1999; Hastings et al., 2005; Walsh, 2003). Patterson (2002) contends that family resilience involves examining the product of family relationships, and Luthar et al. (2000) argue that

resilience is best understood through a broader, interrelational framework that recognizes parental strengths, family dynamics, inter-relationships, and the social context. This strength-based approach sees family stress and challenges as opportunities for development and healing (McCubbin & McCubbin, 1988, 1996; Walsh, 2003).

The concept of family resilience incorporates both ecological and developmental perspectives to view the family in the context of its sociocultural environment (Mackay, 2003; Simon, et al., 2005). According to the ecological perspective, risk and resilience are determined by the interplay between an individual's and family's risk or resilience and their ability to cope with stressful situations throughout their lives (Walsh, 2012). The sociocultural context and family dynamics can mitigate or reinforce genetic and biological predispositions (Moore & Neiderhiser, 2014). If someone fails to cope with significant life stressors or accumulated stress, it may lead to distress (Walsh, 2012).

All families face stressors, but resilient families are strengthened by utilizing protective and recovery factors to respond to stressors (Black & Lobo, 2008; McCubbin & McCubbin, 1993). Protective factors support adaptation, which involves preserving integrity and achieving developmental tasks during times of challenge. On the other hand, in times of adversity, recovery factors come into play, helping to promote resilience and the ability to adapt and recover from crises (Black & Lobo, 2008). These factors are defined by various researchers (Black & Lobo, 2008; Chen & Bonanno, 2020; McCubbin & McCubbin, 1993; Walsh, 2006, 2012) and they include spirituality, flexibility, financial management, family cohesion, communication, support network, routines and rituals, the ability to make meaning of adversity, maintaining a positive outlook, family time and utilizing social and economic resources. Thus, these factors can enhance the family's ability to overcome adversity and challenging situations together.

The family plays an essential part in a child's growth and development, and how parents encourage their children's development is affected by various factors, including the child's temperament and developmental stage, the parent's characteristics, socioeconomic status, cultural practices, and educational strategies. Indeed, a recent study has discovered that perceived stress, parental competence, and

marital adjustment also influence family resilience (Cihan & Calik-Var, 2022). Parental competence refers to the parents' sense of capability in fulfilling their parenting responsibilities (Ardelt & Eccles, 2001; Hassall et al., 2005). Inadequate parental competence may result in negative perceptions of the child and contribute to the emergence of behavioral problems in the child. In contrast, high parental competency can equip parents with positive communication, acceptance, and connection with their children (de Montigny & Lacharité, 2005). On the other hand, marital adjustment refers to combining the personality traits of two individuals into a partnership, working towards common goals and attaining happiness (Burgess & Cottrell, 1939). Experiencing distress and stressful life events can harm both the ability to demand partner support and to provide support to one's partner (Cohan, 2010), resulting in a decrease in the level of closeness between them, reduced emotional sharing and dyadic coping, lower quality communication, and an increased tendency to withdraw (Cihan & Calik-Var, 2022). Studies have demonstrated that couples' perception and experience of stressful life events negatively affect their marital adjustment. According to Li and Wickrama (2014) and Neff and Karney (2009), couples who experience such adverse effects tend to have a lower marital adjustment. In contrast, couples with higher levels of positive affect and lower levels of negative affect typically have better marital adjustment.

A study conducted on 107 Japanese immigrant mothers with children aged four to eight aimed to explore the indirect relationship between family resilience, perceived stress, and marital adjustment. The study concluded that successfully adapting children to their new location is affected by these three components (Izumi & Gullón-Rivera, 2018). Therefore, parents need to handle their stress levels effectively and seek social support to create a conducive environment that fosters the development of family resilience, which impact their children’s development.

In addition to these concepts, studies have shown that there are other factors affecting families, and the effect of each aspect of family resilience on individual resilience has been explored. The family's socioeconomic indicators impact numerous concepts related to the family (Cihan & Calik-Var, 2022). Several studies have indicated that lower income, financial instability, or economic difficulties are linked to reduced levels of marital satisfaction (Amato et al., 2007; Dakin & Wampler, 2008; Falke & Larson, 2007; Stanley et al., 2006), which in turn can impact family stress and stability.

A study conducted by Dakin and Wampler (2008) examined 112 couples and the impact of socioeconomic status on their marriage. The results showed that financial well-being is a critical factor in marriage. Couples with lower incomes had less marital satisfaction and more psychological distress. Furthermore, Wister et al. (2016) proposed that individuals with higher socioeconomic status exhibit greater resilience due to their access to more significant social and economic resources than those with lower ones.

In their study, Dakin and Wampler (2008) also revealed that low-income couples had less education and were less likely to have full-time employment. Research by Ha et al. (2008) supported the finding that employed parents tend to report significantly lower levels of negative emotions and better psychological well-being. Thus, family income and employment statuses represented as crucial factors that would challenge the low-income families. As a supporter, Ha et al. (2008) found that parents' education positively impacts some well-being indicators. They found that parents who have children with mental health problems and a higher level of education tend to report slightly better psychological well-being. Moreover, Azad and colleagues (2014) and Zhai (2017) have shown that highly educated parents tend to exhibit greater competence in displaying warmth, sensitivity, cognitive encouragement, and caregiving towards their children. Additionally, McConnell and colleagues (2011) stated that these parents are more knowledgeable about their children's developmental needs and better equipped to access information and supplementary resources when required. Similarly, Cihan and Calik-Var (2022) reported that parents who have completed high school education tend to exhibit higher levels of parental self-efficacy than those who have only completed primary school or hold graduate or post-graduate degrees. However, Kaner et al. (2011) and Taşdemir (2013) found no significant differences in general resilience levels between parents of children with multiple disabilities regarding their education levels.

The gender of the parent is also considered to be a factor that may impact resilience, although studies mainly focused on the parents of children suffering from a disease. Literature about the impact of parent gender on resilience have yielded inconsistent results with low participation of fathers (Soltanifar et al., 2015; Rivard et al., 2014). Eilertsen et al. (2015) found that mothers of children who survived cancer experienced better mental health outcomes when they possessed certain resilience factors, such as

a positive self-perception, a sense of future planning, and strong family cohesion. On the other hand, other studies discovered that mothers of children diagnosed with autism spectrum disorder exhibited higher levels of anxiety and depression compared to fathers (Bitsika et al., 2013; Cheatham & Fernando, 2022; Jones et al., 2013). Although both genders showed similar levels of resilience, the burden of caring for their child seemed to be more heavily felt by mothers, which may explain their higher psychological distress. In contrast, Cihan and Calik-Var (2022) did not discover a significant difference between mothers' and fathers' marital adjustment, self-efficacy in the parental roles, their perceived stress and family resilience. Similarly, Yuan and colleagues (2022) conducted a study with the parents of patients with cleft lip and/or palate. The results showed that even though fathers and mothers did not exhibit a notable difference in the degree of resilience, fathers had a greater level of resilience compared to mothers. Asides from these findings, there are also studies which could not find a connection between gender and resilience (Esen-Aktay, 2010; Sezgin, 2012). Although there are inconsistencies about the impact of the parent gender on family resilience, it is clear that children's development is influenced by a variety of factors to do with family resilience and the home environment.

The resilience of a family could have a substantial impact on the psychosocial adjustment of children, as it is associated with positive behaviors such as prosocial conduct (Orte et al., 2015; Qui et al., 2021). In their study, Qui and colleagues (2021) worked with 236 parents whose children had chronic illness and 98 parents whose children were in good health. The ages of the children ranged between 3 and 16. They found that compared to the group with healthy children, parents of children with chronic illnesses displayed lower levels of family resilience. Additionally, they reported experiencing more issues in their child's peer relationships.

High levels of family resilience can help reduce the negative impact of adverse childhood experiences on children's behavior (Uddin et al., 2020). This is because resilient families possess flexibility in their organizational patterns that allow them to remain together during times of crisis, rapidly deploy crisis management skills, develop new strengths, and foster stronger bonds (Rolland & Walsh, 2006). Effective communication and maintaining close family relationships are also critical features of resilient families, contributing to positive parenting practices that enhance children's psychosocial adjustment (Bámaca-Colbert et al., 2018). Also, research has explored

how a child's early cognitive development and future academic performance are influenced by their home environment. For instance, Henderson (1966) discovered a significant connection between environment and intelligence while studying the cognitive development of low socio-economic Spanish-American children. Henderson considered several environmental factors consistent with previous studies, such as parents' education, reading habits, attitudes toward education, and physical surroundings. Coleman et al. (1966) argued that the home environment has the most significant impact on children's learning. Therefore, parents' ability to cope with disadvantaged situations and their involvement are essential factors in their children's learning and development, but they are not the only factors. Apart from parents, children often have another adult figure with whom they spend much of their time: teachers. Hence, teachers should be aware of their influence on children and understand their crucial role in supporting their development.

2.7. Resilience of Teachers

Masten (1994) highlighted protective factors for resilience in children and young people, which included having positive relationships with adults other than parents, good intellectual skills, socioeconomic advantages, self-efficacy, self-worth and hopefulness. For children, one of these adults they portray is the teacher. Students spend a lot of time with their teachers at school; therefore, their relationship and interaction with their teachers has a direct impact on them (Bronfenbrenner, 1979). That is why the resilience and well-being of teachers are critical.

The demanding nature of school and work creates a challenging environment for teachers, hindering their job satisfaction and performance. According to research by Aydın (2002) and Balay (2000), excessive stress negatively impacts the teaching profession. Chan (2003) states that a significant number of teachers view teaching as a highly stressful job. The current research also supports this finding, indicating that the teaching profession is associated with the most significant amount of stress (Aydin & Kaya, 2016; Greenfield, 2015; Kebbi, 2018; Paquette & Rieg, 2016; Stiglbauer & Zuber, 2018). Teacher stress can be caused by overcrowded classrooms, inadequate school equipment and materials, social violence, lack of professional development in basic curriculum reforms, teacher evaluation based on student scores, poor communication and relationships with students, student-related crime and discipline

incidents, and insufficient income sources (Ajayi, 2016; Hanushek & Rivkin, 2006). This stress can lead to burnout and feelings of disconnection from the profession (Azeem, 2010; Chan, 2003). Teachers who experience high levels of burnout often feel a lack of control over their professional lives and a sense of monotony, leading to a feeling of boredom (Karakelle & Canpolat, 2008). When teachers are under intense stress, it becomes difficult for them to make a long-lasting impact in their careers.

In the past 20 years, numerous researchers in the teaching and teacher education field have focused on teacher resilience (Bobek, 2002; Kinay et al., 2021; Sezgin, 2012; Wosnitza et al., 2018). *Teacher resilience* refers to a teacher's ability to effectively adjust to difficult and potentially adverse situations (Greenfield, 2015). Indeed, teacher resilience is a multidimensional construct. According to Mansfield and colleagues (2012), resilience encompasses emotional well-being (recovery and self-care), professional competence, motivational traits (self-assurance and perseverance), and social skills (seeking assistance and fostering solid relationships). On the other hand, Gu and Day (2007) categorized teacher resilience into three categories: personal resilience, which pertains to life outside of school; situated resilience, which pertains to life within the school; and professional resilience, which pertains to the interaction between values and policies. However, both resilience models emphasize the overlapping nature of the components. A variety of factors contribute to teachers' resilience and work engagement including opportunities to be innovative, job control, and effectiveness of supervisory support (Hakanen et al., 2006). In a literature review of the field of teacher resilience, Beltman and colleagues (2011) described the factors that teachers often mentioned as contributing to resilience. These factors comprised personal qualities like moral purpose, self-assurance, and coping abilities. Additionally, teaching skills like understanding students and various teaching methods, as well as reflecting on and improving one's profession, and taking care of one's own well-being, were also included. In addition, they also found that in order to promote teacher resilience, the teachers' *self-efficacy* is essential, which refers to a teacher's confidence in their ability to organize and execute necessary actions to achieve successful outcomes in a specific teaching situation (Tschannen-Moran et al., 1998). This finding was also supported by Gu and Li (2013). Furthermore, studies have revealed a positive correlation between teachers' perceived ability to handle situations and their resilience (Bowles & Arnup, 2016; Taylor, 2013). In other words, when

teachers believe in their capacity to manage a particular context, they tend to be more resilient.

In order to promote productive environments to teachers and prioritize their well-being, it is essential for teachers to be removed from stressful situations. However, several factors contribute to teacher stress worldwide. One such factor is negative student behavior, such as disrespect, which has been found to lead to teacher burnout at all grade levels (Friedman, 1995). Additionally, work overload and low salaries are occupational factors that also contribute to increased teacher stress (Schonfeld, 2001). In a recent study by Kulekci-Akyavuz (2021) on teacher perceptions of positive psychological capital, one participant cited low salary as a barrier to their psychological well-being. The participant expressed that earning a low wage diminishes their resilience in the profession, and even something as significant as buying a house or a car would require almost a lifetime of work.

In addition to salary, teacher education was stated as a factor in resilience by Schaefer and colleagues (2012). In a recent study, Chu and Liu (2022) examined the relationship between 330 English as foreign language teachers' resilience and their educational backgrounds. The study categorized the teachers into two groups based on their educational status: those with a bachelor's degree and those with a master's degree. The findings of the study indicated that teachers with a post graduate education exhibited greater levels of resilience. Similarly, according to Akgün's (2021) research, which involved 1066 preschool teachers, those who had completed postgraduate education, a master's or doctorate, exhibited significantly higher levels of psychological resilience than colleagues whose most recent educational attainments were a high school diploma or undergraduate degree. In the literature, there are studies indicating that the level of psychological resilience differs significantly according to educational status (e.g., Bozgeyikli & Şat, 2014); however, there are also studies that suggest that there is no significant difference in psychological resilience based on educational status (e.g., Selçuklu, 2013; Yılmaz & Yalçın, 2020).

All these factors are crucial to consider the psychological resilience of teachers who typically encounter numerous circumstances that create conflict and stress, affecting both their professional and personal lives and potentially jeopardizing their psychological well-being (Girgin & Baysal, 2005). Higher teacher stress levels and

low psychological resilience can cause exhaustion and burnout. Such depletion can result in a decrease in the quality of education and the achievement of students (Boyd, 2013). A study conducted by Gray et al. (2017) revealed that teachers who undergo burnout tend to exhibit a series of behaviors, including but not limited to absenteeism and irritability toward their students. These actions can adversely affect the students, resulting in a negative impact on their learning and development. If teachers are unable to cope with the challenges they encounter within schools and are unable to recover from them, their effectiveness may decrease, and they may become less enthusiastic and committed, which could negatively affect educational environment (Greenfield, 2015).

On the other hand, it is believed that having resilience may help teachers to not only survive but thrive as healthy professionals, benefiting both their own well-being and that of their students (Beltman et al., 2011); and with teacher resilience as both a predictor of effectiveness (Beltman et al., 2011; Clotfelter et al., 2010; Gu & Day, 2007), and an important model for students to follow (Bernshausen & Cunningham, 2001; McCain, 2017). According to Day et al. (2006), when teachers experience lower stress levels, they can enhance the teaching process, which positively impacts students' academic and social success. Creating a classroom environment that is healthy for both the teachers and students helps to reduce stress and improve well-being by distributing responsibility, setting behavioral guidelines for the classroom, and creating a welcoming and cheery environment (McCallum & Price, 2010). If the resilience of teachers is enhanced, it is anticipated that they will handle student misbehavior more effectively, be less impacted by unfavorable working conditions, better manage challenging situations, exhibit increased job contentment, and encounter lower stress levels (Polat & Özdemir, 2018). Thus, teacher resilience and contributing factors are essential to promote better life and learning experiences to both teachers and students.

2.8. Metacognition, Resilience and Children

Studies reveal that early childhood is a critical period for the development of children, and it is crucial for them to receive high-quality care, access to learning opportunities, sufficient nutrition, and community support for families (Yoleri, 2020). The positive development of cognitive, social, and self-regulation skills is facilitated during this phase, laying the foundation for competence and establishing protective systems

essential for human development (Sameroff, 2009). Interventions during this phase can significantly reduce the risk of future difficulties because they are more effective than those made in later years, and they enhance resources, promote competence, and create a strong foundation for future development (Camilli et al., 2010). Therefore, the early childhood years hold enormous potential to lay the groundwork for a lifetime of success and well-being.

The relevant literature shows rapid changes occur in metacognitive development between the ages of three and seven (Bryce et al., 2015; Whitebread et al., 2009; Roebers et al., 2012). Thus, at an early stage of development, it is critical to provide children with instructions on learning strategies, which play a crucial role in acquiring metacognitive skills. It is essential to teach them the characteristics of these strategies and how, why, and when to utilize them. As evidence, Thompson (2007) highlighted that despite no decline in children's intelligence, they often fail to utilize effective strategies when confronted with academic tasks, which may indicate reduced thinking abilities. Thompson (2007) further emphasized that a lack of metacognition, including knowledge of different strategies and how to manage cognitive tasks, can cause this issue. In order to promote children's ability to regulate their own performance in activities and strategies, it is crucial to provide support for their metacognitive skills (Bodrova & Leong, 2005). Indeed, numerous studies have also emphasized the important role of metacognitive skills in promoting effective learning (Caviola et al., 2009; Kuhn & Dean, 2004; Teong, 2003). Thus, providing the best experiences and opportunities for children during this period is vital to their attainment throughout their lives.

To promote the development of children, it is essential that educators offer a high-quality learning environment and facilitate the learning process through diverse strategies and practices in appropriate circumstances (Senemoğlu, 2020). Research suggests that metacognitive skills can improve through practice at any age (Brown & DeLoache, 1978; Doran & Cameron, 1995; Schellenberg et al., 2011; Yasir et al., 2020). According to Rozencwajg (2003), practicing metacognition can increase fluid intelligence, which refers to the ability to solve problems when confronted with unknown information or situations. Imir (2018) suggests that using Reggio Emilia-based documentation practices in the classrooms increases children's metacognitive

skills through heightened interaction with the documentation, resulting in higher-level reflection expressions.

In parallel to such findings, Aras and Tantekin-Erden (2020) reported that utilizing pedagogical documentation practices support the development of metacognition in preschool children. Their study was conducted with 11 preschool children whose reflective dialogues and sharing times were videotaped in the classroom. The data was coded and analyzed through the C.Ind.Le framework and results showed that sharing time sessions and reflective dialogues enhance children's metacognitive skills. Moreover, the study's results revealed that children exhibited an increased number of instances of monitoring and control concerning metacognitive regulation during sharing times, plausibly due to peer interaction.

Concurrently, Whitebread et al. (2007) found that activities involving peer interaction and collaborative working support the development of children's metacognitive skills development. Similarly, Iiskala and colleagues (2004) indicated that peer teaching also supports children's metacognitive processes. On the other hand, Cassata and French (2006) suggest that children's metacognitive skills can be improved with appropriate adult support. Likewise, Wong and Kei (2013) reported that children show more metacognitive skills in activities performed with adult help, modeling, and encouragement. For instance, preschool teachers who provide feedback in the classroom can remarkably improve the metacognitive control behaviors of children (Munoz & Cruz, 2016). Also, in another study, Dörr and Perels (2019), designed an intervention aiming to improve metacognitive skills, along with their important caregivers: not only preschool teachers but also parents of 137 preschool children. The participation of parents and preschool teachers was effective. These caregivers gained a better understanding of children's early use of metacognitive skills and learned beneficial methods to support their development and application. The results showed a significant impact for performance measure. Therefore, significance of families should also be considered.

Previous research has demonstrated a strong correlation between parents' ability to encourage their children's autonomy and their engagement in metacognitive behaviors. According to Neitzel and Stright's study (2003), mothers' support for their children's autonomy was found to predict their task persistence and behavior control positively.

Children with higher levels of responsibility could utilize their cognitive abilities and see themselves as active learners. However, the cognitive support children get from their parents is essential because parents' cognitive support can equip children with valuable learning techniques (Mermelshtine, 2017) and also predict their metacognitive abilities, such as talking, monitoring, and seeking help (Neitzel & Stright, 2003). At this point, families can provide metacognitive support, which can foster children's cognitive development (Erdmann et al., 2019) through strategy use and planning by offering suggestions on approaching the task and providing instructional assistance (Stern & Hertel, 2022). When parents offer metacognitive support, children are more likely to utilize higher-level metacognitive strategies, including improved monitoring, detecting, and correcting errors, and adapting their learning strategies (Neitzel & Stright, 2003; Stright et al., 2009). Preliminary findings indicate that the interactions between children and their family members impact the neurobiological growth of the child's brain (Takeuchi et al., 2015). Therefore, these findings highlight the importance of the difference between the quantity and quality of the scaffolding provided by family members (Wood & Middleton, 1975). In order to improve the quality and provide the best possible experiences, understanding scaffolding and the factors that affect it is essential.

Several studies have demonstrated the positive impact of indirect interventions that involve special programs for parents (Lund et al., 2001) or teachers (De Jager et al., 2005; Souvignier & Mokhlesgerami, 2006) on the learning outcomes of children. These interventions aim to optimize the learning environment and create optimal learning opportunities, which aligns with the principles of Deci and Ryan (2000). In this regard, resilience is a critical concept that needs to be considered, both in individuals' lives and learning environments, as it helps to provide the necessary experiences and opportunities for optimal learning to children. Clearly the challenge for teachers and families is to ensure that their well-being and resilience are adequate for motivating and assisting their children.

Scholars of both education and resilience have emphasized the importance of developing metacognition to enhance the ability of individuals and societies to adjust to changes (Bransford et al., 2000; Fazey et al., 2007). As individuals go through the developmental process, they encounter various positive and negative situations that require them to adapt. In order to prepare children for potential adversities and help

them maximize future learning opportunities, it is essential to teach them a range of skills and strategies as early as possible (Yoleri, 2020). Studies have pointed out that resilience is closely associated with metacognitive skills, and this connection is rooted in the process of creating meaning through the narration of experiences (Ellison & Mays-Woods, 2018; Leroux & Théorêt, 2014). Therefore, examining the relationship between these concepts and discovering the factors affecting them is important to present better futures to children and societies.

2.9. Summary of the Literature Review

Metacognition is emerging as a crucial learning skill in the 21st century (Brown et al., 2015), and a growing body of literature has started to focus on supporting its development. However, most studies tend to be conducted with older group children and adults (Donker et al., 2014; Hong et al., 2020; Winne, 2017) because of the persistence of earlier claims in some quarters that young children cannot possess metacognitive skills (e.g., Veenman & Spaans, 2005; Veenman et al., 2004). However, recent literature proves the opposite (Bryce et al., 2015; Bryce & Whitebread, 2012; Escolano-Perez et al., 2019; Lyons & Ghetti, 2013; Marulis et al., 2016; Rohwer et al., 2012; Whitebread et al., 2009) and promoting its development can enhance various skills. Despite this growing body of research into the factors contributing to metacognitive development in the early years, the roles of families and teachers have been somewhat overlooked. Learning does not occur in isolation, and the same holds for metacognition; hence, further insight is imperative regarding the interactions between individual differences, contextual factors, and metacognition and its various components (Veenman et al., 2006). Consequently, further research is necessary to investigate the direct and indirect effects of these components on young children's metacognitive development.

Within the Bronfenbrenner's Ecological Systems Theory, families and teachers are nested in the children's microsystem and have a direct impact on their development (Bronfenbrenner, 1994). Thus, their psychological well-being and resilience affect young children's behaviors and metacognitive development. Similarly, from the Sociocultural Perspective, scaffolding provided in the home and school environment influences the development of metacognitive skills (Neitzel & Stright, 2003; Stright et al., 2009). Children are social learners and can learn from what they see, observe, and

experience (Vygotsky, 1978). Thus, promoting appropriate experiences and opportunities for children can improve their metacognitive skills.

In order to present good learning opportunities, and to avoid reflecting and exposing children to stressful, challenging situations, adults should have good well-being, and they should be resilient. Nevertheless, there are many factors that can affect their psychological well-being and resilience, and a great body of literature has examined the impact of socioeconomic status, educational status and gender (e.g., Akgün, 2021; Cheatham & Fernando, 2022; Ha et al., 2008; Jones et al., 2013; Kulekci-Akyavuz, 2021; Wister et al., 2016). Whether intentionally or unintentionally, these factors can directly impact the resilience of families and teachers, which, in turn, can indirectly affect their interactions with children and their metacognitive development. For this reason, the relationships between these variables are explored in the present study.

CHAPTER 3

METHOD

This chapter presents how the data was collected and analyzed. First, the design of the study is explained. Second, the population and samples of the study are described. Then, the data collection instruments and data collection procedures are given. Finally, ethical considerations and validity threats are identified.

3.1. Design of the Study

Research methods should be chosen to increase the opportunity to answer the researched questions (Johnson & Onwuegbuzie, 2004). The first purpose of this study is to examine the metacognitive skills of preschool children, and determine whether they differ with respect to their gender, parents' educational status and family income. Additionally, it aims to investigate whether families' resilience differs with respect to their gender, educational status, and family income. Moreover, the current research also aims to discover whether teacher resilience relates to their educational status and income level. The study therefore seeks to examine the possible relationship between the metacognitive skills of preschool children and the resilience of their families as well as their preschool teachers. Finally, the current study aims to investigate the direct and indirect relationship among the variables of the study. To accomplish the purposes of the present study, a quantitative research design was used to collect data from preschool children and their families and teachers, and later a path model was created to present the relationships.

Quantitative method studies vary by design, and there are three types in total (Creswell, 2015). The correlational research method was used in this study as it is known to help explain significant human behaviors or predict likely outcomes (Creswell, 2015). In its simplest form, correlational research seeks to explore the presence and strength of a relationship between two or more variables (Creswell, 2015; Fraenkel et al., 2012; Gay et al., 2012). Within this scope, this study aims to examine

the relationship between the metacognitive skills of preschool children and the resilience of their families and teachers. Specifically, an explanatory correlational design was used (Creswell, 2015; Fraenkel et al., 2012; Gay et al., 2012), which is often selected by researchers to investigate several variables they believe are related to a more complex variable (Fraenkel et al., 2012). The explanatory correlational design in this research is complemented by advanced model-based procedures such as confirmatory factor analysis and path analysis, which can depict the associations among variables (Creswell, 2015; Fraenkel et al., 2012).

Path analysis was created with the purpose of measuring the relationships between several variables (Wright, 1918, 1921). It is a useful statistical technique for explaining causal relationships between variables, as it frequently utilizes the concept of mediation to account for a variable's direct and indirect influence through the involvement of other variables (Fan et al., 2016). In accordance with the purpose of the study, path analysis was used in the current study.

In general, there are three types of path analysis: path analysis with latent variables, path analysis with observed variables, and hybrid path analysis (Çokluk et al., 2021). In this study, path analysis with observed variables was used to investigate the direct and indirect relationships among the study variables (e.g., Alkış & Taşkaya Temizel, 2015; Gaumé & Wunsch, 2010). These variables included the metacognitive skills of preschool children, their family resilience, and their preschool teacher's resilience regarding educational status, income, and gender.

In order to collect data on preschool children's metacognitive skills, the adapted version of Children's Independent Learning Development (CHILD 3-5) Checklist and Train Track Task were utilized. Later, the Turkish version of the Family Resilience Assessment Scale was applied to families of the children involved in the observation procedure. Moreover, the Psychological Resilience Scale for Adults was applied to preschool teachers whose students participated in the observation. Details about the scales and observational instruments are provided in the instrumentation section.

3.2. Data Collection Instruments

The data were collected through six different instruments. Firstly, the researcher prepared two different demographic information forms for preschool teachers and their

families. Secondly, preschool children were recorded and scored during a train track task. Thirdly, their teachers filled out the translated version of the Children's Independent Learning Development Checklist (CHILD 3-5) (Saraç et al., 2019) for the children who participated in the train track task. Fourthly, the Turkish version of the Family Resilience Assessment Scale (Cihan-Güngör, 2014) was applied to families. Lastly, the adapted version of the Psychological Resilience Scale for Adults (Basım & Çetin, 2011) was applied to the teachers. In the following sections, the data collection tools are described in detail (see Table 3.1).

Table 3.1 *Instruments and Variables*

Instruments	*Variables*
Demographic Information Form for Families	Gender Their children's gender Age Educational status Family income
Demographic Information Form for Preschool Teachers	Gender Age Educational status Years of experience in ECE Duration of their work with these particular preschool children Previous participation in education program/ course/ seminar about the metacognitive skills Monthly income
Family Resilience Assessment Scale	Family Resilience Score
Psychological Resilience Scale for Adults	Preschool Teacher Resilience Score
Train Track Task	Positive examples of metacognitive skills (monitoring and control) Failures of metacognitive skills (perseveration and distraction)

Table 3.1 (continued)

Children's Independent Learning Development (CHILD 3-5) Checklist	Children's self-regulated learning

3.2.1. Demographic Information Form for Families

To obtain the socio-demographic information of the participant parent, a demographic information form was developed by the researcher. This demographic information form (see Appendix A) includes questions about the parents' gender, children's gender, age, educational status, and monthly income.

3.2.2. Demographic Information Form for Preschool Teachers

To get the socio-demographic information of participant preschool teachers, the researcher developed a demographic information form. This demographic information form (see Appendix B) includes questions about the teachers' gender, age, educational status, years of experience in early childhood education, duration of their work with these particular preschool children, previous participation in education programs/courses/seminar about the metacognitive skills, and monthly income (salary).

3.2.3. Family Resilience Assessment Scale

The concept of family resilience has been studied in different problems and adversities, such as families living with chronic illness or disabilities (Rolland, 2005; Rolland & Walsh, 2005), divorced families (Hetherington & Stanley-Hagan, 1999; Kelly, 2007), or a family encountering with trauma (Agani et al., 2010; Landau et al., 2008). In parallel with these studies, many preventive and developmental family resilience programs have been developed. The family resilience programs include psychoeducation, workshops, conferences, and intense family therapy (Kaya & Arici, 2012).

However, all these mentioned family resilience studies have used qualitative methods (Sixbey, 2005). Therefore, Sixbey (2005) has developed the Family Resilience Scale (FRAS) to examine family resilience with quantitative methods based on Walsh's family resilience model. Walsh (1998) conceptualized family resilience as strength-

oriented family paradigms and proposed three over-arching constructs (family belief systems, organization patterns, and communication processes) with nine sub-constructs. Based on this, Sixbey's (2005) shortened Family Resilience Scale (FRAS) has 54 items, including four reverse items, formed by 4 Likert types. FRAS, which consists of six factors, has an α= .96 total reliability and has good concurrent criterion validity with three well-known scales.

The shortened FRAS was adapted to Turkish (see Appendix C) by Cihan-Güngör (2014) to Turkish after a study with 655 participants. The total reliability of the Turkish version was found as α= .95. Also, confirmatory factor analysis of the scale confirmed the fit of the original's six dimensions (see Table 3.2): "Family Communication and Problem Solving," 'Utilizing Social and Economic Resources'', 'Maintaining a Positive Outlook,' 'Family Connectedness,' 'Family Spirituality' and 'Ability to Make Meaning of Adversity '(χ2=3872.38, df=1362, χ2/df=2,84; RMSEA= .05, NFI= .97, CFI= .98, NNFI= .98 and SRMR=.06).

Table 3.2 *Sub-dimensions and Items of FRAS*

Sub-dimensions	*Items*
Family Communication and Problem Solving	1, 6, 7, 8, 9, 10, 14, 15, 16, 17, 18, 20, 23, 24, 25, 26, 27, 28, 29, 30, 40, 41, 46, 48, 52, 53, 54
Utilizing Social and Economic Resources	11, 19, 31, 32, 38, 39, 43, 49
Maintaining a Positive Outlook	13, 21, 22, 34, 36, 51
Family Connectedness	2, 33 (reverse), 37 (reverse), 45 (reverse), 47, 50 (reverse)
Family Spirituality	12, 35, 42, 44
Ability to Make Meaning of Adversity	3, 4, 5

The Turkish version of the Family Resilience Scale consists of 54 items, including four reverse items, formed by 4 Likert types (1: Totally disagree, 2: Disagree, 3: Agree, 4: Totally agree). The total score of the shortened FRAS can range from 54 to 216. The internal consistency coefficient of the total of the Family Resilience Assessment Scale is .96. The internal consistency coefficient of the sub-dimensions' ranges from .70 to .96. "Family Communication and Problem Solving" α .96, "Utilizing Social and Economic Resources" α .85, "Maintaining a Positive Outlook" α .86, "Family Connectedness" α .70, "Family Spirituality" α .88 and "Ability to Make Meaning of Adversity" was found to be α .74. The findings of the Turkish version of shortened FRAS showed that it could be termed as a valid and reliable instrument (Cihan-Güngör, 2014). The reliability of the scale was determined by ensuring the Cronbach Alpha Coefficient (see Table 3.3).

The selection of FRAS for data collection is primarily based on its favorable statistical outcomes. Although there is another Family Resilience Scale developed by Kaner and Bayraklı (2010) in the literature, the decision to utilize the current instrument was influenced by its superior reliability scores for both the original and adapted versions of FRAS. The present study focused mainly on the total score of the scale, and sub-dimensions were not calculated separately. Based on the total score results, the reliability study was carried out and the Cronbach Alpha value was found as .94. The findings showed that the scale is reliable, and the results are presented in Table 3.3.

Table 3.3 *Cronbach Alpha Values for Family Resilience Assessment Scale*

Scale	Number of Items	Cronbach Alpha (Cihan-Güngör, 2014)	Cronbach Alpha of the Current Study
FRAS	54 items	.96	.94

3.2.4. Psychological Resilience Scale for Adults (RSA)

Several researchers have generated theories and developed frameworks for measuring the complex structure of resilience. A methodological review of instruments of adult resilience has revealed that the Resilience Scale for Adults is one of the three instruments with adequate psychometric properties, along with the Connor-Davidson Resilience Scale and the Brief Resilience Scale (Morote et al., 2017). The RSA is also

the most stable scale (test-retest), with high sensitivity to clinical change (Windle et al., 2011). Among these instruments, only the RSA evaluates family and social protective factors of resilience (Friborg et al., 2009). The family and social factors are interpersonal resources built upon relationships that are perceived as meaningful supports for facing adversities and stress. The RSA presents a model that goes beyond the individual self-appraisal and inner characteristics to acknowledge the relevance of perceived resources in the environment.

The Resilience Scale for Adults was developed by Friborg et al. (2003) and adapted into Turkish by Basım and Çetin (2011) (see Appendix D), whose reliability and validity were examined in their research titled "Reliability and Validity Study of the Resilience Scale for Adults." The original version of the Resilience Scale for Adults includes the dimensions of 'personal strength,' 'structural style,' 'social competence,' 'family cohesion,' and 'social resources' (Friborg et al., 2003). A later study (Friborg et al., 2005) shows that the resilience model better explains the six-dimensional structure of the scale. In Friborg et al.'s (2005) study, the 'personal power' dimension was divided into 'self-perception' and 'perception of the future,' and six dimensions emerged. On the scale, 'structural style' and 'perception of the future' have four items: 'family adjustment,' 'self-perception' and 'social competence' six items, and 'social resources' seven items (Basım & Çetin, 2011) (see Table 3.4).

Table 3.4 *Sub-dimensions and Items of RSA*

Sub-dimensions	*Items*
Perception of Self	1 (reverse), 7, 13 (reverse), 19, 28, 31 (reverse)
Perception of Future	2, 8 (reverse), 14 (reverse), 20
Structured Style	3 (reverse), 9, 15 (reverse), 21
Social Competence	4 (reverse), 10, 16 (reverse), 22, 25 (reverse), 29
Family Cohesion	5, 11 (reverse), 17, 23 (reverse), 26, 32
Social Resources	6, 12 (reverse), 18, 24 (reverse), 27 (reverse), 30, 33 (reverse)

In the scale, a format is used in which positive and negative features are on different sides, and five separate boxes are used for the answers to avoid biased evaluations in choosing the items. The scoring method was released in the schematic evaluation's high or low measurement of psychological resilience.

The scale was benefited by the researchers in the studies involving teachers (e.g., Crompton et al., 2023; Kinay et al., 2021; Yokus, 2015), and adapted to Turkish by Basım and Çetin (2011). In the Turkish version, confirmatory factor analysis was performed for the scale's validity study, and a total of 57% variance explained the six-factor structure. Internal consistency values of the structural equation model for the reliability of the scale were calculated and found to be .80 for 'Self-Perception,' .75 for 'Future Perception,' .82 for 'Social Competence,' .86 for 'Family Cohesion,' .84 for 'Social Resources' and .76 for 'Structural Style' (Basım & Çetin, 2011). The Cronbach Alpha Internal Consistency coefficient was determined to be .87 for the whole scale. Basım and Çetin (2011) found that the internal consistency coefficients of the sub-dimensions of the scale ranged between .66 and .81, and the test-retest reliability ranged between .68 and .81. The maximum score that the participants can obtain from the scale is 165, while the minimum score is 33. Accordingly, it was accepted that participants with high scores had high resilience, and those with low scores less so (Basım & Çetin, 2011).

Included in the relevant literature is a Teachers' Resilience Scale that was developed by Daniilidou and Platsidou (2018) to be implemented with teachers. However, this scale has not been adapted to Turkish. While it would have been beneficial to utilize this scale, considering the time constraints and the scope of the study, the decision was made to use the adapted version of a different resilience scale. This choice was primarily driven by the absence of any resilience scale specifically adapted to Turkish teachers in the existing literature. Additionally, the fact that the RSA had been previously applied with teachers (see Kinay et al., 2021; Yokus, 2015) further supported the decision to use it for the research.

The present study focused mainly on the total score of the scale, and sub-dimensions were not calculated separately. Based on the total score results, the scale's reliability was determined by ensuring the Cronbach Alpha Coefficient. The Cronbach Alpha

value was found as .81, and the findings showed that the scale is reliable, and the results are presented in Table 3.5.

Table 3.5 *Cronbach Alpha Values for Psychological Resilience Scale for Adults*

Scale	Number of Items	Cronbach Alpha (Basım & Çetin, 2011)	Cronbach Alpha of the Current Study
RSA	33 items	.87	.81

3.2.5. Train Track Task

In the literature, different instruments are available for evaluating the metacognitive development of preschool children. Two notable examples include the Metacognitive Knowledge Interview (McKI) developed by Marulis et al. (2016) for 3-5-year-olds, and the mixed-methods approach with a puzzle task used by Escolano-Pérez et al. (2019) to assess metacognitive development in preschoolers. While these instruments would have been advantageous to use, they have not been adapted into Turkish. Due to the time constraints and the scope of the study, the decision was made to use an adapted version of a different metacognitive development instrument. The Train Track Task (Bryce & Whitebread, 2012) was chosen as it has already been adapted to Turkish and offers the advantage of not only focusing on children's verbalization but also coding their non-verbal behaviors, which provides a developmentally sensitive approach.

The Train Track Task, which involves building a model train track to match a predefined shape from a plan, was adapted by Bryce and Whitebread (2012) from Karmiloff-Smith's (1979) closed-circuit railway task. In this task, preschool children's verbal and non-verbal metacognitive skills during a problem-solving task were coded by a controlled observation. In this task, children are asked to build a track according to a predefined shape. Before beginning the task, the task instructions were given as follows: The children were instructed to use the train track pieces to not only play a game but also create some shapes, with the first shape being the one presented in the plan. They were also informed that they could use as many pieces as they need, but they may not need all of them. Also, the shape they make can be large, so they can use

as much space as they want. The children were asked to inform the researcher when they were done, and there was no time limit. If they forgot to say they were finished, they were reminded to say when they were. During the process, children attempted two shapes (one deemed ‘easy’ and one ‘hard’ for each age group); 5-year-old children attempted an oval and a ‘goggle’ shape, and 7-year-old children attempted a ‘goggle’ and a ‘P’ shape (presented below).

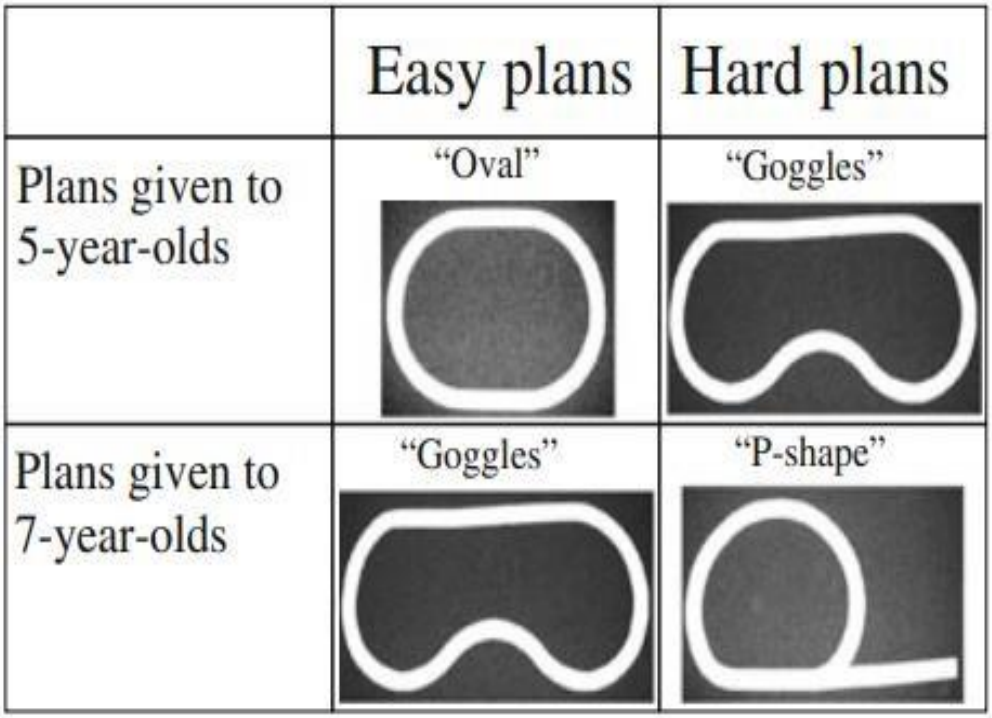


Figure 3.1 Train Track Plans (Bryce & Whitebread, 2012)

For the current study, the oval and the goggle shapes were presented to children by considering the age group. The task was introduced to children by asking them to try and make some shapes if they wanted. Firstly, the plan was presented, and children were asked to examine and make those shapes with the sorted train track pieces for each task (presented below). After the children’s approval for understanding the task was obtained, they were informed to use as many pieces as they wanted. Finally, the children were told to let the researcher know when they completed the task.

During the task, there was no experimenter interference; if the child sought help, encouragement was provided, and there was no time limit. If the children did not state "I have finished" even though they appeared to have finished the task, they were reminded, “Don’t forget to inform me when you are finished.” The sessions were recorded with a video camera.

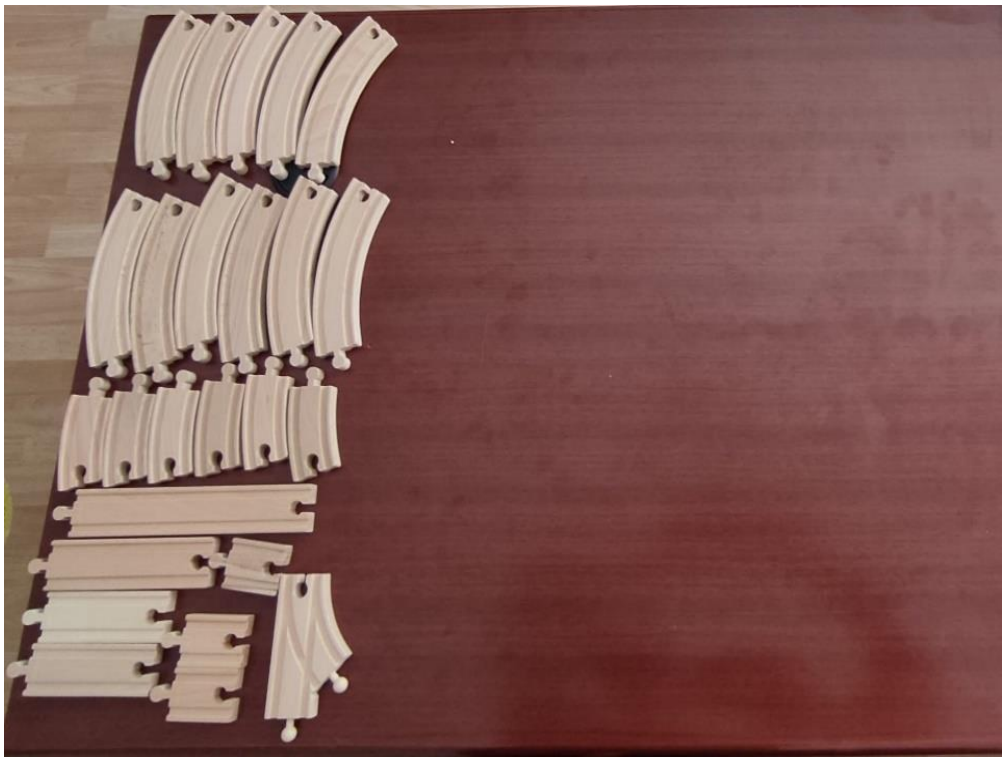


Figure 3.2 Train Track Pieces

After the data was collected, the behaviors children exhibited during the task were analyzed through two coding schemes developed by Bryce and Whitebread (2012). One of the schemes aims to assess positive examples of metacognitive skills, consisting of two sub-dimensions: monitoring and control. Monitoring behaviors are actions that help to update one's mental representation of the task (e.g., checking own, checking plan, reviewing), while control behaviors involve taking specific actions at the task level (e.g., planning, seeking, change strategy).

The other one identifies failures of metacognitive skills with two sub-dimensions: perseveration and distraction. Perseveration behavior refers to the inability to suppress the initial rule or behavior, despite the absence of a memory or monitoring problem, leading to inflexibility in adapting and modifying one's behavior (e.g., no strategy, not following the plan, goal neglect). Distraction behaviors, on the other hand, include failure to adhere to task rules or maintain focus on the task (e.g., off-task, distracted). After the analyses, the agreement between raters was calculated with Kappa coefficients of reliability by the researchers. The inter-rater coding agreement (κ) was .90. Further, the intra-rater reliability was calculated by the primary researcher coding 10% of the videos twice with a minimum gap of two weeks between coding occasions, which also has a (κ) value equal to .98.

The validity and reliability study of the Train Track Task with Turkish children was carried out by Pekince and Avcı (2021). For the study, the video recordings of 57 children aged between 4-5 years, taken during the letter O (oval), B (goggle), and P-shaped tasks, were examined. The inter-rater reliability was performed with the Fleiss Kappa statistic, which was high in all sub-dimensions. Different from the original study, the letter P, which was presented to children aged 7 in the original task, was also given to the 4-5-year-old children in the validity and reliability study. Similarly, unlike the original, the train track plan was shown to the children before starting and then removed. The purpose of the researchers who made the validity and reliability of the plan was to enable the children to use their memory during the task.

During the task, the metacognitive behaviors of the children during the task were coded, and the time was measured. Before statistical analyses, each subdimension's observed behavior frequency was divided by the total time (per minute), and average rates were obtained. Statistical analyses were also carried out over the frequency of metacognitive behaviors displayed by children per minute. When data collection was finished, ten videos were analyzed by the first researcher and a field expert. The coding agreement was calculated through Kappa coefficients of reliability, and results showed that Fleiss's Kappa fit is significant.

For the present study, the same procedure and the guideline in the original study was followed. This task was applied to children individually and took approximately 20-30 minutes for each child. The plans were presented to the children throughout the task. Also, preschool children attempted to make two shapes designed for 4-5-year-old children: the oval and the goggle. However, the only deviation was that the train track pieces were presented to children in a sorted way (see Figure 3.2).

While implementing the tasks, the researcher recorded the child constructing the shape using the train tracks with a video camera. The researcher then watched these recordings one by one, and each metacognitive behavior exhibited by the children was recorded in the '*Metacognitive Skills Coding Scheme*' and the '*Perseveration and Distraction Coding Scheme*' (see Appendix E). The total metacognitive skills for both the easy and the hard task were calculated by using the following equation:

$$\frac{Monitoring\ + Control - Perseveration - Distraction}{Minutes\ spent\ on\ the\ task}$$

By using this equation, the number of the behaviors shown by children during the task for monitoring and controlling were summed and the number of times they failed to use metacognitive strategies (perseverance and distraction) was subtracted from that number and divided by the minutes spent on task. In this way, the application of metacognitive skills per minute was calculated.

Also, another researcher watched the video recordings to code the frequency of the behaviors observed in the train track task. As a result of these analyses, a satisfactory inter-rater agreement was acquired (oval shape κ=.92, goggle shape κ=.89). In addition to inter-rater reliability, intra-rater reliability was measured by the researcher coding 10% of the videos twice with at least three weeks of gaps (see Bryce & Whitebread, 2012). After the analysis, a high intra-rater reliability was acquired for both the easy (oval) task (.92) and the hard (goggle) task (.87).

3.2.6. Children's Independent Learning Development (CHILD 3-5) Checklist

The Children's Independent Learning Development (CHILD 3-5) Checklist (Whitebread et al., 2009) is another valuable instrument used to assess cognitive development in young children. It provides a unique perspective from adults on children's independent learning processes. The decision to use this instrument was influenced by its good reliability scores and adaptation to Turkish with good statistical outcomes.

The Children's Independent Learning Development (CHILD 3-5) Checklist was developed by Whitebread and colleagues (2009) to identify and evaluate 3–5-year-old children's self-regulation and metacognition. This checklist was prepared as a teacher observation instrument and originally constituted 35 statements deriving from literature (Whitebread et al., 2009). The 16 teachers involved in Year 1 of the project each assessed six children in their class (two high, two intermediate, and two low metacognition/self-regulation/independence), resulting in data for 96 children recorded on three occasions, a total of 288 assessments for each of the statements. At the end of a two-year study, some statements were eliminated. Whitebread et al. (2009) reported that the 22 remaining statements had very high internal consistency (Cronbach Alpha= .97).

This checklist is a Likert-type scale assessing whether statements are “always,” “often,” “usually,” “rarely,” “never” true for a child. According to their teachers’ responses from the five options, children get points ranging from 1 to 5 for each item. Therefore, in the original scale, the total score is 110 for a child who gets “always” for all items.

The validity and reliability study for the Turkish version of CHILD 3-5 was conducted by Saraç and her colleagues (2019). They conducted the study in two phases. For the first phase, they collected data from 262 preschool children. The original 22 items were analyzed for the assumptions of explanatory factor analysis, and three items were removed from the original scale for violating the normal distribution. Also, another three items were removed due to low inter-item correlations. Therefore, the validity and reliability study were conducted with 16 items.

For the second phase, they gathered data from 197 preschool children (Saraç et al., 2019). 16 items were analyzed for the assumptions of explanatory factor analysis. Test-retest correlation between the two administrations was calculated, which was .962 ($N = 53$, $p < .01$), and Cronbach’s Alpha were .968 for the second sample. Thus, results showed that the 16-item Turkish form of the CHILD 3-5 Checklist is a reliable and valid tool for assessing young children’s learning (Saraç et al., 2019) (see Appendix F). The total score that a child can get is 80 in the Turkish version of the CHILD 3-5.

For the current study, the CHILD 3-5 Checklists were filled out by 40 preschool teachers. After the data was collected, the scale's reliability was determined by ensuring the Cronbach Alpha Coefficient as .96 (see Table 3.6). The results revealed that this data collection instrument is reliable for the present study.

Table 3.6 *Cronbach Alpha Values for CHILD 3-5 Checklist*

Scale	Number of Items	Cronbach Alpha (Saraç et al., 2019)	Cronbach Alpha of the Current Study
CHILD 3-5	16 items	.968	.961

3.3. Pilot Study

In a pilot study, the sample size depends on the purpose of the study, like measuring the suitability of a scale, developing a new scale, or adapting an existing scale to another group (Johanson & Brooks, 2010). For this study, the pilot studies aimed to determine the feasibility of the instruments used in the main study. Researchers recommend obtaining data from approximately ten participants (Nieswiadomy, 2002), or 10% of the final study size (Lackey & Wingate, 1998), which is enough to pilot the study. However, the final decision is to be guided by cost and time constraints as well as by the size and variability of the population (Hertzog, 2008).

For this reason, before the main study, the Train Track Task was piloted with 40 children whose teachers also filled out the Children's Independent Learning Development (CHILD 3-5) Checklist to pilot the scale. In addition, the Psychological Resilience Scale for Adults was piloted with five teachers, while the Family Resilience Assessment Scale was used with 40 families.

In the pilot study, the Cronbach alpha coefficient value for the overall Psychological Resilience Scale for Adults was .846. In addition, for the Family Resilience Assessment Scale, the Cronbach Alpha coefficient was calculated as .92. Moreover, the Cronbach alpha value for the Children's Independent Learning Development (CHILD 3-5) Checklist was found to be .95. For the Train Track Task, video records of ten preschool children, randomly selected among 40 children, were monitored and coded by two researchers. After the coding process was completed separately, they came together and held a consensus meeting, discussed the coding, and reached a decision.

The Spearman-Brown correlation coefficient was used to calculate the agreement between these two coders since the data obtained were ordered and the number of data was small (n=10). The subdimensions and total metacognitive skills were calculated between coders. For the easy (oval) shape, coefficients of agreement between the two researchers were calculated as 'Monitoring' at .98, 'Control' at .96, 'Perseveration' at .90, and 'Distraction' at .89. For the hard (goggle) shape, coefficients of agreement between the two researchers were calculated as 'Monitoring' .95, 'Control' .97, 'Perseveration' .96, and 'Distraction' .91. The total metacognitive skills for both the easy and the hard task were calculated by using the following equation:

$$\frac{Monitoring\ + Control - Perseveration - Distraction}{Minutes\ spent\ on\ the\ task}$$

With this equation, the number of the behaviors children showed during the task for monitoring and controlling were summed, and the number of failures of metacognitive skills (perseveration and distraction) was subtracted from them. The total number of metacognitive skills was divided by the minute they spent on the tasks to find the metacognitive skills per minute. The agreement coefficient was found as .94 for the easy task and .93 for the hard task.

3.4. Population and Samples

As Fraenkel et al. (2012) stated, the actual population (named the target population) that a researcher wants to generalize is seldomly available. In this current study, the target population that the researcher would like to generalize the findings consisted of all preschool children attending public and private preschools and preschools operated by the Ministry of National Education (MoNE) in Ankara, their preschool teachers, and their families.

Fraenkel et al. (2012) stated that convenience sampling and its procedure involve choosing the study's nearest and easily accessible participants. Based on this view, the convenience sampling method was used in this study. In addition, Fraenkel et al. (2012) also expressed that most researchers consider the minimum acceptable sample size for a correlational study to be at least 30. While the data obtained from a sample smaller than 30 may give an inaccurate estimate of the degree of relationship, samples larger than 30 are much more likely to provide meaningful results (Fraenkel et al., 2012). For path analysis, a type of analysis technique based on SEM, a large sample size is needed to obtain more accurate estimates of the relationships between the variables under investigation, according to Ullman (2013) and Kline (2016). In this study, 46 teachers were willing to participate in the research; however, one of them was omitted since none of the children's families in the class were permitted to participate in the study. Therefore, the Psychological Resilience Scale for Adults was given to 45 preschool teachers in Ankara whose students participated in the preschool assessment of metacognitive skills procedure and have been working with the same preschool children for at least six months. The teachers also filled out Children’s

Independent Learning Development Checklists for the preschool children who participated in the study.

In terms of the families, a total of 208 families were willing to fill the Family Resilience Assessment Scale within the scope of this study; however, seven of them were omitted because of the unmarked items in the scale, and three of them were omitted since their children did not want to complete the Train Track Task. Therefore, 208 families and their children participated in the study. Prior to the main study, a pilot study was conducted with five preschool teachers, 40 families, and 40 preschool children. Therefore, the main research participants were 40 preschool teachers, 208 preschool children, and their families. Detailed information about the instruments is provided in section 3.5.

3.4.1. Demographic Information of Preschool Children

A total of 208 preschool children participated in this study. 106 (51%) of them were boys, while 102 (49%) of them were girls (see Table 3.7). The ages of the participant children ranged from 57 to 80 months old (M= 70.06).

Table 3.7 *Demographic characteristics of the sample of the main study*

Gender	**f**	**%**
Girl	102	49
Boy	106	51
Total	208	100
Age (months)	**f**	**%**
57-64	28	13.5
65-72	116	55.7
73-80	64	30.8
Total	208	100
Parent Educational Status	**f**	**%**
Primary school	11	5.3
Secondary school	13	6.3
High school	64	30.8
Associate degree	47	22.6
Bachelor's degree	60	28.8
Master's degree	13	6.3
Total	208	100

Table 3.7 (continued)

Family Income	**f**	**%**
0-5000 (Low)	64	30.8
5001-10000 (Middle)	75	36.1
10001-15000 (Middle-High)	41	19.7
15001+ (High)	28	13.5
Total	208	100

3.4.2. Demographic Information of Families

A total of 208 families participated in this study. 113 (54.3%) of the parents who completed the demographic information form were female, while 95 (45.7%) of them were male (see Table 3.8). The ages of the parents ranged between 27 and 48. To group the ages of the parents, a reasonable interval was needed. To create equal interval widths, the highest interval should contain the highest value (Gravetter et al., 2020). For that purpose, the interval width is determined as eight. 92 of the participant parents were aged between 27 to 34 (44.2%), 100 of them were aged between 35 and 42 (48.1%), and 16 of them were aged between 43-50 (7.7%).

In terms of their educational status, 11 (5.3%) of them were primary school graduates, 13 (6.3%) of them were secondary school graduates, 64 (30.8%) of them were high school graduates, 47 (22.6%) of them had associate degree, 60 (28.8%) of them had a bachelor's degree, and 13 (6.3%) of them had a master's degree. 64 (30.8%) of the participating parents had a monthly income ranging between 0-5000 Turkish Liras (TL), 75 (36.1%) of them 5001-10000 TL, 41 (19.7%) an income of between 10001 and 15000 TL, while 28 (13.5%) of them had an income more than 15001 TL.

In the first four months of data collection, the net minimum wage was 4253 TL, while it was 5500 TL in the last two months (TURKSTAT, 2022). Because of these changes, the total income of families was grouped within the sample by taking into account the highest and lowest income levels. After this arrangement, this study uses the 0-5000 TL wage range to express low-income families, 5001-10000 TL for middle-income families, TL10001-15000 for middle-high-income families, and 15001+ TL for high-income families.

Table 3.8 *Demographic characteristics of the sample of the main study*

Gender	**f**	**%**
Female	113	54.3
Male	95	45.7
Total	208	100.0
Age	**f**	**%**
27-34	92	44.2
35-42	100	48.1
43-50	16	7.7
Total	208	100.0
Educational Status	**f**	**%**
Primary school	11	5.3
Secondary school	13	6.3
High school	64	30.8
Associate degree	47	22.6
Bachelor's degree	60	28.8
Master's degree	13	6.3
Total	208	100
Income	**f**	**%**
0-5000 (Low)	64	30.8
5001-10000 (Middle)	75	36.1
10001-15000 (Middle-High)	41	19.7
15001+ (High)	28	13.5
Total	208	100

3.4.3. Demographic Information of Preschool Teachers

A total of 40 preschool teachers participated in the current study. All the participant teachers were female and working in public and private preschools operated by MoNE. The ages of teachers ranged between 35 to 58 (M= 43.7). To group the data, it is beneficial to create class intervals (Gravetter et al., 2020). For this study, three equal interval groups have been decided. 24 (60%) of the participant teachers were between 35 to 42, 8 (20%) of the teachers were aged between 43-50, and 8 (20%) of them were between 51-58 (see Table 3.9). 16 of the participant teachers had completed an associate degree (40%), while 22 of them had a bachelor's degree (55%) and 2 of them had a master's degree (5%). The years of experience of the participant teachers ranged between 10 to 36 years. 27 (67.5%) of them had 10 to 18 years of experience, 8 (20%) of them had 19 to 27 years of experience, and 5 (12.5%) of them had 28 to 36 years of experience.

Since the CHILD 3-5 Checklist requires the teachers to know the children for more than six months, the monthly basis of the participant teachers' working duration with that specific group was considered. The period of working with the same children ranged between eight to twelve months. 23 (57.5%) of them were working with the same children for eight months, 11 (27.5%) had worked with the same children for nine months, three (7.5%) had been working with the same group for ten months, two (5%) of them with the same children for 11 months, and one (2.5%) for 12 months. In terms of monthly income, 14 (35%) of the families reported taking home 5001-8000 TL, and 26 (65%) of them 8001-10000 TL.

In the first four months of data collection, the net minimum wage was 4253 TL, while it was 5500 TL in the last two months (TURKSTAT, 2022). Because of these changes, the income of teachers was grouped within the sample by taking into account the highest and lowest income levels. After this arrangement, this study uses the 5001-8000 TL wage range to express middle-income teachers while using 8001-10000 TL for high-income teachers. Among these preschool teachers, 31 (77.5%) were working in public schools, while nine (22.5%) were working in private schools. Regarding teachers' participation in a course/seminar about the metacognition of young children, only one (2.5%) of them stated that she took a course related to it during her undergraduate education.

Table 3.9 *Demographic characteristics of the sample of the main study*

Age	**f**	**%**
35-42 years old	24	60
43-50 years old	8	20
51-58 years old	8	20
Educational Status	**f**	**%**
Associate degree	16	40
Bachelor’s degree	22	55
Master’s degree	2	5
Years of Experience	**f**	**%**
10-18 years	27	67.5
19-27 years	8	20
28-36 years	5	12.5

Table 3.9 (continued)

Duration of Working with the Same Group	**f**	**%**
8	23	57.5
9	11	27.5
10	3	7.5
11	2	5
12	1	2.5
Total Income	**f**	**%**
5001-8000 (Middle)	14	35
8001-10000 (High)	26	65
School Type	**f**	**%**
Public	31	77.5
Private	9	22.5
Course Taken Related to Metacognition	**f**	**%**
No	39	97.5
Yes	1	2.5

3.5. Data Collection Procedure

Before the data collection was started, some formal procedures were followed to implement the instruments. Firstly, ethical permission was taken from the Applied Ethics Research Center at METU (see Appendix G). Then, the permission of the Ministry of National Education was obtained to collect data (see Appendix H). Once the permissions were gathered, the researcher visited the preschools, introduced herself, and gave information about the study to the school administrations. Later, the preschool teachers were informed about the purpose of the study, and their help was requested in sending questionnaires and consent forms to parents. The data was collected through the second semester and summer term of the 2021-2022 academic year.

The researcher informed the parents about the study and the procedure by sending the consent forms (see Appendix A). Parents were requested to sign the consent form if they permitted their children's participation in the current study. Furthermore, the researcher asked families, who signed the consent form, to voluntarily participate in this study to fill out the Family Resilience Assessment Scale (FRAS) (see Appendix

C) by stating their gender. After that, they were requested to send their signed consent forms and completed FRAS back to school via their children.

In addition, the researcher asked the preschool teachers to participate voluntarily in this present study. Preschool teachers were informed about the CHILD 3-5 Checklist (see Appendix F), and the participation of teachers who have been working with the same preschool children over the previous six months was ensured. The teachers who signed the consent form (see Appendix B) participated in the study. Moreover, their participation was requested for the Psychological Resilience Scale for Adults (see Appendix D).

Before handing them to preschool teachers, they were informed about the aim of the current research, and they were told that there is no right or wrong response in the scale and that their responses are essential. Lastly, they were informed that they could give up responding to the test at any time if they did not want to continue and that their names would be kept anonymous, as well as for providing for the confidentiality of the research data. After the preschool teachers were informed about the study, the questionnaires were given to them.

One week later, the researcher visited the schools and asked each school administration to address an available room to implement the Train Track Task. After the signed consent forms were received, the researcher introduced herself in each classroom and met with all children in the class. After that, the researcher explained the procedure to children with the support of their classroom teachers. Then, the children whose parents gave permission were guided one-by-one to the available room prepared by the school administration.

In the room, children were first informed about the task and that they can stop if they do not want to play, and they can go to the class anytime they want to. Later, five minute was given to each child to examine the environment and the materials and play with them to get familiar with the task. After that, children's verbal consent for participating in the study and video recordings were taken before starting the sessions. Then, the instructions were given to children, and they were told to start when they felt ready. Once they started to construct the track, the researcher began observing and recording each task, which lasted a maximum of 30 minutes.

During the session, the plans were not removed and shown to the children one after the other, and they were expected to produce the exact shape using the train track pieces. The child was not interrupted or intervened throughout the session. When the procedure was finalized, the researcher was available to answer the children's questions and then return them to their classrooms.

The data was collected from 17 preschools operated by the Ministry of National Education (MoNE) in Ankara, including six private and 11 public preschools. One hundred and ninety-six preschool children were enrolled in public preschool, while 52 of the sample attended private preschools. After the data collection ended, each video recording was watched and analyzed using the metacognitive skill coding scheme developed by Bryce and Whitebread (2012) and adapted to Turkish by Pekince and Avcı (2021).

3.6. Data Analysis

The present study employed a three-step data analysis procedure (see Figure 3.3) to investigate the relationships among study variables.

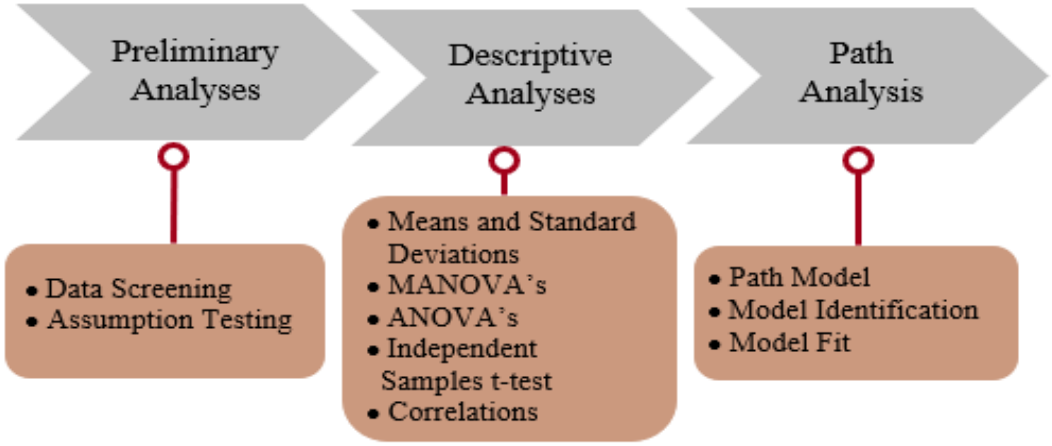


Figure 3.3 Data Analysis Process

The first step involved screening the data for outliers and missing values, and verifying the assumptions for analysis. In the second step, descriptive analysis was conducted to answer the first five research questions. Finally, path analyses were employed in the last stage of data analysis to test both direct and indirect relationships among the

variables of interest within the scope of the last research question. This comprehensive approach ensured that the study's findings are both reliable and valid.

3.6.1. Preliminary Analysis

Prior to analyzing the research questions, the data was subjected to preparatory analysis to ensure it was organized and ready for subsequent analysis. Data entry errors, missing values, and outliers were identified and addressed during the initial screening process. Assumptions necessary for data analysis were then tested using IBM SPSS 28.0. First, the sample size was evaluated to confirm it was sufficient for the study. Second, normal distribution was assessed, followed by checks for linearity and homoscedasticity. Finally, to control associations among exogenous variables, multicollinearity and singularity were examined.

3.6.2. Descriptive Analysis

The study commenced with conducting descriptive analyses to address the first five research questions. These analyses aimed to provide a comprehensive understanding of the preschool children's metacognitive skills and the resilience of their families and preschool teachers. Specifically, the descriptive analyses characterized the scores obtained for each variable and examined the general patterns. Additionally, means, standard deviations, minimum, and maximum values were reported for the entire sample. Furthermore, separate analyses were performed for each research question to ensure comprehensive and in-depth findings.

Firstly, each train track task video was watched three times to code and not to miss any single behavior of the children relevant to the coding scheme. Also, to ensure reliability, the researcher contacted one of the developers of the train track task to ask about the behaviors that were not agreed on how to code. Also, three weeks after they were taken, all the videos were analyzed to ensure intra-rater reliability. To generate a total quantitative data, the number of negative metacognitive behaviors for each dimension in the coding scheme (perseveration and distraction) were summed and deducted from positive metacognitive behaviors (monitoring and control) and divided by the minutes spent on the task (Bryce & Whitebread, 2012). For the data analyses, rates of metacognitive skills from each train track plan (easy and hard) were entered into analyses separately (see Bryce et al., 2015). Rates of metacognitive skills from

each train track plan (easy and hard) and the data coming from the scales were analyzed separately using the SPSS 28 program.

Additionally, a one-way between-groups multivariate analysis of variance (MANOVA) was conducted to investigate the mean differences among groups on dependent variables to determine whether there was a significant difference in preschool children's overall metacognitive skills scores with respect to their gender, educational status of the parents, and family income.

Moreover, an independent sample t-test was conducted to examine the mean differences among groups on the dependent variable to examine whether there was a significant difference in the family resilience scores with respect to the gender of the parent. Non-parametric alternative (Kruskal-Wallis Test) of one-way between-groups analysis of variance (ANOVA) was performed to investigate whether there is a significant difference in families resilience scores with respect to their educational status. Similarly, the non-parametric alternative (Kruskal-Wallis Test) of one-way between-groups analysis of variance (ANOVA) was performed to investigate whether there is a significant difference in families resilience scores with respect to their income.

In addition, non-parametric alternative (Kruskal-Wallis Test) of one-way between-groups analysis of variance (ANOVA) was performed to investigate whether there was a significant difference in preschool teachers' resilience scores with respect to their educational status. Also, an independent sample t-test was conducted to examine the mean differences among groups on the dependent variable to determine whether there was a significant difference in teacher resilience scores with respect to their income.

Furthermore, two separate correlational analyses were conducted to explore the relationship between the metacognitive skills of preschool children and the resilience of their families and teachers.

Finally, path analysis was conducted to explore the relationships between the demographic variables of the study, and the metacognitive skills of preschool children with their families and teacher resilience. Then, a path model was generated with the study variables.

3.6.3. Correlations among the Study Variables

To determine the strength and direction of the linear relationship through correlation, the correlation coefficients between FRAS, RSA and preschool children's metacognitive skills variables of Metacognitive skills easy task, Metacognitive skills hard task, and CHILD 3-5 were measured (see Table 4.36 and Table 4.38). The coefficients lower than .30 were regarded as having small impact, between .30 and .50 were defined as moderate impact, and the large effect was considered as higher than .50. (Cohen, 1988, 1992).

3.6.4. Path Analysis

Path analysis, a form of Structural Equation Modeling (SEM), is a statistical method that enables users to investigate impact patterns within a system of variables (Hamilton, 2017; Tabachnick & Fidell, 2019). It is one of several varieties of the general linear model that looks at how a group of predictor factors affects many dependent variables. For the current study, to investigate both the direct and indirect relationships among the variables following the suggested model, path analysis with observed variables was used (Kline, 2016; Schumacker & Lomax, 2010) through IBM SPSS AMOS 26 (Arbuckle, 2019) since this software allows researchers to test multiple group models and has extensive bootstrapping capabilities (Ullman, 2013).

Path diagrams, essential to SEM because they enable the visualization of the model's hypothesized set of connections, were produced concurrently with the research questions (Tabachnick & Fidell, 2019). The diagrams can be immediately translated into the equations required for the analysis and help outline a researcher's concepts regarding the relationships between variables (Tabachnick & Fidell, 2019). Additionally, among these connections, choosing the suitable combination directly from the model with all independent variables eliminates the need to try every possible combination (Yener, 2007). Considering all this information, performing path analysis enabled the simultaneous examination of the direct and indirect relationships between the research variables in the path diagram (see Figure 3.4) (Kline, 2016; Tabachnick & Fidell, 2019).

This study employed path analysis based on observed variables due to the latent variable model's sample size. For the ratio of the number of the sample to the number of parameters estimated (*N:q ratio*), a minimum 5:1 (Bentler & Chou, 1987; Hair et

al., 2018) was recommended when latent variables have multiple indicators, but ratios of 10:1 (Schreiber et al., 2006), 15:1 or 20:1 are desired (Hair et al., 2018). The current study's calculation of this ratio was 10.36. This ratio falls inside the threshold for latent model analysis; hence observed analyses were used to carry out the path analyses to provide more accurate model results.

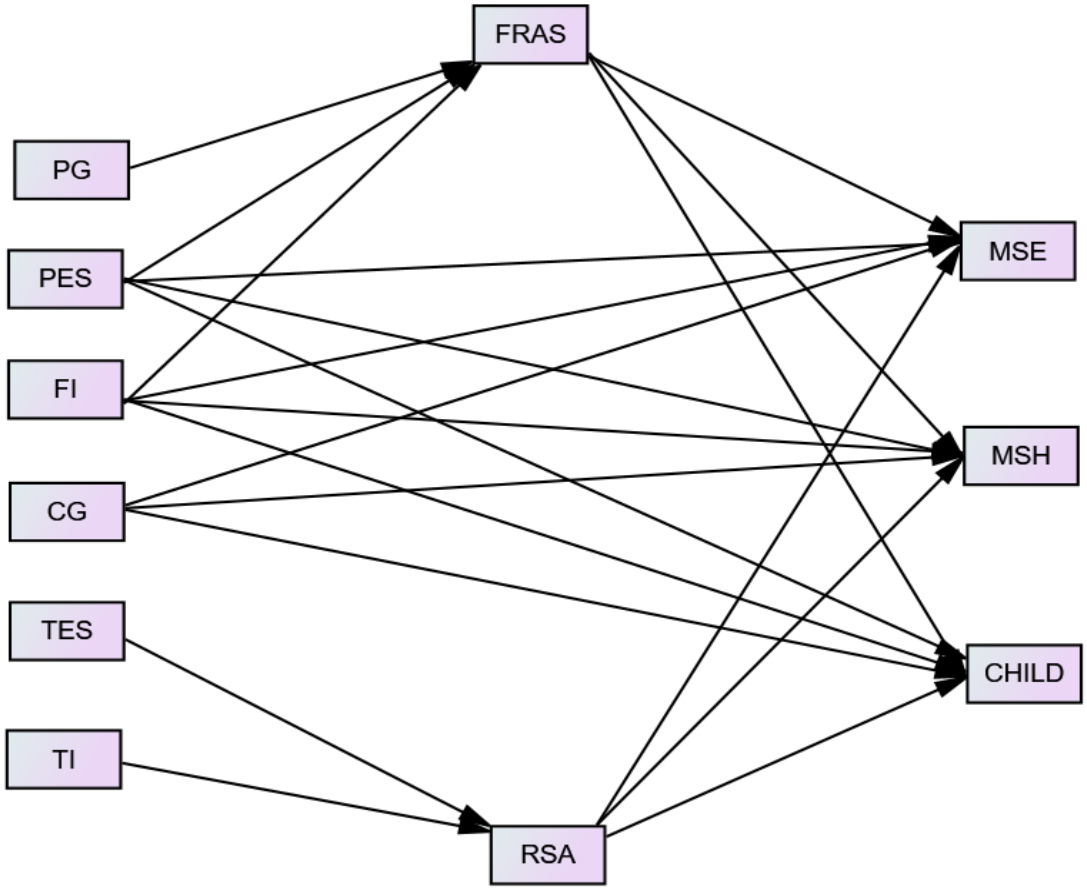


Figure 3.4 Initial Proposed Model

PG: parent gender, PES: parent educational status, FI: family income, CG: child gender; TES: teacher educational status, TI: teacher income, FRAS: family resilience, RSA: teacher resilience, MSE: metacognitive skills easy task, MSH: metacognitive skills hard task, CHILD: metacognitive skills

In order to perform path analysis, literature-recommended steps were followed (Kline, 2016; Schumacker & Lomax, 2010). In order to prevent potential errors in statistical analysis resulting from conducting multiple tests on the same sample, a 95% confidence interval using the percentile bootstrap method was used to analyze 500 bootstrap samples. This approach aimed to address possible distributional violations and Type I errors (MacKinnon et al., 2004; Preacher & Hayes, 2008).

Step 1: Establishing the Path Model

First, the path model was established through a literature review using the related research, theoretical and conceptual frameworks. For model determination, the observed structural model was chosen in which the endogenous variables were determined as the outputs of the model's other variables (Kline, 2016; Çokluk et al., 2021). Covariances were set across every single exogenous variable, including control variables. Subsequently, the error variances were included in all the remaining variables (mediator and endogenous) (Kline, 2016). Then, parameters were adjusted by specifying the path coefficients.

Step 2: Model Identification

In path analysis, model identification is crucial for ensuring the validity of the model and the accuracy of the estimates. As for the second step, the model identification was assessed. A common rule of thumb for model identification is that the number of free parameters (i.e., the parameters that can vary independently) in the model should be less than the number of observations (Kline, 2016). In other words, the number of free parameters (i.e., parameters estimated from data) should not exceed the number of data points minus the number of constraints imposed on the model This is known as the "N > q" rule, where N represents the sample size and q represents the number of free parameters in the model (Kline, 2016).

The most commonly used identification strategy in path analysis is the use of identification values, which are numerical indices that indicate the degree of freedom of the model (McDonald & Mulaik, 1979). The degrees of freedom refer to the difference between the number of observed variables and the number of estimated parameters in the model (Kline, 2016). A model is said to be identified if the degrees of freedom are equal to or greater than zero (Schumacker & Lomax, 2010). In the present research, the identification of the model was determined, and the data collected from the main study was subsequently used to make estimations pertaining to the proposed model. These estimations involved determining parameter values and identifying errors in the estimated values.

Step 3: Evaluating Model Fit

As the third step, model fit was assessed through several indices. The significance level of the chi-square in path analysis is a critical indicator of the goodness of fit of a model (Kline, 2016). The chi-square test assesses the difference between the observed and expected covariance matrices of a model (Hu & Bentler, 1999), with a p-value indicating the probability of observing a chi-square statistic as extreme as the one calculated if the model fits the data perfectly (Kelloway, 1998). A significant chi-square value ($p<.05$) indicates that the model does not fit the data well, and some adjustments may be necessary to improve the model's fit (Hooper et al., 2008). The chi-square is sensitive to sample size; therefore, researchers have been exploring different measures to evaluate model fit (Hooper et al., 2008). An alternative statistic that decreases the influence of sample size on the Model Chi-Square is Wheaton and colleagues' (1977) normed chi-square ($\chi 2/df$). The normed chi-square value can be a maximum of five (Wheaton et al., 1977) and alternative fit indices such as the Comparative Fit Index (CFI) should also be considered when evaluating model fit.

There are also alternative fit indices such as the Comparative Fit Index (CFI) to evaluate the model fit. CFI is used measure of goodness-of-fit in structural equation modeling (SEM) (Tabachnick & Fidell, 2019). The CFI assesses how well the hypothesized model fits the data by comparing it to a null model in which all variables are uncorrelated. As Hu and Bentler (1999) noted, a CFI value of .90 or higher is generally considered indicative of a good fit, although higher values are desirable for more complex models (also see Kline, 2016; Sümer, 2000). However, the CFI can be affected by the complexity of the model and the sample size, with larger samples generally leading to higher CFI values (Kline, 2016). Other factors may also impact the CFI. Therefore, it should be interpreted in conjunction with other fit indices, such as the Standardized Root Mean Square Residual (SRMR) (Marsh et al., 2004). SRMR quantifies the average difference between the observed and predicted covariance matrices. A lower SRMR value indicates a better fit between the model and the data, with values below .08 generally considered acceptable (Hu & Bentler, 1999).

The Tucker-Lewis Index (TLI) is also a commonly used fit index in structural equation modeling (SEM) that measures the degree of correspondence between a hypothesized model and observed data. According to Kline (2016), TLI is defined as the ratio of the difference between the chi-square values of the model and a baseline model to the

degrees of freedom of the model. TLI values range from 0 to 1, with values closer to 1 indicating a better fit. Hu and Bentler (1999) suggest that a TLI value of .90 or above generally indicates a good model fit, while values between .80 and .90 suggest an acceptable fit. However, some researchers have argued that TLI values can be influenced by sample size, model complexity, and other factors and should be interpreted cautiously (Marsh et al., 2004).

Other two commonly used measures are the Goodness of Fit Index (GFI) and the Adjusted Goodness of Fit Index (AGFI) (Marsh et al., 2004). GFI represents the proportion of variance and covariance accounted for by the model, while AGFI is a modification of GFI that adjusts for the number of parameters estimated in the model (Arbuckle, 2019). A GFI value of .90 or above is generally considered to indicate a good model fit (Marsh et al., 2004). However, some researchers have argued that a higher cut-off value, such as .95, may be more appropriate in certain circumstances (Hu & Bentler, 1999). The AGFI takes into account the number of parameters in the model. AGFI values range from 0 to 1, with higher values indicating a better fit between the model and the data. In a study by Hu and Bentler (1999), the authors suggest that an AGFI value of .90 or above indicates a suitable model fit, while values below .80 suggest a poor fit. However, other researchers have proposed different cut-off values depending on the model's complexity and the sample size (Marsh et al., 2004).

In order to evaluate how well the data aligns with the model, some fit indices were used in accordance with various cut-off values found in the relevant literature (Arbuckle, 2019; Brown, 2015; Çokluk et al., 2021; Hu & Bentler, 1999; Kline, 2016; Schumacker & Lomax, 2010, Sümer, 2000; Tabachnick & Fidell, 2019; Thompson, 2004). These values are presented in Table 3.10. However, the study did not regard the chi-square (χ^2) value's significance level ($p<.05$) as a fit index, as it could be influenced by the sample size's sensitivity (Hair et al., 2018). Still, it was included in the report for informative purposes.

Table 3.10 *Fit Indices and Cut-off Values*

Fit Indices		Cut-off Values
χ^2	Chi-square	The smaller the better
df	Degrees of freedom	-

Table 3.10 (continued)

χ^2/df	Normed Chi-square Fit Index	≤ 5
CFI	Comparative Fit Index	≥ .90
SRMR	Standardized Root Mean Square Residual	≤ .08 to .10
TLI	Tucker-Lewis Index	≥ .80 to .90
GFI	Goodness of Fit Index	≥ .90
AGFI	Adjusted Goodness of Fit Index	≥ .80 to .90

(Arbuckle, 2019; Brown, 2015; Çokluk et al., 2021; Hu & Bentler, 1999; Kelloway, 1998; Kline, 2016; Schumacker & Lomax, 2010; Sümer, 2000; Tabachnick & Fidell, 2019; Thompson, 2004)

The path model's endogenous variables and their predictors were analyzed by examining path coefficients to understand their relationships (Kline, 2016). These coefficients are similar to regression coefficients in multiple regression analyses and are interpreted in the same way (Kline, 2016). Table 4.40 provides standard errors, standardized (β) path coefficients, along with lower and upper values, and *p*-values. These p-values are used to determine the significance of the corresponding path coefficients (Kline, 2016).

Finally, if the path model suggests a poor fit, it may be necessary to modify or adjust the model (Kline, 2016). First, to enhance the fit of the model, Modification Indices (MI) were evaluated, and the error covariances among mediator variables (FRAS and RSA) and all endogenous variables were allowed to be freely estimated, which is supported by the relevant literature discussed earlier (see Hair et al., 2018). This resulted in a significant improvement in the model fit. However, to achieve a better fit with some fit indices (CFI, GFI and TLI), the model was subsequently revised by removing nonsignificant paths, in accordance with the study design, as suggested by previous research (Byrne, 2016; Chou & Bentler, 1990; Fan & Sivo, 2007; Hu & Bentler, 1999; Kelloway, 2015; Kline, 2016; Schumacker & Lomax, 2010).

3.7. Ethical Considerations

When conducting research involving human subjects, it is crucial to consider all potential risks to both the participants and researchers, especially for young children who cannot consent (Arnott et al., 2020). To obtain informed consent, all grown-up

participants, such as parents and teachers, were given an information sheet to read and asked to sign a consent form before participating in the study. Regarding children, parental consent was obtained first, followed by the verbal consent of the children. Also, each child was asked to consent to the researcher making a video-record of their Train Track Task construction process. The researcher provided an explanation if any child inquired about the reason for the video recording. These recordings remained confidential, the names of the children were replaced with codes and recordings were erased from the recorder after the analysis.

The primary ethical consideration of this project is working with young children. It should be noted that the researcher has prior experience working with and educating young children. In terms of the implementation, the Train Track Task was performed in an available room that school administrations arranged. Preschool teachers explained the process to their students, and allowed the researcher to engage with them in the classroom. Therefore, before starting the Train Track Task, children were invited to talk about their daily lives and friends to make them feel more comfortable and familiar with the researcher (Freeman & Mathison, 2009).

The study participants were explained their right to discontinue participation at any time and without giving a reason, following the ethical guidelines set forth by the British Ethics Research Association in 2018. They were explicitly told that withdrawal would not have any negative consequences for them or their children and that their data would be deleted. Furthermore, to keep the confidentiality of the data, the researcher informed participants that none of the data would be shared and that it would be used only for scientific research studies.

3.8. Threats to Validity

3.8.1. Internal Threats to Validity

Fraenkel et al. (2012) define internal validity as the clear and unambiguous relationship between two or more variables, which should be attributed to the independent variable rather than any other unexpected variables. The dependent variable should be directly connected to the independent variable and not influenced by other factors such as subject characteristics, mortality, location, or instrumentation in survey-based research (Fraenkel et al., 2012). To ensure more reliable and valid

outcomes, researchers should be conscious of potential internal threats and consider the steps accordingly while developing their study.

Choosing participants for a study can unintentionally result in differences among individuals or groups that relate to the variables under investigation (Fraenkel et al., 2012). To mitigate this issue in the present research, preschool children attending public and primary elementary schools and preschools operated by MoNE in multiple districts of Ankara were determined as the sample group. It was supposed that they had similar characteristics based on age and were residing in the same city. Similarly, their families and preschool teachers were also selected as the sample group by considering that they would have similar attributes due to living in the same city.

Mortality threat is a factor that can impact research results and is described as the loss of participants due to attrition, withdrawal, or low participation rates (Fraenkel et al., 2012). In this study, preschool teachers were informed about the study's purpose and asked to send consent forms to parents for their voluntary participation and that of their children. Once the consent forms and filled-out Family Resilience Assessment Scale were received, the researcher began implementing activities with preschool children. However, there was a risk of the children becoming uncomfortable with the researcher's presence and withdrawing from the study. To decrease the likelihood of this risk, children were invited to share their drawings and talk to the researcher before the activity started. Consequently, it is believed that the internal validity of this current study would not be threatened by mortality.

In addition, Fraenkel and colleagues (2012) expressed that the outcome of a study can be influenced by the characteristics of the person collecting the data. Since the same researcher collected data for all participants in this study, the data collector's characteristics were consistent across all preschool children and teachers. Thus, this will not threaten the study's internal validity. Furthermore, the data collector may consciously or unconsciously alter the data, which is known as data collector bias (Fraenkel et al., 2012). Another early childhood educator was asked to analyze the data after it was collected to prevent this. In this way, the accuracy of the interpretation and conclusions drawn from the data was ensured (Creswell, 2013; Milinki, 1999).

3.8.2. External Threats to Validity

External validity is defined as the extent to which the findings of a study can be applied or generalized to groups and settings outside the study context (Fraenkel et al., 2012). However, in the current study, the preschool children, their families, and teachers who participated cannot be considered representative of all possible groups and settings due to factors beyond the researcher's control. Expressly, data collection was limited to Ankara, and only preschool children, families, and teachers from this area were included, which means that the study may not capture the demographic characteristics of other regions in Türkiye. Therefore, the demographic area could potentially cause a threat to validity.

3.9. Assumptions and Limitations

There were some assumptions and limitations which should be considered while assessing and interpreting the results of the present study. Firstly, the families and the preschool teachers involved in the study were assumed to have truthfully and precisely shared their opinions about the items included in the data collection instruments. Moreover, no communication or interaction between the families and the preschool teachers was assumed when providing their responses to the statements in the instruments.

Regarding the limitations, the data was only collected in Ankara, Türkiye; therefore, the findings could not represent other cities in Türkiye, which indicates the results lack generalizability. In addition, no male preschool teacher participated in the present study; thus, the gender of the preschool teacher and its relationship with the study variables remain unknown. Moreover, the data collection procedure was another limitation; most data was gathered from public schools because private schools were unwilling to participate. Thus, this may have caused an inequality between the number of schools. Also, the data was only collected from the families through the preschool teachers. In other words, the direct contact of the researcher with families to gather data was not achievable. As a result, nearly fifty percent of the instruments either were not retrieved or retrieved after the data analysis was over.

Additionally, the data collection instruments had some limitations. For instance, data regarding the resilience of families and preschool teachers was not collected through

additional alternative assessment techniques; it was limited to self-report measures. Moreover, the Train Track Task might not be gender-neutral since it involves construction, where studies showed that boys perform better in such tasks (Labarthe, 1997; Rubin, 1997; Tian et al., 2018). In addition, only a mother or a father filled out the resilience scale, and the way family members experience and assess resilience can be different from each other (Deković & Buist, 2005). Lastly, preschool teachers filled out a checklist for their students' metacognitive skills based on their observations; however, various factors, including stereotypes, confirmation bias, personal connections with students, teacher expectations, and cultural differences, can influence and affect teachers' biases in student evaluations (see Bonefeld & Dickhäuser, 2018; Lindahl, 2016; Riegle-Crumb & Humphries, 2012).

3.10. Summary

In this chapter, the methods for the research design were summarized, the participants of the study were described, the selected instruments for the research were discussed, the data collection procedure, path analysis and ethical considerations for the research were addressed, and a review of the threats to validity to this study was presented. Detailed information about the arrangements put in place to ensure validity and reliability was presented and followed by assumptions and limitations of the study. The following chapter involves the findings of the study.

CHAPTER 4

RESULTS

This chapter includes the results of the preliminary data analysis, descriptive statistics, and inferential statistics. First, the preliminary analyses were conducted to ensure that the assumptions required for the analysis were met. The preliminary analysis results were presented by checking missing data, outliers, and assumptions. Secondly, descriptive statistics were determined, including the participants' characteristics and study variables. A one-way between-groups multivariate analysis of variance (MANOVA), an independent sample t-test, and a one-way between-groups analysis of variance (ANOVA) were performed. Then, correlation analysis was conducted, and the results of these analyses are explained in detail. Lastly, path analysis was performed, and the final model was presented.

4.1. Preliminary Data Analysis

Before starting the analysis regarding the study's research questions, some preliminary operations were conducted. First, the study's data were screened and treated in terms of data entering errors, missing values, and outliers using the IBM SPSS 28.0 program. After the data screening, the assumptions that are the preconditions of the data analysis in the study were tested. First, the sample size, which had been determined approximately before data collection, was checked. Then, a check was conducted to assess whether the displayed data followed a normal distribution, considering both its linearity and homoscedasticity. Lastly, multicollinearity and singularity were controlled for the associations among variables.

The preliminary data analysis was performed to ensure that assumptions required for statistical analysis were met by checking for missing data and outliers and assessing normality.

4.1.1. Missing Data Analysis

According to Pallant (2016), it is scarce to get complete data from every case of a study, especially when doing research with human beings. Such missing values can dramatically affect the results of statistical analyses. Therefore, it is essential to address the issue of missing data prior to data analysis, as traditional statistical methods assume that all variables are measured for all cases (Allison, 2009; Tabachnick & Fidell, 2019). Path analysis also assumes no missing values in the dataset (Kline, 2016). It is therefore it is essential to check the data file for missing values.

Tabachnick and Fidell (2019) stated that if 5% or fewer data points are missing on a random pattern in a large data set, the problems are less critical, and almost all procedures to deal with missing data yield similar results. However, the problems might be exacerbated if there is a significant amount of missing data in a small and moderately sized data set. There are several methods to address this problem, including traditional approaches such as listwise deletion, pairwise deletion, and imputation, as well as more modern approaches such as maximum likelihood, expected maximization, and multiple imputations (Shylaja & Kumar, 2018). Traditional techniques tend to offer superior performance when dealing with a small amount of missing data (Shylaja & Kumar, 2018). If a particular case is missing data for any of the variables, it can be excluded from the analysis altogether, referred to as listwise deletion (Tabachnich & Fidell, 2019). In the current study, there are no missing values in the demographic data of the participant preschool teachers, demographic data of the participant parents, Psychological Resilience Scale for Adults, and Children's Independent Learning Development (CHILD 3-5) Checklist. However, there were missing data in the Family Resilience Assessment Scale (FRAS) and demographic information on preschool children. Some parents did not include their children's birth dates, but their preschool teachers provided the data through CHILD 3-5. Also, seven families' data were missing from the Family Resilience Assessment Scale, so they were removed before the descriptive analysis.

4.1.2. Outliers

According to Tabachnick and Fidell (2019), outliers are cases that have unusually high or low values on a single variable (univariate outlier) or on multiple variables in combination (multivariate outlier) that distort statistical analyses. Box plots can be

used to identify outliers by marking extreme values that lie beyond three box lengths from the edge of the box (Pallant, 2016).

Outliers significantly affect the mean, which can be assessed by calculating the 5% trimmed mean in each dimension. Further data examination is warranted if the mean deviates significantly from the 5% trimmed mean (Pallant, 2016). In this study, all the criteria outlined above were applied to identify outliers, and data transformation was used to reduce the impact of univariate outliers and normalize the distribution (Field, 2013).

4.1.3. Assumption Testing

Before conducting inferential statistics, screening continuous variables for normality is essential. Once the data screening was complete, assumptions such as sample size, normality, linearity and singularity, and multicollinearity were checked using the IBM SPSS 28.0 package program to test the data's suitability for addressing the research questions in the study.

4.1.3.1. Sample Size

Determining the appropriate sample size for statistical analyses is a debate among researchers. According to Fraenkel et al. (2012), a minimum of 30 participants is necessary for a correlational study. Alternatively, Tabachnick and Fidell (2019) proposed a formula considering the number of exogenous variables, suggesting a minimum sample size of > 50 + 8m. Ullman (2013) stated that path analysis and SEM are known to be highly sensitive to sample size. To obtain stable estimates of covariances, larger sample sizes are typically required. While Kline (2016) recommended a minimum of 200 cases for specific educational and psychological review studies, he also cautioned that the ideal sample size might depend on factors like the model's complexity and the data distribution. As such, there is no definite cut-off point for the minimum sample size needed, but having a larger sample size is generally considered necessary for path analysis. Thus, the current study drew a total of 456 participants through 208 preschool children, 208 families and 40 teachers to ensure accurate analyses of the desired variables.

4.1.3.2. Normality

Assessing the normal distribution of data is crucial to ensure the accuracy of statistical analyses (Byrne, 2016; Pallant, 2016; Tabachnick & Fidell, 2019). A range of methods, such as examining histograms and plots, as well as using tests like Kolmogorov Smirnov and Shapiro-Wilk, can be used to evaluate the normality of data. Skewness and kurtosis values can provide information about the symmetry and peakedness of the distribution, respectively (Tabachnick & Fidell, 2019). A skewed distribution indicates that the mean value of a variable does not align with the center of the distribution, while the kurtosis value can show whether the distribution is peaked or flat. However, a perfect normal distribution with zero skewness and kurtosis values is rare in social sciences. In this study, the skewness and kurtosis values were examined to check the normality of each variable (i.e., metacognitive skills of preschool children, family resilience, and teacher resilience).

According to George and Mallery (2003), Pallant (2016), and Tabachnick and Fidell (2019), skewness and kurtosis values ranging from -1 to +1 are indicative of excellent normality, while values between -2 and +2 are considered acceptable. In the current study, as seen in Table 4.1, the skewness values ranged from -.538 to .733. On the other hand, the kurtosis values were in the range between -1.471 and -.043. Thus, most of the skewness and kurtosis values for variables were in the mean of ± 1. The values exceeding this range were in the mean of ±2, indicating a near-normal distribution Therefore, it can be said that the normality distribution has not been violated.

Table 4.1 *Descriptive Statistics*

	Skewness		Kurtosis	
Task	Statistic	Std. Error	Statistic	Std. Error
Metacognitive Skills of Preschool Children				
Train Track Task				
Metacognitive Skills Easy Task	.660	.169	-.633	.336
Metacognitive Skills Hard Task	.733	.169	-.043	.336
CHILD 3-5	-.161	.169	-1.153	.336
Family Resilience				
FRAS	-.538	.169	-.349	.336

Table 4.1 (continued)

Task	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Teacher Resilience				
RSA	.091	.169	-1.471	.336

Easy task: Oval shape; Hard task: Goggle shape; FRAS: Family Resilience Assessment Scale; RSA: Resilience Scale for Adults; Metacognitive skills easy rates are total rates per minute.

Besides analyzing the skewness and kurtosis measures, the normality of the data was evaluated using the Kolmogorov-Smirnov test, as shown in Table 4.2. If the results of this test are not significant, it may suggest that the data is normal, according to Pallant (2016). However, significant results of the Kolmogorov-Smirnov test in this study indicated that the normality assumption was violated. It is worth noting that the test results are often significant in large sample sizes (Field, 2013; Pallant, 2016).

Table 4.2 *Tests of Normality*

Task	Kolmogorov-Smirnov[a]		Shapiro-Wilk	
	Statistic	Sig.	Statistic	Sig.
Metacognitive Skills of Preschool Children				
Train Track Task				
Metacognitive Skills Easy Task	.127	<.001	.918	<.001
Metacognitive Skills Hard Task	.108	<.001	.945	<.001
CHILD 3-5	.146	<.001	.945	<.001
Family Resilience				
FRAS	.157	<.001	.952	<.001
Teacher Resilience				
RSA	.246	<.001	.868	<.001

Easy Task: Oval shape; Hard Task: Goggle shape; FRAS: Family Resilience Assessment Scale; RSA: Resilience Scale for Adults; Metacognitive skill rates are total rates per minute.

Pallant (2016) suggested analyzing histograms and plots in addition to normality tests to determine if the data were normally distributed, as large sample sizes often violate normality assumptions. A bell-shaped distribution in histograms, a straight line in

Normal Q-Q plots, and the proximity of scores to a straight line indicate normal distribution. As such, histograms, Normal Q-Q plots, and Detrended Normal Q-Q plots were evaluated (see Appendix I). The findings revealed that all variables seemed to adhere to the normality assumption.

4.1.3.3. Linearity

In order to assess the linearity of the distribution, the correlation between variables can be examined through a scatter plot (Pallant, 2016). A scatter plot displays the distribution of data points representing the correlation between two sets of data (Tabachnick & Fidell, 2019). If the points in the plot align relatively straight, it suggests a linear relationship between the variables. Conversely, if the data points are in the plot curve, it suggests a curvilinear relationship between the variables. Examination of the scatter plots in this study indicated that the linearity assumption was met (see Appendix J).

4.1.3.4. Multicollinearity and Singularity

Before proceeding with further analyses, evaluating two essential assumptions are important: multicollinearity and singularity. These can be assessed by examining the correlations between independent variables in a regression model. Multicollinearity occurs when there are high correlations between independent variables, typically with a correlation higher than .90 (Tabachnick & Fidell, 2019). On the other hand, the singularity occurs when there is a perfect correlation between two independent variables or when one independent variable is a linear combination of two other independent variables (Field, 2013). In the present study, the examination of independent variables showed that the correlations between them were below the threshold value of .90. Therefore, it can be concluded that multicollinearity and singularity were not problematic in this study.

Moreover, another way to test for multicollinearity is through Tolerance Value and Variance Inflation Factor (VIF). If the Tolerance Value is less than .10 and the VIF is greater than 10, this indicates that the assumption has been met (Field, 2013). In the present study, both the Tolerance and VIF values indicated no presence of multicollinearity, as shown in Table 4.3. Hence, both bivariate correlations and Tolerance and VIF values confirmed the absence of multicollinearity.

Table 4.3 *Coefficients*

Variables	Tolerance	VIF
CG	.958	1.044
PG	.975	1.026
PES	.684	1.461
FI	.748	1.338
FRAS	.581	1.722
RSA	.538	1.858
TI	.598	1.673
TES	.511	1.955

CG: Child gender; PG: Parent gender; PES: Parent educational status; FI: Family income; FRAS: Family Resilience Assessment Scale; RSA: Resilience Scale for Adults; TI: Teacher income; TES: Teacher educational status

4.2. Preschool Children's Metacognitive Skills (Train Track Tasks and CHILD 3-5)

The study's preliminary analyses were followed by the presentation of descriptive statistics, including means, standard deviations, and minimum and maximum values for the study variables, to address the first research question as follows (see Table 4.4).

R.Q1. What is the level of metacognitive skills of preschool children?

Table 4.4 *Descriptive Statistics*

Task	*Min*	*Max*	*M*	*SD*
Metacognitive Skills Easy Task	2.38	15.51	7.06	3.50
Metacognitive Skills Hard Task	3.00	15.27	6.83	2.55
CHILD 3-5	33	72	53.88	9.59

Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute.

Descriptive statistics results for the train track task showed that preschool children showed higher metacognitive skills on the easy (oval) task (*M*= 7.06, *SD*= 3.50) when compared to the hard (goggle) task (*M*= 6.83, *SD*= 2.55). In addition, when the total CHILD 3-5 checklist scores were examined, it can be inferred that preschool children had a high level of metacognitive skills (*M*= 53.88, *SD*= 9.59).

4.2.1. Preschool Children's Metacognitive Skills and Their Gender

R.Q.1.1. Is there a significant difference between preschool children's metacognitive skills regarding gender?

In order to address the first sub-question of the first research question, a multivariate analysis of variance (MANOVA) was carried out to compare the groups across multiple dependent variables (Pallant, 2016). As described by Pallant (2016), by utilizing MANOVA instead of performing separate ANOVAs for each dependent variable, the risk of committing a Type I error can be controlled.

Pallant (2016) listed multivariate analysis of variance (MANOVA) assumptions as sample size, normality, linearity, presence of univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity. The assumptions were checked and confirmed prior to conducting the MANOVA. The findings related to sample size, normality, linearity, outliers, and multicollinearity were mentioned earlier, while the results pertaining to the assumptions of multivariate normality and homogeneity of variance-covariance matrices are presented below (see Table 4.5).

Table 4.5 *Residuals Statistics*

	Minimum	Maximum	Mean	Std. Deviation
Predicted Value	1.03	1.93	1.49	.204
Std. Predicted Value	-2.258	2.168	.000	1.000
Standard Error of Predicted Value	.036	.118	.062	.015
Adjusted Predicted Value	1.03	1.93	1.49	.205
Residual	-.737	.864	.000	.458
Std. Residual	-1.598	1.873	.000	.993
Stud. Residual	-1.615	1.919	.001	1.003
Deleted Residual	-.754	.906	.001	.467
Stud. Deleted Residual	-1.621	1.931	.001	1.004
Mahal. Distance	.238	12.539	2.986	1.922
Cook's Distance	.000	.045	.005	.006
Centered Leverage Value	.001	.061	.014	.009

Mahalanobis distance is defined by Tabachnick and Fidell (2013) and Field (2013) as the distance between a case and the center of distribution for other cases within a dataset. This distance is determined by comparing the critical Chi-Square value, significant at $p < .001$ level, to the degree of freedom corresponding to the number of independent variables. In this study, the critical Mahalanobis distance value was

calculated as 16.27 for a degree of freedom (*df*) of 3, indicating significance at the .001 level for the number of items. To verify the multivariate normality assumption, the maximum Mahalanobis distance value of 12.54 was examined, which was below the critical value of 16.27. Therefore, it can be inferred that there were no significant multivariate outliers.

In order to ensure that the assumption of homogeneity of variance-covariance matrices was met, an examination of Box's Test of Equality of Variances was performed (see Table 4.6). A non-significant value at .001 level means that the data does not violate the homogeneity of the variances assumption (Field, 2013; Pallant, 2016; Tabachnick & Fidell, 2019). Since the significance value was greater than .001, it can be inferred that the homogeneity of variance – covariance matrices assumption was not violated.

Table 4.6. *Box's Test of Equality of Covariance Matrices*

Box's M	14.379
F	2.359
df1	6
df2	306222.694
Sig.	.028

Levene's test of equality of error variances was also checked for equality of variance assumption. If the values are higher than .05, it means that the assumption has not been violated (Pallant, 2016; Tabachnick & Fidell, 2019). However, when Table 4.7 is examined, it can be seen that equality of variance assumption was violated in the CHILD 3-5 Checklist. In these circumstances, Tabachnich and Fidell (2019) suggested using the alpha level of .025 or .01. Thus, the alpha level .01 was used in the current study.

Table 4.7 *Levene's Test of Equality of Error Variances*

	Levene Statistic	df1	df2	Sig.
Metacognitive Skills Easy Task	1.707	1	206	.193
Metacognitive Skills Hard Task	.055	1	206	.815
CHILD 3-5	7.835	1	206	.006

Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute.

One-way between-groups multivariate analyses of variance (MANOVA) were performed to examine the differences in metacognitive skills scores of children with respect to gender. Three dependent variables were used in this current analysis:

metacognitive skills rate for the easy (oval) task, metacognitive skills for the hard (goggle) task and CHILD 3-5 Checklist. The independent variable of this present analysis was gender. Normality, linearity, univariate and multivariate outliers, homogeneity of variance–covariance matrices, and multicollinearity assumption were met. No serious violations were noted before the one-way between-groups multivariate analyses were performed. There was a statistically significant difference between girls and boys on the dependent variables, Multivariate F (3,204) = 13.497, $p < .001$; Wilks' Lambda = .83; $\eta_p^2 = .17$ (see Table 4.8).

Table 4.8 *Multivariate Tests for the Gender of the Children*

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Gender	Wilks' lambda	.834	13.497	3	204	<.001	.166

Cohen (1988, 1992) outlines that effect sizes of .01, .06, and .14 are considered small, medium, and large, respectively. In the present study, the partial eta squared value is .17, indicating a large effect size. According to Pallant (2016), if a multivariate test of significance yields a significant outcome, additional examination of each dependent variable can be carried out. It is advised to utilize a higher alpha level to minimize the likelihood of a Type I error using Bonferroni adjustment. This includes dividing the alpha level of .05 by the number of dependent variables in the study, resulting in a new alpha level of .017. Hence, the results less than (Sig.) .017 were considered significant. When the results for the dependent variables were considered separately, the differences reached a statistical significance, using a Bonferroni adjusted alpha level of .017, thus metacognitive skills for the easy (oval) task were found to be F(1,206)= 6.407, p= .012, η_p^2 =.03, metacognitive skills for the hard (goggle) task, F(1,206)= 7.37, p= .007, η_p^2 =.04, and CHILD 3-5 checklist, F(1,206)= 11.820, p<.001, η_p^2=.05 (see Table 4.9). An inspection of the mean scores indicated that boys showed higher metacognitive skills for both the easy (oval) and the hard (goggle) tasks (M= 7.65, SD= .37; M= 7.30, SD= .24, respectively) than girls (M= 6.44, SD= .34; M= 6.35, SD= .25, respectively). On the contrary, girls obtained higher scores on the CHILD 3-5 Checklist (M= 56.15, SD= .93) than boys (M= 51.49, SD= .91).

Table 4.9 *Metacognitive Skills and Gender Tests of Between-Subjects Effects*

Source	Dependent Variable	F	Sig.	Partial Eta Squared
Gender	Metacognitive Skills Easy Task	6.407	.012	.030

Table 4.9 (continued)

Metacognitive Skills Hard Task	7.374	.007	.035
CHILD 3-5	11.820	<.001	.054

*Bonferroni adjusted alpha level of .017
Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute.

In other words, there are statistically significant differences between the metacognitive skills of boys and girls in metacognitive skills easy (oval) task, metacognitive skills hard (goggle) task, and CHILD 3-5 Checklist scores. While gender has small effects on metacognitive skills in the easy and the hard tasks, it has a nearly medium effect on CHILD 3-5 Checklist scores (Cohen, 1988). This means that while 5% of the variance in CHILD 3-5 Checklist is explained by gender, it only explains 3% of the variance in metacognitive skills in the easy (oval) task and approximately 4% of the variance in metacognitive skills in the hard (goggle) task.

4.2.2. Preschool Children's Metacognitive Skills and the Educational Status of Their Parents

R.Q.1.2. Is there a significant difference between preschool children's metacognitive skills regarding the educational status of their parents?

One – way between – groups multivariate analyses of variance (MANOVA) were performed to investigate the differences in children's metacognitive skills in terms of their parents' educational status. Three dependent variables were used in this current analysis: metacognitive skills in the easy (oval) task, metacognitive skills in the hard (goggle) task, and the CHILD 3-5 Checklist. The independent variable of this present analysis was the educational status of the parents. Normality, linearity, univariate and multivariate outliers, homogeneity of variance–covariance matrices (see Table 4.10), and multicollinearity assumption were checked. No serious violations were noted before the one–way between-groups multivariate analyses were performed. These analyses showed a statistically significant difference between the educational status of the parents on the dependent variables, Multivariate $F(15,552.51)= 5.69$, $p<.001$; Wilks' Lambda= .67; $\eta_p^2= .12$ (see Table 4.11).

Table 4.10 *Box's Test of Equality of Covariance Matrices*

Box's M	62.498
F	1.933
df1	30
df2	8898.416
Sig.	.002

Table 4.11 *Multivariate Tests for Parent Educational Status*

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Educational Status	Wilks' Lambda	.673	5.692	15	552.51	<.001	.124

If a significant result is obtained from a multivariate significance test, further investigation with respect to each dependent variable can be done. It is suggested to use a higher alpha level to reduce the chance of a Type I error by applying Bonferroni adjustment, which includes dividing the alpha level of .05 by the number of dependent variables of the study (Pallant, 2016).

The new alpha level of .017 was found by dividing the alpha level of .05 by the number of dependent variables. When the results for the dependent variables were considered separately, the differences to reach statistical significance were attained using a Bonferroni adjusted alpha level of .017. Thus, metacognitive skills for the easy (oval) task were calculated as $F(5,202)= 3.22$, $p= .008$, $\eta_p^2 =.07$; metacognitive skills for the hard (goggle) task, $F(5,202)= 3.99$, $p= .002$, $\eta_p^2 =.09$ and CHILD 3-5 checklist, $F(5,202)= 14.80$, $p<.001$, $\eta_p^2=.27$ (see Table 4.12).

Table 4.12 *Metacognitive Skills and Parent Educational Status Tests of Between-Subjects Effects*

Source	Dependent Variable	F	Sig.	Partial Eta Squared
Educational Status	Metacognitive Skills Easy Task	3.216	.008	.074
	Metacognitive Skills Hard Task	3.991	.002	.090
	CHILD 3-5	14.800	<.001	.268

*Bonferroni adjusted alpha level of .017
Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute.

The importance of parents' educational status on preschool children's metacognitive skills can be evaluated through Partial Eta Squared values, which represent the proportion of the variance in the dependent variable that can be explained by the independent variable (Pallant, 2016). In this case, parent's educational status has moderate effect on the metacognitive skills for the easy (oval) task (.07) and metacognitive skills for the hard (goggle) task (.09), while it has a substantial effect on CHILD 3-5 (.27) according to Cohen's guideline (Cohen, 1988).

Since the independent variable has more than two categories, in order to determine where the significant differences lie, a follow-up univariate analysis of variance should be conducted (Pallant, 2016). Thus, with this purpose, one-way ANOVA on the significant dependent variables in the MANOVA was performed (see Table 4.13).

For the metacognitive skills in the easy (oval) task, although there was a statistical significance between preschool children's metacognitive skill rates and the educational status of their parents, there were no statistically significant differences between the educational groups. The partial eta square represented 7% of the variance in preschool children's metacognitive skills in the easy (oval) task that were explained by the educational status of their parents.

Preschool children's metacognitive skills in the hard (goggle) task, whose parents were educated to master's degree level, were significantly different from preschool children whose parents were primary school graduates. An inspection of the mean scores indicated that preschool children of parents with master's degrees had higher metacognitive skills rate in the hard (goggle) task (M= 8.51, SD= 2.73) than the children of primary school graduates (M= 4.94 SD= 1.73). The partial eta square represented 9% of the variance in preschool children's metacognitive skills in the hard (goggle) task and was explained by the educational status of their parents.

Lastly, the CHILD 3-5 scores of preschool children whose parents had bachelor's and master's degree were significantly different from all other educational statuses. Children of the parents with a master's degree obtained the highest scores in CHILD 3-5 scores, and the results were significantly different from those of the children whose parents were primary school, secondary, school, high school graduates and had associate degree.

Table 4.13 *Multiple Comparisons for Parent Educational Status*

Dependent Variable	(I) Educational Status	(J) Educational Status	Mean Diff. (I-J)	Std. Error	Sig.	98.3% Confidence Interval	
						Lower Bound	Upper Bound
Metacognitive Skills Easy Task	Primary school graduate	Secondary school graduate	1.44283	1.39667	1.000	-3.1696	6.0553
		High school graduate	.44760	1.11276	1.000	-3.2273	4.1225
		Associate degree	.01557	1.14189	1.000	-3.7555	3.7867
		Bachelor's degree	-1.23914	1.11819	1.000	-4.9319	2.4537
		Master's degree	-2.32370	1.39667	1.000	-6.9362	2.2888
	Secondary school graduate	Primary school graduate	-1.44283	1.39667	1.000	-6.0553	3.1696
		High school graduate	-.99523	1.03715	1.000	-4.4204	2.4299
		Associate degree	-1.42726	1.06835	1.000	-4.9555	2.1009
		Bachelor's degree	-2.68197	1.04297	.163	-6.1264	.7624
		Master's degree	-3.76654	1.33721	.080	-8.1827	.6496
	High school graduate	Primary school graduate	-.44760	1.11276	1.000	-4.1225	3.2273
		Secondary school graduate	.99523	1.03715	1.000	-2.4299	4.4204
		Associate degree	-.43204	.65491	1.000	-2.5949	1.7308
		Bachelor's degree	-1.68674	.61264	.097	-3.7100	.3365
		Master's degree	-2.77131	1.03715	.122	-6.1965	.6539
	Associate degree	Primary school graduate	-.01557	1.14189	1.000	-3.7867	3.7555
		Secondary school graduate	1.42726	1.06835	1.000	-2.1009	4.9555
		High school graduate	.43204	.65491	1.000	-1.7308	2.5949
		Bachelor's degree	-1.25471	.66409	.904	-3.4478	.9384
		Master's degree	-2.33927	1.06835	.445	-5.8675	1.1889

Table 4.13 (continued)

	Bachelor's degree	Primary school graduate	1.23914	1.11819	1.000	-2.4537	4.9319
		Secondary school graduate	2.68197	1.04297	.163	-.7624	6.1264
		High school graduate	1.68674	.61264	.097	-.3365	3.7100
		Associate degree	1.25471	.66409	.904	-.9384	3.4478
		Master's degree	-1.08456	1.04297	1.000	-4.5289	2.3598
	Master's degree	Primary school graduate	2.32370	1.39667	1.000	-2.2888	6.9362
		Secondary school graduate	3.76654	1.33721	.080	-.6496	8.1827
		High school graduate	2.77131	1.03715	.122	-.6539	6.1965
		Associate degree	2.33927	1.06835	.445	-1.1889	5.8675
		Bachelor's degree	1.08456	1.04297	1.000	-2.3598	4.5289
Metacognitive Skills Hard Task	Primary school graduate	Secondary school graduate	-1.74656	1.00823	1.000	-5.0762	1.5831
		High school graduate	-1.25153	.80328	1.000	-3.9044	1.4013
		Associate degree	-2.20589	.82431	.121	-4.9282	.5164
		Bachelor's degree	-2.36758	.80720	.056	-5.0333	.2982
		Master's degree	-3.57386*	1.00823	.007	-6.9035	-.2442
	Secondary school graduate	Primary school graduate	1.74656	1.00823	1.000	-1.5831	5.0762
		High school graduate	.49503	.74870	1.000	-1.9775	2.9676
		Associate degree	-.45933	.77122	1.000	-3.0063	2.0876
		Bachelor's degree	-.62102	.75290	1.000	-3.1075	1.8654
		Master's degree	-1.82730	.96531	.897	-5.0152	1.3606

Table 4.13 (continued)

	High school graduate	Primary school graduate	1.25153	.80328	1.000	-1.4013	3.9044
		Secondary school graduate	-.49503	.74870	1.000	-2.9676	1.9775
		Associate degree	-.95436	.47277	.673	-2.5157	.6069
		Bachelor's degree	-1.11605	.44225	.186	-2.5766	.3445
		Master's degree	-2.32233	.74870	.033	-4.7949	.1502
	Associate degree	Primary school graduate	2.20589	.82431	.121	-.5164	4.9282
		Secondary school graduate	.45933	.77122	1.000	-2.0876	3.0063
		High school graduate	.95436	.47277	.673	-.6069	2.5157
		Bachelor's degree	-.16169	.47939	1.000	-1.7449	1.4215
		Master's degree	-1.36797	.77122	1.000	-3.9149	1.1790
	Bachelor's degree	Primary school graduate	2.36758	.80720	.056	-.2982	5.0333
		Secondary school graduate	.62102	.75290	1.000	-1.8654	3.1075
		High school graduate	1.11605	.44225	.186	-.3445	2.5766
		Associate degree	.16169	.47939	1.000	-1.4215	1.7449
		Master's degree	-1.20628	.75290	1.000	-3.6927	1.2802
	Master's degree	Primary school graduate	3.57386*	1.00823	.007	.2442	6.9035
		Secondary school graduate	1.82730	.96531	.897	-1.3606	5.0152
		High school graduate	2.32233	.74870	.033	-.1502	4.7949
		Associate degree	1.36797	.77122	1.000	-1.1790	3.9149
		Bachelor's degree	1.20628	.75290	1.000	-1.2802	3.6927
CHILD 3-5	Primary school graduate	Secondary school graduate	-3.245	3.403	1.000	-14.48	7.99
		High school graduate	-6.075	2.711	.392	-15.03	2.88
		Associate degree	-7.602	2.782	.103	-16.79	1.59
		Bachelor's degree	-13.274*	2.724	<.001	-22.27	-4.28
		Master's degree	-21.552*	3.403	<.001	-32.79	-10.32

Table 4.13 (continued)

Secondary school graduate	Primary school graduate	3.245	3.403	1.000	-7.99	14.48
	High school graduate	-2.831	2.527	1.000	-11.18	5.51
	Associate degree	-4.357	2.603	1.000	-12.95	4.24
	Bachelor's degree	-10.029*	2.541	.002	-18.42	-1.64
	Master's degree	-18.308*	3.258	<.001	-29.07	-7.55
High school graduate	Primary school graduate	6.075	2.711	.392	-2.88	15.03
	Secondary school graduate	2.831	2.527	1.000	-5.51	11.18
	Associate degree	-1.526	1.596	1.000	-6.80	3.74
	Bachelor's degree	-7.199*	1.493	<.001	-12.13	-2.27
	Master's degree	-15.477*	2.527	<.001	-23.82	-7.13
Associate degree	Primary school graduate	7.602	2.782	.103	-1.59	16.79
	Secondary school graduate	4.357	2.603	1.000	-4.24	12.95
	High school graduate	1.526	1.596	1.000	-3.74	6.80
	Bachelor's degree	-5.673*	1.618	.008	-11.02	-.33
	Master's degree	-13.951*	2.603	<.001	-22.55	-5.36
Bachelor's degree	Primary school graduate	13.274*	2.724	<.001	4.28	22.27
	Secondary school graduate	10.029*	2.541	.002	1.64	18.42
	High school graduate	7.199*	1.493	<.001	2.27	12.13
	Associate degree	5.673*	1.618	.008	.33	11.02
	Master's degree	-8.278	2.541	.020	-16.67	.11
Master's degree	Primary school graduate	21.552*	3.403	<.001	10.32	32.79
	Secondary school graduate	18.308*	3.258	<.001	7.55	29.07
	High school graduate	15.477*	2.527	<.001	7.13	23.82
	Associate degree	13.951*	2.603	<.001	5.36	22.55
	Bachelor's degree	8.278	2.541	.020	-.11	16.67

* The mean difference is significant at the .017 level.

An inspection of the mean scores indicated that preschool children of higher educated parents had higher metacognitive skill rates in the CHILD 3-5 scores (*M*= 66.46, *SD*= 3.97) than preschool children whose parents were primary school (*M*= 44.91, *SD*= 10.51), secondary school (*M*= 48.15, *SD*= 7.08), high school graduates (*M*= 50.98, *SD*= 8.34) and those with associate degrees (*M*= 52.51, *SD*= 9.97). Similarly, the CHILD 3-5 scores of preschool children whose parents had a bachelor's degree were significantly different from the CHILD 3-5 scores of the children whose parents had lower education attainment. An inspection of the mean scores indicated that preschool children whose parents had a bachelor's degree had higher metacognitive skill rates in the CHILD 3-5 scores (*M*= 58.18, *SD*= 7.23) than preschool children whose parents completed their education at primary school (*M*= 44.91, *SD*= 10.51), secondary school (*M*= 48.15, *SD*= 7.08), high school (*M*= 50.98, *SD*= 8.34) or by obtaining an associate degree (*M*= 52.51, *SD*= 9.97). The partial eta square represented 27% of the variance in preschool children's CHILD 3-5 scores were explained by the educational status of their parents.

4.2.3. Preschool Children's Metacognitive Skills and the Family's Income

R.Q.1.3. Is there a significant difference between preschool children's metacognitive skills regarding the family's income?

One–way between–groups multivariate analyses of variance (MANOVA) was performed to investigate the differences in metacognitive skills of children in terms of family income. Three dependent variables were used in this current analysis: metacognitive skills rate for the easy (oval) task, metacognitive skills for the hard (goggle) task and CHILD 3-5 Checklist. The independent variable of this present analysis was family income. Normality, linearity, univariate and multivariate outliers, homogeneity of variance – covariance matrices (see Table 4.14), and multicollinearity assumption were checked. No serious violations were noted before the one–way between-groups multivariate analyses were performed. The analyses produced a statistically significant difference between children's family income on the dependent variables, Multivariate $F(9,491.77)= 2.027$, $p=.035$; Wilks' Lambda= .92; $\eta_p^2 = .03$ (see Table 4.15).

Table 4.14 *Box's Test of Equality of Covariance Matrices for Family Income*

Box's M	42.168
F	2.269
df1	18
df2	55371.601
Sig.	.002

Table 4.15 *Multivariate Tests for Family Income*

	Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Total Income	Wilks' Lambda	.915	2.027	9	491.766	.035	.029

If a significant result is obtained from a multivariate significance test, further investigation with respect to each dependent variable can be done. It is suggested to use a higher alpha level to reduce the chance of a Type I error by applying Bonferroni adjustment, which includes dividing the alpha level of .05 by the number of dependent variables of the study (Pallant, 2016). The new alpha level of .017 was found by dividing the alpha level of .05 by the number of dependent variables. When the results for the dependent variables were considered separately, no significant differences were seen at the alpha level of .017. The results showed that while CHILD 3-5 Checklist was statistically significant $F(3, 204) = 400.30$, $p = .004$, $\eta_p^2 = .063$, there were no statistical significance in metacognitive skills in the easy (oval) task, $F(3, 204) = .66$, $p = .579$, $\eta_p^2 = .010$ and metacognitive skills in the hard (goggle) task $F(3, 204) = 1.80$, $p = .147$, $\eta_p^2 = .026$ (see Table 4.16).

Table 4.16 *Metacognitive Skills and Family Income Tests of Between-Subjects Effects*

Source	Dependent Variable	F	Sig.	Partial Eta Squared
Family Income	Metacognitive Skills Easy Task	.658	.579	.010
	Metacognitive Skills Hard Task	1.806	.147	.026
	CHILD	4.577	.004	.063

Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute.

In order to obtain the locations of significant differences, a follow-up univariate analysis of variance should be conducted (Pallant, 2016). Therefore, a follow-up univariate analysis of variance was performed (see Table 4.17).

Table 4.17 *Multiple Comparisons for Family Income*

Dependent Variable	(I) Family Income	(J) Family Income	Mean Diff. (I-J)	Std. Error	Sig.	98.3% Confidence Interval	
						Lower Bound	Upper Bound
Metacognitive Skills Easy Task	Low	Middle	.41624	.59696	1.000	-1.3877	2.2202
		Middle-High	-.10445	.70174	1.000	-2.2251	2.0161
		High	-.63382	.79485	1.000	-3.0358	1.7682
	Middle	Low	-.41624	.59696	1.000	-2.2202	1.3877
		Middle-High	-.52070	.68135	1.000	-2.5797	1.5383
		High	-1.05006	.77691	1.000	-3.3978	1.2977
	Middle-High	Low	.10445	.70174	1.000	-2.0161	2.2251
		Middle	.52070	.68135	1.000	-1.5383	2.5797
		High	-.52937	.86003	1.000	-3.1283	2.0696
	High	Low	.63382	.79485	1.000	-1.7682	3.0358
		Middle	1.05006	.77691	1.000	-1.2977	3.3978
		Middle-High	.52937	.86003	1.000	-2.0696	3.1283
Metacognitive Skills Hard Task	Low	Middle	-.73426	.43116	.541	-2.0372	.5687
		Middle-High	-.98200	.50683	.324	-2.5136	.5496
		High	-.99700	.57408	.504	-2.7318	.7378
	Middle	Low	.73426	.43116	.541	-.5687	2.0372
		Middle-High	-.24774	.49210	1.000	-1.7348	1.2394
		High	-.26274	.56112	1.000	-1.9584	1.4329
	Middle-High	Low	.98200	.50683	.324	-.5496	2.5136
		Middle	.24774	.49210	1.000	-1.2394	1.7348
		High	-.01499	.62116	1.000	-1.8921	1.8621

Table 4.17 (continued)

	High	Low	.99700	.57408	.504	-.7378	2.7318
		Middle	.26274	.56112	1.000	-1.4329	1.9584
		Middle-High	.01499	.62116	1.000	-1.8621	1.8921
CHILD 3-5	Low	Middle	-.030	1.591	1.000	-4.84	4.78
		Middle-High	-3.046	1.871	.630	-8.70	2.61
		High	-6.835*	2.119	.009	-13.24	-.43
	Middle	Low	.030	1.591	1.000	-4.78	4.84
		Middle-High	-3.017	1.816	.589	-8.51	2.47
		High	-6.805*	2.071	.007	-13.06	-.55
	Middle-High	Low	3.046	1.871	.630	-2.61	8.70
		Middle	3.017	1.816	.589	-2.47	8.51
		High	-3.788	2.293	.600	-10.72	3.14
	High	Low	6.835*	2.119	.009	.43	13.24
		Middle	6.805*	2.071	.007	.55	13.06
		Middle-High	3.788	2.293	.600	-3.14	10.72

* The mean difference is significant at the 0.017 level.

Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute.

For the metacognitive skills in the easy (oval) task and the hard (goggle) task, although there were statistically significance differences between preschool children's metacognitive skill rates in these tasks and the family income, there were no statistically significant differences between the income groups. The partial eta square for family income explains 1% of the variance in preschool children's metacognitive skills in the easy (oval) task, and 3% of the variance in the hard (goggle) task.

Regarding the CHILD 3-5, the scores of preschool children who have a high family income (15001+ TL) were found to be statistically significant from those children from low (0-5000 TL) and middle (5001-10000 TL) income families. An inspection of the mean scores indicated that preschool children of families with a high income had higher CHILD 3-5 scores (*M*= 59.18, *SD*= 8.92) than preschool children of families with low (*M*= 52.34, *SD*= 9.68) and middle (*M*= 52.37, *SD*= 8.69) incomes. 7% of the variance in preschool children's CHILD 3-5 scores was explained by family income, as indicated by the partial eta square.

4.3. Resilience of the Families

After the preliminary analyses, the descriptive statistics for (i.e., the means, standard deviations, minimum, and maximum values) the study variables were provided to answer the second research question as follows (see Table 4.18).

R.Q.2. What is the resilience of preschool children's families?

Table 4.18 *Descriptive Statistics of FRAS*

	N	Minimum	Maximum	Mean	Std. Deviation
FRAS	208	137	208	179.21	16.807

FRAS: Family Resilience Assessment Scale

Descriptive statistics results for Family Resilience Assessment (FRAS) showed that out of a maximum 216-point scale, families' minimum score is 137 while the maximum is 208. Also, the results presented that the mean of the scores in FRAS is 179.21. When the mean value is examined, it can be inferred that families possessed a high-level resilience (*M*= 179.21, *SD*= 16.81, *Min*= 137, *Max*=208).

4.3.1. Resilience of the Preschool Children's Families and the Gender of the Participant Parent

R.Q.2.1. Is there a significant difference between the resilience of preschool children's families regarding the gender of the parent?

In order to investigate the differences in family resilience scores of the participant families with respect to their gender, an independent samples t-test was performed.

The assumptions of independent samples t-test are identified as level of measurement, independence of observations, random sampling, normal distribution, and homogeneity of variance by Pallant (2016). Before proceeding with the independent samples t-test, assumptions were checked. The results of each assumption are presented below.

The dependent variable must be continuous, and the independent variable must be a categorical variable with only two groups to meet the level of measurement assumption for the independent samples t-test (Pallant, 2016). In this analysis, to investigate the differences in family resilience scores for the families with respect to their gender, the family resilience scores were used as a continuous variable. In addition, gender, which has only two groups -male and female- was the categorical independent variable. Therefore, it can be inferred that the level of measurement assumption was met. In this study, the responses of the participant families were not influenced by any other factor to meet the assumption of the independence of observation. Also, sample members were chosen randomly to avoid violating the random sampling assumption.

For normality, the descriptive analysis was conducted and presented at the beginning of this chapter. When the results were examined, it can be seen that although the Kolmogorov-Smirnov value is not higher than .05, the skewness and kurtosis, histograms, normal Q-Q plots, detrended Q-Q plots, and outliers are in the desired range. Therefore, it can be inferred that the normality assumption has not been violated.

Levene's test of equality variance was examined for the homogeneity of variance assumption. The significance level for Levene's test is .009 (see Table 4.19). This is

smaller than the cut-off of .05. This means that the assumption of equal variances has been violated, and the two groups do not have equal variances.

Table 4.19 *Levene's Test for FRAS*

		Levene's Test for Equality of Variances			
		F	Sig.	t	df
FRAS	Equal variances assumed	6.953	.009	-3.713	206
	Equal variances not assumed			-3.646	180.105

FRAS: Family Resilience Assessment Scale

Therefore, the information on the equal variances not assumed section was used. The two-sided significance value was examined to determine whether there is a significant difference between males and females since the research question has a two-tailed hypothesis without indicating any favor for any group. If the value in the Sig. (2-tailed) column is equal to or less than .05, it means there is a significant difference in the mean scores on the dependent variable for each of the two groups (Pallant, 2016). Since the value is lower than .05, it shows a statistically significant difference (see Table 4.20). Thus, it can be concluded that there is a statistically significant difference between family resilience and the gender of the participant parent.

Table 4.20 *t-test for FRAS*

		t-test for Equality of Means							
				Significance				95% Confidence Interval of the Difference	
		t	df	One-Sided p	Two-Sided p	Mean Diff.	Std. Error Diff.	Lower	Upper
FRAS	Equal variances not assumed	-3.646	180.11	<.001	<.001	-8.43	2.31	-12.99	-3.87

FRAS: Family Resilience Assessment Scale

Since there is a difference between these two groups, effect size, which indicates the magnitude of the differences between the groups, should be calculated (Pallant, 2016).

$$\text{Eta-squared } (\eta^2) = \frac{t^2}{t^2 + (N1 + N2 - 2)} = \frac{(-3.65)^2}{(-3.65)^2 + (113 + 95 - 2)} = .06$$

In the current study, the eta squared value is .06, which shows small effect size (Cohen, 1988, 1992). Thus, it can be said that the gender of the parent explains only 6% of the variance in the family resilience score.

An independent samples t-test was conducted to compare the family resilience assessment scores for male and female parents. There was a statistically significant difference in scores for female parents (*M*= 183.06, *SD*= 14.64) and male parents (*M*= 174.63, *SD*= 18.10; *t* (206) = -3.65, *p*<.001 two-tailed) (Table 4.21). The magnitude of the differences in the means (*mean difference* = -8.43, 95% *CI*: -12.993 to -3.868) was small (eta squared = .06).

Table 4.21 *FRAS Results regarding Parent Gender*

	Parent Gender	N	Mean	Std. Deviation
FRAS	Females	113	183.06	14.641
	Males	95	174.63	18.101

FRAS: Family Resilience Assessment Scale

4.3.2. Resilience of the Preschool Children's Families and Educational Status of the Participant Parent

R.Q.2.2. Is there a significant difference between the resilience of preschool children's families regarding the educational status of the parent?

In order to examine the differences in family resilience scores of the participant families with respect to their educational status, a one-way between-groups analysis of variance (ANOVA) was performed.

The assumptions of one-way between-groups ANOVA are stated as the level of measurement, independence of observations, random sampling, normal distribution, and homogeneity of variance by Pallant (2016). Before proceeding with one-way between-groups ANOVA, assumptions were checked. The results of each assumption are presented below.

The dependent variable must be continuous, and the independent variable must be a categorical variable with three or more groups to meet the measurement assumption

level for one-way analysis of variance (ANOVA) (Pallant, 2016). In this analysis, to investigate the differences in family resilience scores of the families with respect to their educational status, the total scores for the family resilience scores were used as a continuous variable. In addition, educational status, comprised of eight groups - primary school graduates, secondary school graduates, high school graduates, associate degree, bachelor's degree, master's degree, doctoral degree, and other- was the categorical independent variable. However, since no participants had a doctoral degree or other categories, the analysis was conducted with the remaining six categories. Therefore, it can be inferred that the level of measurement assumption was met. In this study, the responses of the participant families were not influenced by any other factor to meet the assumption of the independence of observation. Also, sample members were chosen randomly to avoid violating the random sampling assumption.

The descriptive analysis of the dependent variable -family resilience score- was conducted for normality. When the results were examined, it can be seen that although the Kolmogorov-Smirnov value is not higher than .05, the skewness and kurtosis, histograms, normal Q-Q plots, detrended Q-Q plots, and outliers are in the desired range. Therefore, it can be inferred that the normality assumption has not been violated.

Levene's test of equality variance was examined for the homogeneity of variance assumption. The significance level for Levene's test is <.001. Since the value is smaller than the cut-off of .05, the homogeneity of variance assumption has been violated. When the assumption has been violated, one way is adjusting the F-test to correct the problem (Field, 2013) by consulting Welch's F (Welch, 1951) and Brown-Forsythe F values (Brown & Forsythe, 1974). When Welch's F and Brown-Forsythe's F values were computed and examined, the significance level of these tests was also found to be <.001. This means that the assumption of equal variances has been violated again, and these groups had not equal variances. Since an assumption has not been met, a non-parametric technique can be used (Pallant, 2016).

The Kruskal-Wallis Test serves as a non-parametric alternative for a one-way between-group analysis of variance, and it enables comparing scores on a continuous variable among three or more groups (Pallant, 2016). Kruskal-Wallis test has two assumptions: independence of observation and random sampling (Pallant, 2016). In

this present study, the responses of the participant families were not influenced by any other factor to meet the assumption of the independence of observation. Also, sample members were chosen randomly not to violate the random sampling assumption. After the assumptions were checked and all of them had been met, the Kruskal-Wallis test was computed. When the significance level (presented as Asymptotic. Sig.) was examined, this value can be seen as <.001 (see Table 4.22). If this significance level is less than .05, it can be concluded that there is a statistically significant difference in the continuous variable across the groups (Field, 2013; Pallant, 2016). Thus, these results suggest a difference in family resilience scores across six different educational statuses (see Table 4.23).

Table 4.22 *Kruskal-Wallis Test for Family Resilience regarding the Educational Status*

Total N	208
Test Statistic	48.214[a]
Degree Of Freedom	5
Asymptotic Sig.(2-sided test)	<.001

a. The test statistic is adjusted for ties.

Table 4.23 *Hypothesis Test Summary for Family Resilience regarding Educational Status*

Null Hypothesis	Test	Sig.[a,b]	Decision
The distribution of FRAS is the same across categories of Educational Status.	Independent-Samples Kruskal-Wallis Test	<.001	Reject the null hypothesis.

FRAS: Family Resilience Assessment Scale

For further investigation, the six education status groups' Mean Rank were investigated to give information about them with the highest overall ranking corresponding to the continuous variable's highest score. In this case, an inspection of the mean ranks for the groups suggests that parents with master's degrees had the highest family resilience scores (Mean Rank= 178.04), followed by bachelor's degrees (Mean Rank= 116.23), associate degree (Mean Rank= 115.10), high school graduates (Mean Rank= 92.16), secondary school graduates (Mean Rank= 57.27), and primary school graduates (Mean Rank= 35.95) reporting the lowest.

A Kruskal-Wallis Test revealed a statistically significant difference in family resilience scores across six educational statuses (primary school graduates, n = 11:

secondary school graduates, n = 13: high school graduates, n = 64: associate degree, n = 47: bachelor's degree, n = 60, master's degree, n = 13), $\chi 2$ (5, n = 208) = 48.21, p <.001. Parents with master's degrees recorded a higher median score (*Md* = 206) than other five educational statuses: bachelor's degree (*Md* = 187.5), associate degree (*Md* = 186), high school graduates (*Md* = 180), secondary school graduates (*Md* = 169), and primary school graduates (*Md* = 142) (see Table 4.24).

Table 4.24 *Median FRAS Scores regarding Parent Educational Status*

Parent Educational Status	N	Median
Primary School Graduates	11	142.00
Secondary School Graduates	13	169.00
High School Graduates	64	180.00
Associate degree	47	186.00
Bachelor's Degree	60	187.50
Master's Degree	13	206.00
Total	208	185.00

FRAS: Family Resilience Assessment Scale

4.3.3. Resilience of Preschool Children's Families and Family Income

R.Q.2.3. Is there a significant difference between the resilience of preschool children's families regarding the family income?

In order to examine the differences in family resilience scores of the participant families with respect to their family income, a one-way between-groups analysis of variance (ANOVA) was performed.

The assumptions of one-way between-groups ANOVA are stated as the level of measurement, independence of observations, random sampling, normal distribution, and homogeneity of variance by Pallant (2016). Before proceeding with one-way between-groups ANOVA, assumptions were checked. The results of each assumption are presented below.

The dependent variable must be continuous, and the independent variable must be a categorical variable with three or more groups to meet the measurement assumption level for one-way analysis of variance (ANOVA) (Pallant, 2016). In this analysis, in order to investigate the differences in family resilience scores of the families with respect to their family income, the total scores for the family resilience scores were used as a continuous variable. In addition, the family income was the categorical

independent variable, which has five groups: low (0-5000 Turkish Liras), *middle* (5001-10000 Turkish Liras), *middle-high* (10001-15000 Turkish Liras), *high* (15001+ Turkish Liras), and *other*. However, since no participants chose the 'other' category-, the analysis was conducted with the remaining four categories. Therefore, it can be inferred that the level of measurement assumption was met. In this study, the responses of the participant families were not influenced by any other factor to meet the assumption of the independence of observation. Also, sample members were chosen randomly to avoid violating the random sampling assumption.

The descriptive analysis of the dependent variable -family resilience score- was conducted for normality. When the results were examined, it can be seen that although the Kolmogorov-Smirnov value is not higher than .05, the skewness and kurtosis, histograms, normal Q-Q plots, detrended Q-Q plots, and outliers are in the desired range. Therefore, it can be inferred that the normality assumption has not been violated.

Levene's test of equality variance was examined for the homogeneity of variance assumption. The significance level for Levene's test is <.001. Since the value is smaller than the cut-off of .05, the homogeneity of variance assumption has been violated. When the assumption has been violated, one way is adjusting the F-test to correct the problem (Field, 2013) by consulting Welch's F (Welch, 1951) and Brown-Forsythe F (Brown & Forsythe, 1974). When Welch's F and Brown-Forsythe's F values were computed and examined, the significance level of these tests was also <.001. This means that the assumption of equal variances has been violated again, and these groups had not equal variances. Since an assumption has not been met, a non-parametric technique can be used (Pallant, 2016).

The Kruskal-Wallis Test is the non-parametric alternative to a one-way between-group analysis of variance, and it allows for comparing scores on a continuous variable between three or more groups (Pallant, 2016). Kruskal-Wallis test has two assumptions: independence of observation and random sampling (Pallant, 2016). In this study, the responses of the participant families were not influenced by any other factor to meet the assumption of the independence of observation. Also, sample members were chosen randomly to avoid violating the random sampling assumption. After the assumptions were checked and all of them had been met, the Kruskal-Wallis

test was computed. When the significance level (presented as Asymptotic. Sig.) was examined, this value can be seen as .013 (see Table 4.25). Since this significance level is less than .05, it can be concluded that there is a statistically significant difference in family resilience scores across four different family income groups (see Table 4.26).

Table 4.25 *Kruskal-Wallis Test for Family Resilience regarding Family Income*

Total N	208
Test Statistic	34.922[a]
Degree Of Freedom	3
Asymptotic Sig.(2-sided test)	<.001

a. The test statistic is adjusted for ties.

Table 4.26 *Hypothesis Test Summary for Family Resilience regarding Family Income*

Null Hypothesis	Test	Sig.[a,b]	Decision
The distribution of FRAS is the same across categories of Total Income.	Independent-Samples Kruskal-Wallis Test	<.001	Reject the null hypothesis.

FRAS: Family Resilience Assessment Scale

For further investigation, the four income groups' Mean Rank were investigated to give information about the groups with the highest overall ranking corresponding to the continuous variable's highest score. In this case, an inspection of the mean ranks for the groups suggests that high income families (+15001 TL) had the highest family resilience scores (Mean Rank= 142.43), followed by middle-high incomes (10001-15000 TL) (Mean Rank= 137.04), middle incomes (5001-10000 TL) (Mean Rank= 84.50), and low incomes (0-5000 TL) (Mean Rank= 90.50) reporting the lowest.

A Kruskal-Wallis Test revealed a statistically significant difference in family resilience scores across four family income groups (low, $n = 64$: 5001-10000 TL, $n = 75$: middle, $n = 41$: 15001+ TL, $n = 28$), $\chi 2$ (3, $n = 208$) = 34.92, $p<.001$. Families who had high income recorded a higher median score ($Md = 195$) than the other three family income groups: middle-high ($Md = 188$), middle ($Md = 179$), and low ($Md = 179$) (see Table 4.27).

Table 4.27 *Median FRAS Scores regarding Family Income*

Family Income	N	Median
Low	64	179.00
Middle	75	179.00

Table 4.27 (continued)

Middle-High	41	188.00
High	28	195.00
Total	208	185.00

4.4. Resilience of the Preschool Teachers

After the preliminary analyses, the descriptive statistics for (i.e., the means, standard deviations, minimum, and maximum values) the study variables were provided to answer the third research question as follows (see Table 4.28).

R.Q.3.What is the resilience of preschool children's teachers?

Table 4.28 *Descriptive Statistics of RSA*

	N	Minimum	Maximum	Mean	Std. Deviation
RSA	40	128	161	146.24	10.962

RSA: Resilience Scale for Adults

Descriptive statistics results for Psychological Resilience Scale for Adults (RSA) showed that out of a maximum 165-point scale, teachers' minimum score is 128 while the maximum is 161. Also, the results presented that the mean of the scores in RSA is 146.24. When the mean value is examined, it can be inferred that teachers had a high-level of resilience (*M*= 146.24, *SD*= 10.96, *Min*= 128, *Max*= 161).

4.4.1. Resilience of the Preschool Children's Teachers and Teacher's Educational Status

R.Q.3.1. Is there a significant difference between the resilience of preschool children's teacher regarding the teacher's educational status?

In order to examine the differences in psychological resilience of adult scores of the teachers with respect to their educational status, a one-way between-groups analysis of variance (ANOVA) was performed.

The assumptions of one-way between-groups ANOVA are stated as the level of measurement, independence of observations, random sampling, normal distribution, and homogeneity of variance by Pallant (2016). Before proceeding with one-way between-groups ANOVA, assumptions were checked. The results of each assumption are presented below.

The dependent variable must be continuous, and the independent variable must be a categorical variable with three or more groups to meet the measurement assumption level for one-way analysis of variance (ANOVA) (Pallant, 2016). In this analysis, to investigate the differences in the teachers' psychological resilience of adult scores with respect to their educational status, the total scores for the psychological resilience of adult scores were used as a continuous variable. In addition, the educational status, which has six groups - high school graduates, associate degree, bachelor's degree, master's degree, doctoral degree, and other- was the categorical independent variable. However, since there were no high school graduates, doctoral degrees, or other category participants, the analysis was conducted with the remaining three categories. Therefore, it can be inferred that the level of measurement assumption was met. In this present study, the responses of the participant teachers were not influenced by any other factor to meet the assumption of the independence of observation. Also, sample members were chosen randomly so as not to violate the random sampling assumption.

The descriptive analysis of the dependent variable -psychological resilience of adult scores- was conducted for normality. When the results were examined, it can be seen that although the Kolmogorov-Smirnov value is not higher than .05, the skewness and kurtosis, histograms, normal Q-Q plots, detrended Q-Q plots, and outliers are in the desired range. Therefore, it can be inferred that the normality assumption has not been violated.

Levene's test of equality variance was examined for the homogeneity of variance assumption. The significance level for Levene's test is <.001 (see Table 4.29). This is smaller than the cut-off of .05. This means that the assumption of equal variances has been violated, and the two groups do not have equal variances. When the assumption has been violated, one way is adjusting the F-test to correct the problem (Field, 2013) by consulting Welch's F (Welch, 1951) and Brown-Forsythe F (Brown & Forsythe, 1974). However, robust tests of equality of means cannot be performed since at least one group has zero variance. Therefore, the assumption of equal variances has been violated, and these groups had not equal variances. Since an assumption has not been met, a non-parametric technique can be used (Pallant, 2016). The Kruskal-Wallis Test is the non-parametric alternative to a one-way between-group analysis of variance, and it allows for comparing scores on a continuous variable between three or more groups

(Pallant, 2016). Kruskal-Wallis test has two assumptions: independence of observation and random sampling (Pallant, 2016). In this study, the responses of the participant teachers were not influenced by any other factor to meet the assumption of the independence of observation. Also, sample members were chosen randomly to avoid violating the random sampling assumption. After the assumptions were checked and all of them had been met, the Kruskal-Wallis test was computed. When the significance level (presented as Asymptotic. Sig.) was examined, this value can be seen as .036 (see Table 4.29). Since this significance level is less than .05, it can be concluded that there is a statistically significant difference in teacher resilience overall scores across three educational groups (see Table 4.30).

Table 4.29 *RSA Tests of Homogeneity of Variances*

	Levene Statistic	df1	df2	Sig.
RSA	8.075	2	37	.001

RSA: Resilience Scale for Adults

Table 4.30 *Kruskal-Wallis Test for RSA*

Total N	40
Test Statistic	6.642[a]
Degree Of Freedom	2
Asymptotic Sig.(2-sided test)	.036

For further investigation, the three groups' Mean Rank were investigated to give information about the groups with the highest overall ranking corresponding to the continuous variable's highest score. In this case, an inspection of the mean ranks for the groups suggests that teachers with a master's degrees had the highest psychological resilience scores (Mean Rank= 38.50), followed by bachelor's degrees (Mean Rank= 21.59), and an associate degree (Mean Rank= 16.75).

A Kruskal-Wallis Test revealed a statistically significant difference in teacher resilience scores across three educational statuses (associate degree, $n = 16$: bachelor's degree, $n = 22$, master's degree, $n = 2$), $\chi 2$ (2, $n = 40$) = 6.64, p =.036. Teachers with master's degrees recorded a higher median score ($Md = 161$) than bachelor's degree ($Md = 140$) and associate degree ($Md = 136$) (see Table 4.31).

Table 4.31 *Median RSA Scores regarding Teacher Educational Status*

Educational Status	N	Median
Associate degree	16	136.00
Bachelor's degree	22	140.00
Master's degree	2	161.00
Total	40	140.50

RSA: Resilience Scale for Adults

4.4.2. Resilience of the Preschool Teachers and Their Income

R.Q.3.2. Is there a significant difference between the resilience of preschool children's teachers regarding the teacher's income?

In order to examine the differences in the resilience of preschool teachers with respect to their income, independent samples t-test was performed.

The assumptions of independent samples t-test are identified as level of measurement, independence of observations, random sampling, normal distribution, and homogeneity of variance by Pallant (2016). Before proceeding with the independent samples t-test, assumptions were checked. The results of each assumption are presented below.

The dependent variable must be continuous, and the independent variable must be a categorical variable with only two groups to meet the level of measurement assumption for the independent samples t-test (Pallant, 2016). In this analysis, to investigate the differences in the teachers' psychological resilience of adult scores with respect to their income, the total scores for the psychological resilience of adult scores were used as a continuous variable. In addition, although the income had four categories in the demographic form, only two categories, middle (5000-8000 Turkish Liras) and high (8001-10000 Turkish Liras) were marked by the teachers. Therefore, family income was the categorical independent variable in this analysis. Therefore, it can be inferred that the level of measurement assumption was met. In this present study, the responses of the participant teachers were not influenced by any other factor to meet the assumption of the independence of observation. Also, sample members were chosen randomly to avoid violating the random sampling assumption.

For normality, the descriptive analysis was conducted and presented at the beginning of this chapter. When the results were examined, it can be seen that although the

Kolmogorov-Smirnov value is not higher than .05, the skewness and kurtosis, histograms, normal Q-Q plots, detrended Q-Q plots, and outliers are in the desired range. Therefore, it can be inferred that the normality assumption has not been violated.

Levene's test of equality variance was examined for the homogeneity of variance assumption. The significance level for Levene's test is .233 (see Table 4.32). This is greater than the cut-off of .05. This means that the assumption of equal variances has not been violated, and the two groups have equal variances.

Table 4.32 *Levene's Test for Equality of Variances of RSA*

		Levene's Test for Equality of Variances	
		F	Sig.
RSA	Equal variances assumed	1.470	.233

RSA: Resilience Scale for Adults

If the value in the Sig. (2-tailed) column is equal to or less than .05, it means there is a significant difference in the mean scores on the dependent variable for each of the two groups (Pallant, 2016). Since the value is <.001, lower than .05 (see Table 4.33), it shows a statistically significant difference. Thus, it can be concluded that there is a statistically significant difference between the teachers' resilience and their income.

Table 4.33 *t-test for RSA*

		Levene's Test for Equality of Variances		t-test for Equality of Means					
					Significance				95% Confidence Interval of the Difference
		F	Sig.	t	One-Sided p	Two-Sided p	Mean Diff.	Std. Error Diff.	Lower	Upper
RSA	Equal variances assumed	1.470	.233	-4.23	<.001	<.001	-13.363	3.158	-19.76	-6.97

RSA: Resilience Scale for Adults

Since there is a difference between these two groups, effect size, which indicates the magnitude of the differences between the groups, should be calculated (Pallant, 2016).

$$\text{Eta-squared } (\eta^2) = \frac{t^2}{t^2 + (N1 + N2 - 2)} = \frac{(-4.23)^2}{(-4.23)^2 + (14+26-2)} = .32$$

In the current study, the eta squared value is .32, which shows a medium effect size (Cohen, 1988, 1992). Thus, income explains 32% of the variance in teachers' resilience scores.

An independent samples t-test was conducted to compare the preschool teacher's resilience scores for income. There was a statistically significant difference in scores of the teachers who had middle income (*M* = 135.71, *SD* = 9.79) and high income (*M* = 149.08, *SD* = 9.39; *t* (38) = -4.23, *p* <.001 two-tailed) (Table 4.34). The magnitude of the differences in the means (*Mean Difference* = -13.63, 95% *CI*: -19.756 to -6.970) was medium (eta squared = .32).

Table 4.34 *Teacher Resilience Scores regarding Income*

	Total Income	N	Mean	Std. Deviation
RSA	Middle	14	135.71	9.793
	High	26	149.08	9.385

RSA: Resilience Scale for Adults

4.5. Preschool Children's Metacognitive Skills and the Resilience of Their Families

Prior to conducting a correlation analysis, creating a scatterplot may be useful to assess violations of the linearity and homoscedasticity assumptions (Pallant, 2016). Also, examining the scatterplots can offer a clearer understanding of the association between the variables (Pallant, 2016). Following the preliminary analyses, descriptive statistics (means, standard deviations, minimum, and maximum values) of the study variables were presented to address the fourth research question (see Table 4.35).

R.Q.4. Is there a relationship between preschool children's metacognitive skills and their families' resilience?

Table 4.35 *Descriptive Statistics regarding Metacognitive Skill Tasks and Family Resilience*

	Minimum	Maximum	Mean	Std. Deviation
Metacognitive Skills Easy Task	2.38	15.51	7.0557	3.49930
Metacognitive Skills Hard Task	3.00	15.27	6.8348	2.54842

Table 4.35 (continued)

CHILD 3-5	33	72	53.88	9.591
FRAS	137	208	179.21	16.807

Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute; FRAS: Family Resilience Assessment Scale

Pallant (2016) defines *correlation analysis* as a method used to measure the strength and direction of the linear relationship between two variables. However, before conducting this analysis, several assumptions should be checked, including the level of measurement, related pairs, independence of observation, normality of distribution, linearity, and homoscedasticity assumptions (Pallant, 2016; Tabachnick & Fidell, 2013). The findings related to each assumption for the correlation analysis are presented below.

To analyze the degree and direction of the linear association between two variables, both the independent and dependent variables should be continuous (Pallant, 2016). In this analysis, to investigate the relationship between the metacognitive skills of preschool children and their families' resilience scores were used as continuous variables. Thus, it can be inferred that the level of measurement assumption was met. Also, each subject provided a score on both variables and from the same object, which satisfied the assumption. In this present study, the responses of the participant families were not influenced by any other factor to meet the assumption of the independence of observation.

For normality, the descriptive analysis was conducted and presented at the beginning of this chapter. When the results were examined, it can be seen that although the Kolmogorov-Smirnov value is not higher than .05, the skewness and kurtosis, histograms, normal Q-Q plots, detrended Q-Q plots, and outliers are in the desired range. Therefore, it can be inferred that the normality assumption has not been violated.

The scatter plot graph was examined for linearity assumption, and a straight line was ensured. Therefore, it can be inferred from the results that the linearity assumption is met. In addition to linearity, the homoscedasticity assumption was checked by examining the same graph. Its start and finish points looked similar regarding dispersion (a cigar shape along its length) was considered; thus, the homoscedasticity assumption is met.

Correlations between metacognitive skills and resilience of preschool children's families are presented in Table 4.35. In both the easy and the hard tasks, metacognitive skills were positively related to family resilience. The relationship between the metacognitive skills of preschool children and their families' resilience was investigated using Pearson product-moment correlation coefficient (see Table 4.36). A positive correlation was found between the dependent and independent variables in all cases. To calculate how much variance these variables share; the coefficient of determination was calculated for each correlation using the r^2 x 100 formula. Among these variables, CHILD 3-5 scores had the strongest correlation with family resilience (.47). According to Cohen's guideline (1988, 1992), the strength of the relationship is nearly large. Also, it can be inferred that CHILD 3-5 scores share nearly 22% of the variance with family resilience ($.47^2$ x 100).

In terms of family resilience, small correlations were found in metacognitive skills in the easy task (.21) and the hard task (.21) (Cohen, 1988; 1992). Results also showed that family resilience scores help explain nearly 4% of the variance in children's metacognitive skills in the easy task and the hard task.

Table 4.36 *Correlations regarding Metacognitive Skill Tasks and Family Resilience*

	Metacognitive Skills Easy Task	Metacognitive Skills Hard Task	CHILD	FRAS
Metacognitive Skills Easy Task				
Metacognitive Skills Hard Task	.14*			
CHILD 3-5	.30**	.20**		
FRAS	.21**	.21**	.47**	

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute; FRAS: Family Resilience Assessment Scale

4.6. Preschool Children's Metacognitive Skills and Resilience of Their Preschool Teachers

Prior to conducting a correlation analysis, creating a scatterplot may be useful to assess violations of the linearity and homoscedasticity assumptions (Pallant, 2016).

Additionally, examining the scatterplots can offer a clearer understanding of the association between the variables (Pallant, 2016). Following the preliminary analyses, the descriptive statistics (i.e.,means, standard deviations, minimum, and maximum values) of the study variables were presented to answer the fifth research question (see Table 4.37).

R.Q.5. Is there a relationship between preschool children's metacognitive skills and their preschool teachers' resilience?

Table 4.37 *Descriptive Statistics regarding Metacognitive Skill Tasks and Teacher Resilience*

	Minimum	Maximum	Mean	Std. Deviation
Metacognitive Skills Easy Task	2.38	15.51	7.0557	3.49930
Metacognitive Skills Hard Task	3.00	15.27	6.8348	2.54842
CHILD 3-5	33	72	53.88	9.591
RSA	128	161	146.24	10.962

Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute; RSA: Resilience Scale for Adults

The level of measurement, related pairs, independence of observation, normality of distribution, linearity, and homoscedasticity assumptions in the current study need to be verified before the analysis is carried out (Pallant, 2016; Tabachnick & Fidell, 2019). The correlation analysis findings for each supposition are listed below.

To determine the magnitude and direction of the linear association between two variables, both the dependent and independent variables should be continuous (Pallant, 2016). In this analysis, to investigate the relationship between the metacognitive skills of preschool children and their preschool teachers' resilience scores were used as continuous variables. Therefore, it can be inferred that the level of measurement assumption was met. Also, each subject provided a score on both variables and from the same object, which satisfied the assumption. In this present study, the responses of the participant teachers were not influenced by any other factor to meet the assumption of the independence of observation.

For normality, the descriptive analysis was conducted and presented at the beginning of this chapter. When the results were examined, it can be seen that although the Kolmogorov-Smirnov value is not higher than .05, the skewness and kurtosis, histograms, normal Q-Q plots, detrended Q-Q plots, and outliers are in the desired

range. Therefore, it can be inferred that the normality assumption has not been violated. The scatter plot graph was examined for linearity assumption, and a straight line was ensured. Therefore, it can be inferred from the results that the linearity assumption is met. In addition to linearity, the homoscedasticity assumption was checked by examining the same graph. Its start and finish points looked similar regarding dispersion (a cigar shape along its length) was considered; thus, the homoscedasticity assumption is met.

Correlations between metacognitive skills and the resilience of the preschool teachers are presented in Table 4.37. In both the easy (oval) and the hard (goggle) tasks, metacognitive skills were positively related with teacher resilience. The relationship between the metacognitive skills of preschool children and the resilience of their preschool teachers was investigated using Pearson product-moment correlation coefficient (see Table 4.38). A positive correlation was found between the dependent and independent variables in all cases. In order to calculate how much variance these variables share; the coefficient of determination was calculated for each correlation using the r^2 x 100 formula. Among these variables, CHILD 3-5 scores had the strongest correlation with the preschool teacher resilience with a value of .52. According to Cohen's guideline (1988, 1992), the strength of the relationship is large. Also, it can be inferred that CHILD 3-5 scores share 27% of the variance in teacher resilience scores ($.52^2$ x 100).

In terms of preschool teacher's resilience, the strengths of the relationships were small. Teacher resilience has a .22 correlation with metacognitive skills in the easy (oval) task and .18 with the hard (goggle) task. Thus, it can be said that teacher resilience scores help to explain 5% of the variance in children's metacognitive skills in the easy (oval) task and 3% in the hard (goggle) task.

Table 4.38 *Correlations regarding Metacognitive Skill Tasks and Teacher Resilience*

	Metacognitive Skills Easy Task	Metacognitive Skills Hard Task	CHILD	RSA
Metacognitive Skills Easy Task				
Metacognitive Skills Hard Task	.14*			

Table 4.38 (continued)

CHILD 3-5	.30**	.20**	
RSA	.22**	.18**	.52**

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Easy Task: Oval shape; Hard Task: Goggle shape; Metacognitive skill rates are total rates per minute; RSA: Resilience Scale for Adults

4.7. Results for the Proposed Model

In order to address the final research question, a path model was constructed and assessed using a sequence of path analyses to evaluate its compatibility with the data.

R.Q.6. What are the direct and indirect relationships between the metacognitive skills of preschool children, their family resilience, and their preschool teacher's resilience regarding educational status, income, and gender?

The proposed model prepared in light of the relevant literature (presented in Chapter 2) and the results of the findings of this study (previously presented in this chapter) formed the basis of the development of a path analytic structural model. The hypothesized relationships within the proposed model were then tested using the IBM SPSS AMOS Version 26 program.

In the model there were mainly six independent or exogenous variables, namely Parent Gender (PG), Parent Educational Status (PES), Family Income (FI), Child Gender (CG), Teacher Educational Status (TES), and Teacher Income (TI). On the other hand, there were five dependent or endogenous variables in the model, namely Metacognitive Skills Easy Task (MSE), Metacognitive Skills Hard Task (MSH), Children's Independent Learning Development (CHILD 3-5) Checklist, Family Resilience (FRAS) and Teacher Resilience (RSA).

The proposed model, which functioned as an initial model to address the sixth research question, included paths through the literature review by showing paths from exogenous to mediators, from mediators to endogenous, and from exogenous to

endogenous. Through the path analysis, the initial model was tested, and the results presented below.

4.7.1. Results for the Initial Model

After the initial model was established (see Figure 4.1), the fitness of the model was assessed by considering the fit indices and cut-off values.

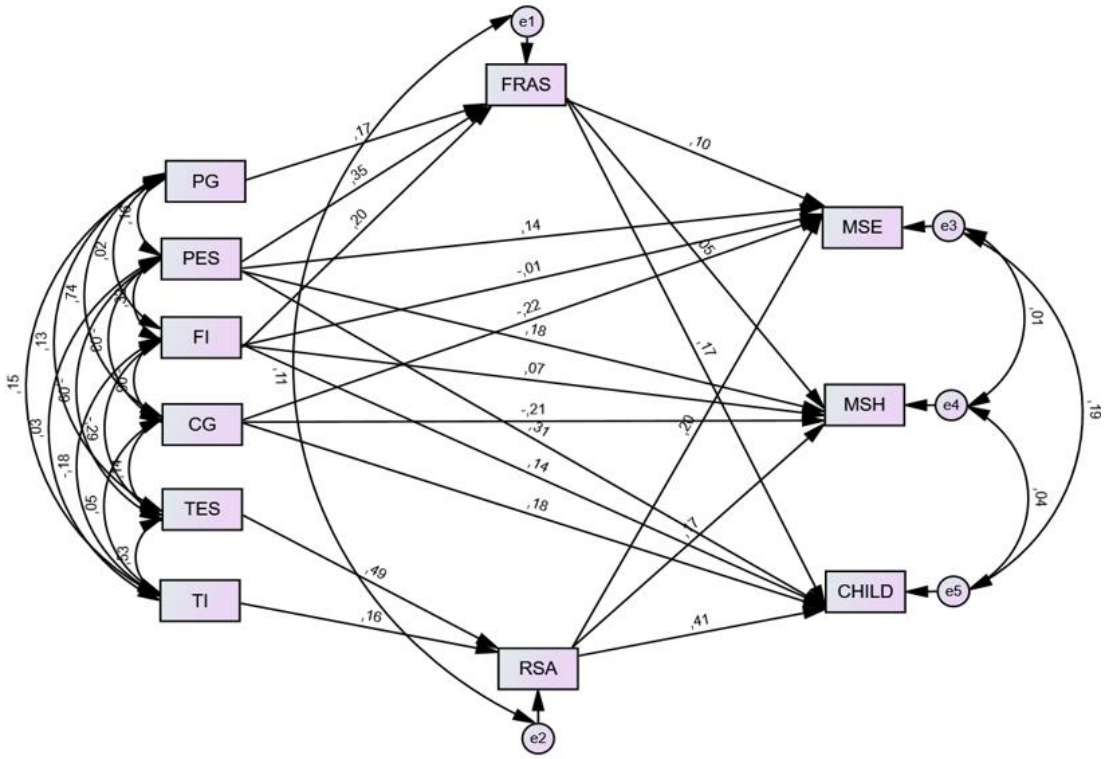


Figure 4.1 Initial Model

PG: parent gender, PES: parent educational status, FI: family income, CG: child gender; TES: teacher educational status, TI: teacher income, FRAS: family resilience, RSA: teacher resilience, MSE: metacognitive skills easy task, MSH: metacognitive skills hard task, CHILD: metacognitive skills

Based on Table 4.39, the proposed model was found to have a Chi-square value of 114.88 ($p<.05$) with 16 degrees of freedom. Nevertheless, the Chi-square test relies on the assumption of multivariate normality of the observed variable (Schermelleh-Engel et al., 2003), and it can be influenced by the sample size (Tabachnick & Fidell, 2019). Thus, using the ratio of Chi-square to degrees of freedom is suggested rather than just the Chi-square value to assess the model fit (Kelloway, 1998). According to Kelloway (1998), a ratio of less than five indicates a good fit. In the final structural model, the ratio of Chi-square to degrees of freedom was $\chi^2/df = 7.18$, showing a poor fit. Similarly, the CFI value of .87 indicated almost an acceptable fit (Brown, 2015; Hu &

Bentler, 1999; Kline, 2016). On the other hand, the SRMR value was .08, indicating a good fit (Hu & Bentler, 1999).

The TLI, which measures how well a proposed model matches actual data, was found to be .54. According to Hu and Bentler (1999), TLI values between .80 and .90 are considered acceptable. However, TLI values can be influenced by factors such as sample size and model complexity, so they should be interpreted with caution (Marsh et al., 2004). Additionally, GFI was reported as .92, which indicated a good fit (Marsh et al., 2004). Nevertheless, the AGFI value was .66 for the final model, not indicating an acceptable fit (Hooper et al., 2008; Hu & Bentler, 1999). Overall, the findings suggest that the initial model had a slightly acceptable fit to the data, as indicated by various model fit indices (χ^2 = 114.88, df = 16, χ^2/df = 7.18, CFI = .87, SRMR = .08, TLI = .54, GFI = .92, AGFI = .66). Therefore, the data provided only weak support for the final model.

Table 4.39 *Fit Indices, Cut-off Values and Model Values*

	Fit Indices	Cut-off Values	Model Values
χ^2	Chi-square	The smaller the better	114.88
df	Degrees of freedom	-	16
χ^2/df	Normed Chi-square Fit Index	≤ 5	7.18
CFI	Comparative Fit Index	≥ .90	.87
SRMR	Standardized Root Mean Square Residual	≤ .08 to .10	.08
TLI	Tucker-Lewis Index	≥ .80 to .90	.54
GFI	Goodness of Fit Index	≥ .90	.92
AGFI	Adjusted Goodness of Fit Index	≥ .80 to .90	.66

(Arbuckle, 2019; Brown, 2015; Çokluk et al., 2021; Hu & Bentler, 1999; Kelloway, 1998; Kline, 2016; Schumacker & Lomax, 2010; Sümer, 2000; Tabachnick & Fidell, 2013; Thompson, 2004)

Since the fit indices of the proposed model were not deemed acceptable, modification indices and the standardized residuals were examined to address whether there was model misspecification (Byrne, 2016). According to Byrne (2016), modification indices less than 10.00 are generally regarded unimportant since adjusting a fixed

parameter based on such a small value would not significantly affect the overall model fit. There was just one modification index with a value greater than 10.00 which was 13.47. However, adjusting this index would not have significantly impacted the model fit, so no changes were made to the model indices (Byrne, 2016).

Standardized residuals refer to the residuals obtained by dividing the fitted residuals by their standard errors, which are determined by a large sample size (Jöreskog & Sörbom, 1993). This technique provides an estimation of how many standard deviations the observed residuals deviate from zero residuals, which would be present in the case of a perfectly fitting model. If their values exceed 2.58, they are considered significant, according to Jöreskog and Sörbom (1993).

When the values presented in Table 4.40 are examined, it can be seen that there are only two variables exceeding the cut-off value of 2.58, which are teacher income (TI) and parent educational status (PES). Consequently, they reflect on the covariance between TI and FRAS; in addition to PES and the variables of RSA, CHILD, and MSH. Thus, it can be concluded that the statistically significant difference to consider here is in the covariance between TI and FRAS, and PES and RSA. As a result, TI and PES were deleted from the path diagram to create a more reliable model since the absolute values of most standardized covariances of residuals should be in the cut-off value to have a correct model (Byrne, 2016).

Following the elimination process, guided by the path analysis findings, the original model was simplified by removing any paths that were not statistically significant. This method was used to improve the model's simplicity and comprehensibility (Kline, 2016). A final model was generated and presented in Figure 4.2.

4.7.2. Results for the Final Model

The comparison of the models revealed that the chi-square change was significant ($\Delta \chi^2 = 59.70$, $\Delta df = 3$, $p<.001$), and there was a considerable change in AIC ($\Delta AIC = 95.70 > 10$; Burnham & Anderson, 2003). The results of the path analysis showed that the final model fitted the data better ($\chi^2 = 55.18$, $df = 13$, $\chi^2/df = 4.25$, CFI = .92, SRMR = .07, TLI = .82, GFI = .95, AGFI = .82). The final model is illustrated in Figure 4.2, while the results of the path analysis were summarized in Table 4.41 and Table 4.42, respectively.

Table 4.40 *Standardized Residual Covariances*

	TI	TES	CG	FI	PES	PG	RSA	FRAS	CHILD	MSE	MSH
TI	.000										
TES	.000	.000									
CG	.000	.000	.000								
FI	.000	.000	.000	.000							
PES	.000	.000	.000	.000	.000						
PG	.000	.000	.000	.000	.000	.000					
RSA	.494	.232	1.980	1.048	3.760	2.565	.308				
FRAS	5.026	2.498	-.455	.123	.418	.308	2.027	.341			
CHILD	-1.891	-.707	.714	.445	1.487	.732	2.319	1.672	1.411		
MSE	-1.111	.434	.305	.200	.695	1.240	.856	.861	.769	.226	
MSH	.334	.796	.296	.183	.637	-.421	.752	.878	.724	.291	.188

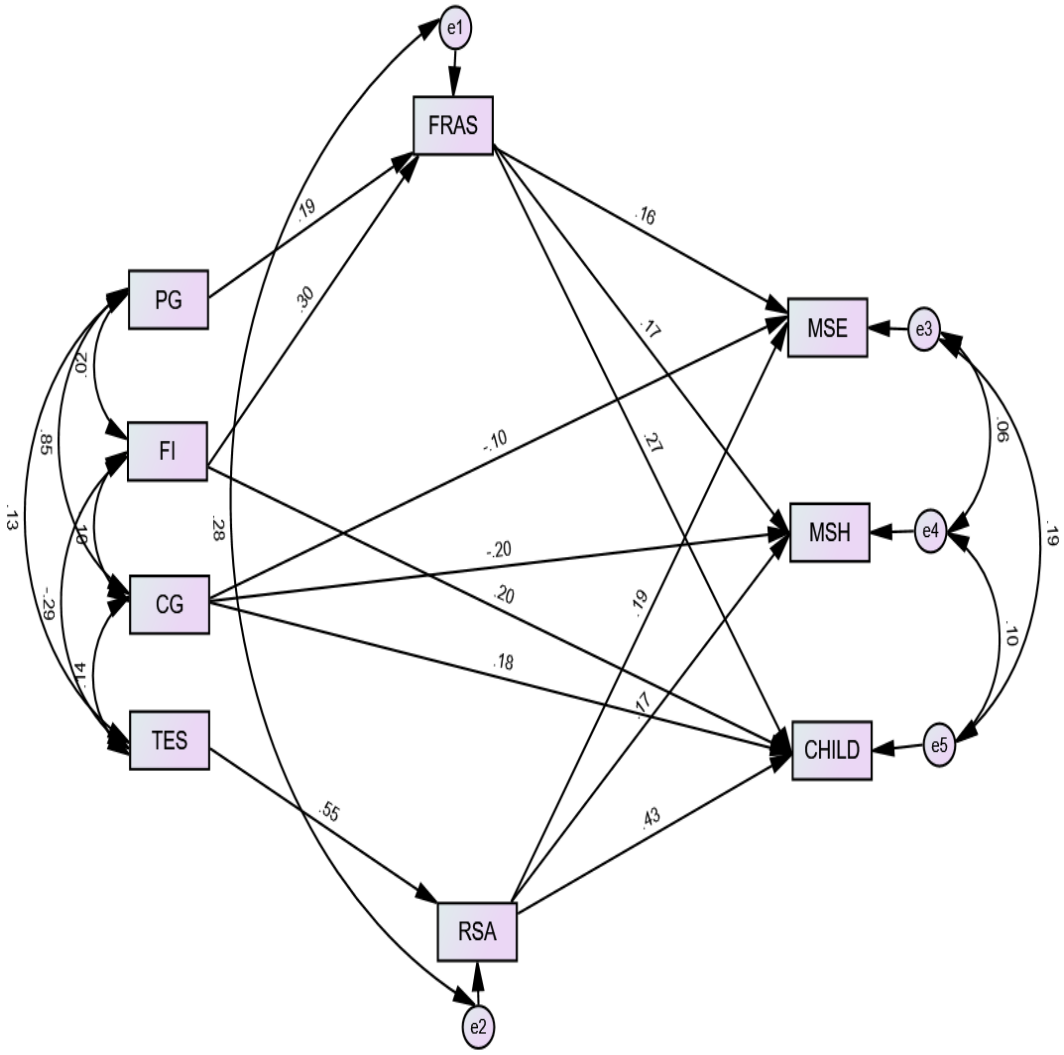


Figure 4.2 Final Model

PG: parent gender, FI: family income, CG: child gender; TES: teacher educational status, FRAS: family resilience, RSA: teacher resilience, MSE: metacognitive skills easy task, MSH: metacognitive skills hard task, CHILD: metacognitive skills

4.7.2.1. Direct Relationships among the Variables

Path coefficients were analyzed to investigate how the variables in the study are directly related to each other at p<.05. The results, shown in Table 4.41, indicate that gender of the parent and family income were significant predictors of their level of resilience. Indeed, parent gender and family income positively predicted FRAS (β= .19, β = .30, respectively). More clearly, family income was a strong supporter of resilience in families; families whose income was higher had higher resilience. Also, female parents had higher resilience than males. Furthermore, family income also

positively and significantly predicted the outcome of the CHILD 3-5 Checklist (β=.19), which means that children of families with higher income received higher scores. Furthermore, child gender significantly predicted MSE (β= -.22), MSH (β= -.23), and CHILD (β= .16). While boys had higher scores in metacognitive skills in the easy and the hard tasks, girls obtained higher scores on the CHILD 3-5 Checklist.

Importantly, teacher educational status had the most significant and positively correlated relationship with teacher resilience (β = .56). This result indicated that teachers with higher educational backgrounds had higher resilience.

Moreover, family resilience significantly and positively predicted MSE (β= .15), MSH (β= .16), and CHILD (β= .28). This means children whose families were more resilient had higher scores in metacognitive skills in the easy and the hard tasks, and CHILD 3-5 Checklist.

Lastly, the results indicated that teacher resilience significantly and positively correlated with MSE (β= .21), MSH (β= .17), and CHILD (β= .43). These results suggested that children who belonged to a classroom with more resilient teachers had higher scores in metacognitive skills in both the easy and the hard task. They also obtained better scores on the CHILD 3-5 Checklist.

Table 4.41 *Parameter Estimates of Direct Relationships Between the Study Variables*

Exogenous variable	Endogenous variable	SE	β	Lower	Upper
Parent gender (PG)	Family resilience	.07	.19**	.07	.33
Family income (FI)	Family resilience	.06	.30**	.19	.42
	CHILD 3-5	.06	.19**	.06	.28
Child gender (CG)	Metacognitive skills easy task	.06	-.22**	-.36	-.11
	Metacognitive skills hard task	.07	-.23**	-.35	-.08
	CHILD 3-5	.06	.16**	.04	.26

Table 4.41 (continued)

Teacher educational status (TES)	Teacher resilience	.06	.56**	.44	.66
Family resilience (FRAS)	Metacognitive skills easy task	.06	.15*	.02	.25
	Metacognitive skills hard task	.07	.16*	.04	.31
	CHILD 3-5	.06	.28**	.16	.41
Teacher resilience (RSA)	Metacognitive skills easy task	.07	.21**	.06	.35
	Metacognitive skills hard task	.08	.17*	.02	.31
	CHILD 3-5	.06	.43**	.30	.55

* Significant at the 0.05 level (2-tailed).
** Significant at the 0.01 level (2-tailed).

4.7.2.2. Indirect Relationships among the Variables

Standardized indirect effects were analyzed to explore the indirect relationships between the variables in the study. Table 4.42 presents the path analysis results regarding the indirect relationships in the model. While all indirect relationships were significant at $p<.05$ some of them were not significant at $p<.01$. In general, family resilience (FRAS) and teacher resilience (RSA) were the mediators in the model.

Parent gender significantly predicted MSE (β= .03), MSH (β= .03), and CHILD (β= .05). These results showed that the relationships between parent gender and metacognitive skills in the easy and the hard task, and CHILD 3-5 Checklist were fully mediated by family resilience (FRAS). Similarly, these endogenous variables were also significantly and positively predicted by family income. The relationship between family income and MSE (β= .05), MSH (β= .05), and CHILD (β= .08) were partially mediated by family resilience (FRAS).

Moreover, teacher educational status was also significantly correlated with endogenous variables. TES significantly and positively predicted MSE (β= .12), MSH

(β= .10), and CHILD (β= .24). These results suggested that the relationships between TES and MSE, MSH, and CHILD were fully mediated by teacher resilience (RSA).

Table 4.42 *Parameter Estimates of Indirect Relationships Between the Study Variables*

Exogenous variable	Endogenous variable	Indirect effect
Parent gender (PG)	Metacognitive skills easy task	.03*
	Metacognitive skills hard task	.03*
	CHILD 3-5	.05**
Family income (FI)	Metacognitive skills easy task	.05*
	Metacognitive skills hard task	.05**
	CHILD 3-5	.08**
Teacher educational status (TES)	Metacognitive skills easy task	.12**
	Metacognitive skills hard task	.10*
	CHILD 3-5	.24**

*. Significant at the 0.05 level (2-tailed).
**. Significant at the 0.01 level (2-tailed).

The squared multiple correlation coefficients (R^2) were investigated to measure the percentage of the variation in endogenous variables that could be accounted for by the exogenous and mediator variables. The findings from the final model demonstrated that the exogenous variables accounted for 13% (R^2= .13) of the variance in family resilience while explaining the 31% (R^2= .31) in teacher resilience. The overall exogenous and mediator variables explained the 7% (R^2= .07) variance in the metacognitive skills in the easy task, 9% (R^2= .09) variance in the metacognitive skills in the hard task, and intriguingly, 39% (R^2= .39) variance in the CHILD 3-5 Checklist. These proportions revealed that the explained variances for RSA and CHILD were medium, at the same time, FRAS, MSE, and MSH were small in terms of their effect sizes (Cohen, 1988, 1992).

4.8. Summary of the Results

This study aimed to examine the relationships between metacognitive skills in preschool children and the resilience of their families and teachers, considering various demographic factors such as gender, educational status, and income. Additionally, it aimed to investigate the direct and indirect relationships among these variables. Before performing the data analyses to address the research questions, data accuracy was ensured by locating data entry errors, missing values, and outliers. Then, the assumptions related to each data analysis were tested. Finally, the potential impact of demographic variables –such as the child's gender, parents' gender, educational status, and income– on the mediator and endogenous variables of the study.

Concerning the first research question, the study began with descriptive analyses, which revealed that preschool children possess and utilize metacognitive skills. To further explore this question, a MANOVA was conducted to compare preschool children's metacognitive skills based on gender. The results indicated a significant difference with boys obtaining higher scores for metacognitive skills observed in both the easy and hard train track tasks, whereas girls obtained higher scores on the CHILD 3-5 Checklist. Another MANOVA was then performed to investigate the second aspect of the first research question, which involved examining the differences in children's metacognitive skills based on the educational status of their parents. The results for easy metacognitive tasks revealed that although there was a statistical significance between preschool children's metacognitive skill rates and the educational status of their parents, no significant differences were found between the various educational groups. However, for hard metacognitive tasks, a significant difference exists between children with parents in the highest and lowest education status groups. This outcome is reflected in the results of the CHILD 3-5 Checklist, where children of parents with bachelor's and master's degrees exhibited statistically significant differences compared to other educational groups. Children of parents with master's degrees obtained the highest metacognitive skill scores, followed by bachelor's degrees, associate's degrees, high school graduates, secondary school graduates, and primary school graduates. For the third sub-question, another MANOVA was conducted to explore the differences in metacognitive skills of preschool children based on their family income. The results indicated a significant result, although no statistical significance was observed between income groups for both easy and hard metacognitive tasks. However, for the

CHILD 3-5 Checklist, children from high-income families had higher scores than those from middle and low-income families.

The study's second research question focused on investigating the resilience of families, which was assessed through descriptive analyses, revealing that families demonstrated high levels of family resilience. This research question was further explored through three sub-questions, examining family resilience regarding the gender of the parent, parents' educational status, and family income. To investigate the impact of parent gender on family resilience, an independent samples t-test was conducted. The results showed a significant difference, indicating that mothers exhibited higher resilience levels than fathers. Second, the study explored family resilience concerning the educational status of the parents using the Kruskal-Wallis test, a non-parametric alternative to ANOVA. The findings revealed statistically significant differences across six educational groups, with parents holding master's degrees displaying the highest levels of family resilience and those with primary school qualifications showing the lowest. Last, the study explored family resilience regarding family income using the Kruskal-Wallis test. The results indicated statistically significant differences across four family income groups: low, middle, middle-high, and high. Families with high income demonstrated the highest levels of resilience, followed by those in the middle-high-income, middle-income, and low-income groups.

For the third research question, preschool teachers' resilience was investigated, and the results indicated that preschool teachers displayed high levels of resilience. To further investigate this topic, teacher resilience was also examined in terms of their educational status and income. Regarding educational status, the study used the Kruskal-Wallis test to explore differences in resilience scores among teachers with different degrees. The results showed a significant difference, revealing that teachers with a master's degree exhibited the highest levels of resilience, followed by those with bachelor's and associate degrees. Furthermore, the study examined the difference in resilience among preschool teachers based on their income using the independent samples t-test. The results revealed a significant difference, indicating that high-income teachers exhibited higher resilience levels than those on lower incomes.

For the fourth and fifth research questions, the relationships between the metacognitive skills of preschool children and the resilience of their families and preschool teachers were examined. To explore the relationship between preschool children's metacognitive skills and their family resilience, a correlation analysis was conducted, and the results revealed a positive correlation between family resilience and the metacognitive skills of preschool children. Similarly, a correlation analysis was conducted to examine the relationship between the metacognitive skills of preschool children and teacher resilience. The results indicated a positive correlation between teacher resilience and the metacognitive skills of preschool children.

Regarding the final research question, a path model was developed and tested through path analyses to examine the direct and indirect relationships between the study variables. The findings revealed that the initial model provided a slightly acceptable fit to the data, whereas the final model achieved a good fit. The study variables' relationships were analyzed by investigating the path coefficients. Firstly, the study revealed that parent gender and family income had a positive and significant impact on family resilience, whereas teacher educational status positively and significantly affected teacher resilience. Secondly, the findings indicated that family income positively predicted CHILD 3-5 Checklist scores for preschool children. Additionally, child gender significantly predicted all metacognitive tasks in preschool children. Thirdly, both family resilience and teacher resilience were found to be significant and positive predictors of how children fared across all metacognitive skill tasks. Parent gender was also found to have an indirect effect on all metacognitive skill tasks, which was entirely mediated by family resilience. In addition, family resilience partially mediated the relationship between family income and all metacognitive skill tasks. Lastly, teacher educational status had a significant indirect impact on all metacognitive skill tasks, which was fully mediated by teacher resilience.

CHAPTER 5

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

The present research examined the relationship between the metacognitive skills of preschool children and the resilience of their families and preschool teachers as well as the direct and indirect effects of various demographic variables on preschool children's metacognitive skills, and the resilience of their families and preschool teachers. This chapter presents the results of the analyses and interprets them in the context of existing literature. Subsequently, possible implications are proposed to enhance collaboration among families, schools, and communities to improve early childhood education. Finally, the discussions provided both general and specific recommendations.

5.1. Discussion of the Findings

This study aimed to investigate the direct and indirect relationships between preschool children's metacognitive skills, and their families and teachers' resilience with respect to gender, educational status and income. Discussion of the findings is presented in line with the research questions including each sub-question.

5.1.1. Metacognitive Skills of Preschool Children with respect to Gender, Educational Status of the Parents and Family Income

This study revealed that preschool children possess and utilize metacognitive skills, which may differ depending on the child's gender, the educational status of the parents, and family income. The findings indicated that boys performed better on the Train Track Task, while girls scored higher on the CHILD 3-5 Checklist. Furthermore, the educational level of parents and family income positively influenced the metacognitive skills of preschoolers. In recent years, many researchers (e.g., Escolano-Pérez et al., 2019; Gonzales et al., 2018; Louca-Papaleontiou et al., 2012; Marulis et al., 2016; Robson, 2010; Shamir et al., 2009; Whitebread et al. 2007, 2009, 2010) have provided

evidence of metacognition that extends beyond the traditional Piagetian view of development that is closely linked with age or the production-deficit model that was previously thought to apply before age seven (Flavell, 1976; Kreutzer et al., 1975; Veenman et al., 2006). These studies reveal that metacognition is not solely related to age, and children as young as preschoolers can use and demonstrate metacognitive skills. Consistent with this recent literature, the current study has demonstrated that preschool children possess and utilize metacognitive skills. Specifically, the CHILD 3-5 scores were high, and the children exhibited similar rates of metacognitive skill use in both the easy and the hard tasks, with a slight increase in favor of the easy task. Roebers and Spiess (2017) stated that this difference can be attributed to the impact of task difficulty on metacognitive performance. However, on the contrary to the findings of this study, Jiao et al. (2023) found that the accuracy of a figure combination task was significantly higher in the simple condition compared to the complex condition, while the times of metacognitive control and metacognitive monitoring were less in the simple condition compared to the complex condition. This suggests that both metacognitive control and metacognitive monitoring are affected by task difficulty. In a similar way, the results of this study support this finding, which has been exemplified in the literature.

The findings of this study suggest that children exhibited higher levels of metacognitive monitoring and control, as well as failures of metacognitive skills. This may be attributed to the children's lack of mathematical education or shape knowledge. Numerous studies have highlighted the importance of metacognition in problem-solving and mathematics education (Desoete et al., 2001; Garcia et al., 2015; Jacobse & Harskamp, 2012; Mevarech, 1999; Verschaffel et al., 2000). In the current study, a significant number of participants were not familiar with or knowledgeable about the oval shape, which they stated after the task was completed. They thought and knew that the shape was a "circle," so they labeled it and started to construct the task with this assumption in mind. However, upon completing the task, they recognized inconsistencies between their constructed shape and the intended shape. Consequently, they engaged in metacognitive monitoring and control processes to correct their performance. The Geometry Education Program Supported by Metacognitive Strategies (USGEP), designed and implemented by Yıldız-Altan (2022) over nine weeks for preschool children, yielded noteworthy outcomes. Expressly, the train track

task indicated a significant improvement in metacognitive skills among the study group at the end of the educational intervention, with a significant decrease in the failures of metacognitive skills. Therefore, this study uncovers the importance of mathematical knowledge and mathematics education in children's metacognitive skills.

What is intriguing in the present study is that preschool children exhibited higher rates of metacognitive skill failures in the easy task than in the hard task. One possible explanation for this outcome is that although they spent less time constructing the easy task when they realized the inconsistency between their shape (circle) and the intended shape (oval), many could not make another attempt. In other words, children might lose their motivation when they experience an unexpected error or a challenge. Bandura (1989) proposed that metacognitive skills alone are insufficient without motivational factors such as perseverance and resilience. Research has been widely discussed in both theoretical and empirical literature regarding metacognition and motivation in adults and older children (Dinsmore et al., 2008; Efklides, 2011; Zimmerman & Moylan, 2009). Efklides (2011), for instance, defined metacognition as the ability to monitor and regulate one's cognition while being motivated. In this regard, motivation was seen as a prerequisite to metacognition. Other scholars have also portrayed metacognition as a motivated process (Bandura, 1989; Schunk, 2008). Therefore, the decrease in motivation could have led to a lack of focus and reduced effort on the part of the children, ultimately resulting in more failures of metacognitive skills in the easy task. As a result, the current study sets another example on the necessity of motivation in metacognition.

In addition, there were gender differences between metacognitive skill tasks. While boys obtained higher scores on both the easy and the hard train track tasks, CHILD 3-5 scores were higher in girls. These inconsistencies are in line with the existing literature. While some studies revealed that boys have higher scores (Marulis et al., 2016), some claimed that girls are better (Akin, 2016; Ciascai & Lavinia, 2011), and some asserted no relationship (Maric & Sakac, 2020). The reason for the difference in the current study might be related to gender stereotypes and differences. Previous studies have indicated that educators may consciously or unconsciously encourage children to engage in certain games (Blaise, 2005; Chapman, 2016). Moreover, parents

often perceive STEM fields, such as science, technology, engineering, and mathematics, as less suitable for girls, while they view languages as less appropriate for boys based on traditional gender stereotypes (Tomasetto et al., 2015). The influence of these stereotypes is also reflected in the way family members and educators guide children's play activities according to their gender (Määttä & Uusiautti, 2020). According to Blakemore and Centers (2005), typical play of boys is considered more competitive and riskier, and involves more construction, while typical play of girls is perceived as placing a stronger emphasis on physical appearance, nurturance, and domestic skills. Therefore, this mindset shapes the opportunities and toys presented to children. In the current study, boys were noticeably more familiar with the materials used in the train track task, while girls tended not to be. Girls' unfamiliarity with the material affected their performance because some could not click the pieces into each other and join up the tracks. Thus, boys tended to obtain higher scores because they were faster and knew how to plan and execute these tasks. In parallel with this finding, some studies show that boys perform better than girls when playing with construction materials and block building (Labarthe, 1997; Rubin, 1997; Tian et al., 2018).

In contrast, girls tended to receive higher scores than boys on the CHILD 3-5 Checklist completed by their teachers. The reason for this might be that earlier studies have shown that teachers tend to perceive girls as calm and less active than boys. According to a study by Gazi (2018), primary school teachers believed that girls were naturally expected to be calm, orderly, and organized, whereas boys were expected to be active, naughty, and irresponsible. Although teachers are conscious of their tendency to behave and teach stereotypically (Gray & Leith, 2004; Skelton et al., 2009), they struggle to modify their behavior due to the unconscious nature of their actions (Gray & Leith, 2004). Therefore, these interactions and experiences might positively affect the metacognitive development and the strategies to handle girls' problems, which results in higher scores. In contrast, teachers' negative label of boys might impact their perspective of boys and causes them to give lower scores. This finding is consistent with Carrington and McPhee's (2008) claims, who suggested that school tends to be oriented towards a more feminine culture, which may result in an advantage for girls. The reason for this may be that teachers are more commonly women (Drudy, 2008),

which is parallel with the current study's randomly selected sample which did not yield the participation of a male teacher.

Moreover, parents' educational status has an impact on the metacognitive skills of preschool children. While a significant relationship was found for all metacognitive tasks (easy task, hard task, and CHILD 3-5), no significant difference was found among educational groups in the easy train track task. This may be attributed to the fact that children are already familiar with geometric shapes through the Turkish Early Childhood Education Curriculum (MoNE, 2013), regardless of their parents' educational status. As the sample group of this study consisted of preschool students, they may have already become familiar with the oval shape in class, and knowledgeable about how to produce this shape. However, significant differences were observed among educational groups for both the hard task and CHILD 3-5 scores in parallel with other studies (Maric & Sakac, 2020). Here, children of parents with the highest education status group exhibited higher metacognitive skills than those with from the least formally educated group in the hard train track task. Similarly, the CHILD 3-5 scores of children whose parents had a master's degree significantly differed from those whose parents were primary school, secondary school, or high school graduates or had an associate degree. Furthermore, preschool children of parents with a bachelor's degree also showed significant differences among the same educational groups. The reason for this might be that children from families with higher levels of education and material resources are more likely to have access to resources and opportunities that facilitate their cognitive and motivational development (Aschaffenburg & Mass, 1997; Barone, 2006; Dumais, 2006). This may be attributed to the fact that parents with higher educational levels are more likely to place greater importance on their children's early education, dedicating their time, effort, and material resources towards establishing a suitable educational setting during the early years (Barone, 2006; Dumais, 2006). Therefore, it can be said that the educational status of the parents supports their children's metacognitive development.

In addition, family income showed inconsistent results in line with the findings of the previous studies. Specifically, no relationship was found between family income and metacognitive skills in the train track tasks (both the easy and hard tasks), consistent with previous studies that have also found no relationship (Pappas et al., 2003).

However, a significant relationship was found in CHILD 3-5 scores in parallel with the previous literature (Maric & Sakac, 2020). The reason for these differences might be related to the nature of the data collection instruments. As these instruments focus on different aspects of metacognition, with the train track task focuses on monitoring, control, perseveration, and distraction behaviors, the CHILD 3-5 focuses on the self-regulated learning of young children. Research examining different aspects of metacognition has found contradictory results concerning socio-economic status (Jordan et al., 1992, 1994; Maria & Sakic, 2020; Pappas et al., 2003). Additionally, differences in data collection procedures may also contribute to the inconsistencies in results. While the train track task is based on children's active participation, the CHILD 3-5 checklist is filled out by teachers based on their observations. Overall, consistent with previous studies, it can be concluded that family income is an inconsistent factor in its relationship with preschool children's metacognitive skills.

5.1.2. Family Resilience with respect to Gender of the Parent, Educational Status, and Income

Family resilience assessment scales can yield different responses for men and women since various family members may perceive the same event differently (Deković & Buist, 2005). This might be related to numerous brain features and behavior that differ by sex (Ivan et al., 2023), which subsequently influences the outcomes. This observation has been supported by extensive research that explores the interactions among gender roles, societal norms, and individual experiences within the family setting (see Anderson et al., 2017; Biffi & Mamede, 2010; Kroska, 2008).

In the current study, the findings indicate that families exhibit high resilience, which could be attributed to the close number of mothers and fathers who participated in the current study. The results also revealed that family resilience can be affected by gender, educational status, and family income. Specifically, this study found that mothers are more resilient than fathers, which can be an indicator of the impact of gender on resilience. Moreover, the parents' educational status and family income had positive influences on the resilience of families.

Family resilience includes ecological and developmental approaches which consider the family in sociocultural environment context (Mackay, 2003; Simon, et al., 2005).

From the ecological perspective, risk and resilience arise from the interplay between an individual's and a family's exposure to risk or resilience and their capacity to handle stressful situations throughout their lifetime (Walsh, 2012). In terms of the sociocultural context and family dynamics, they can mitigate or reinforce genetic and biological predispositions (Moore & Neiderhiser, 2014). Thus, there are several risk and protective factors related to family resilience, and the present study sets an example to these factors.

The results of this study showed that families have a high mean of family resilience score. Resilient families are essential to promote emotional, psychological and physical well-being (Coyle, 2011; Garmezy, 1991). If families are able to cope with and adapt to negative situations, they can solve problems more efficiently (McCubbin & McCubbin, 1993; Walsh, 1998). This will decrease the likelihood of them experiencing negative mental and physical health consequences like depression (Johnson et al., 2010; Osório et al., 2017) or a chronic disease. Also, resilience helps them to build strong family relationships (Black & Lobo, 2008; Walsh, 1998; White et al., 2004). When families are resilient, they are more able to open communication and sharing (Walsh, 2003). This allows them to work on addressing their problems as a unit by decreasing the level of stress. By sticking together through difficult times, they can build trust and become stronger. When the findings of this study and the similarity in the literature are considered, it can be deduced that families are actually on the positive side regarding resilience.

However, there are several factors affecting their resilience. Gender has an impact on family resilience, which is higher in females than males. In other words, mothers can be more resilient than fathers. This finding is in parallel with the study of Eilertsen et al. (2015), who reported mental health outcomes for mothers of children who survived cancer were comparatively better than those of fathers. However, there are other studies in literature contradicting with these results (Bitsika et al., 2013; Cheatham & Fernando, 2021; Jones et al., 2013). This difference might be due to the cultures in which the studies were conducted. Changes in family dynamics may vary according to socio-economic background, particularly in Türkiye, which is characterized as a fusion of Eastern and Western cultural characteristics (Ataca, 2006). These dynamics affect urban middle-class families more than rural ones, who have different

perspectives on education, gender roles, practices related to raising children and the set of beliefs that guide them (Sunar & Fisek, 2005). The urban family has been noted to undergo a shift in power distribution between parents regarding child-rearing practices, discipline, problem-solving, and financial management, indicating that the father is no longer the sole authority figure in the household (Ataca & Sunar, 1999). As a result, these significant changes in the structure and dynamics of the families lead to differences in the stress encountered by both mothers and fathers. Mothers are exposed to more cultural expectations than fathers, being considered the primary provider of childcare (Eldeniz Çetin & Sönmez, 2018), frequently in addition to their other household duties (Beyenal, 2019; Razon, 1983). Such expectations and responsibilities contribute to the development of resilience in mothers, requiring them to manage difficulties they encounter in their daily routines. While some controversial findings in terms of resilience in mothers and fathers are seen in the literature, this study found a result in favor of mothers.

The study also showed that families with well-educated parents are more resilient than others. In other words, as the educational status raises, the scores for family resilience increase accordingly. This finding aligns with some studies (Ha et al., 2008), while it contradicts those that found no relationship (Kaner et al., 2011; Taşdemir, 2013). One reason for such discrepancy might be related to the self-efficacy beliefs of parents. Cihan and Calik-Var (2022) found that parents whose highest education attainment was to have graduated from high school graduate had higher self-efficacy than than those parents with lower and even some higher levels of education status, namely primary school, bachelor's, and post-graduate parents. Their finding is partially parallel with the results of the current study. Regarding similarities, parents with high school degrees had higher family resilience than primary school graduates. In the present study, high school graduates had higher family resilience than secondary school graduates. In addition, parents with master's degrees had the highest resilience scores, followed by those with bachelor's degrees, associate degrees, high school graduates, secondary school graduates, and primary school graduates. The reason for the findings of the current study might be that higher-educated parents are more knowledgeable about their children's developmental needs and better equipped to access information and supplementary resources when required (McConnell et al., 2011). This can support their self-efficacy beliefs and practices, which result in higher psychological resilience.

Cunningham and Renk (2017) found that the level of self-efficacy that a parent experiences in their role can impact their stress levels and behaviors toward their children. Moreover, higher-educated individuals have a broader social network (Fischer, 198; McPherson et al., 2006) due to the number of learning environments they spend time in and the people they meet there. Simon and colleagues (2005) suggest that receiving support from social resources can enhance the resilience of families. Therefore, parents with higher educational backgrounds', broader social networks and friendships are likely to encounter different perspectives and strengthen their well-being. This study sets proof that the educational level of the parents positively influences family resilience.

Another finding of the study is that family resilience is related to family income. Specifically, the higher a family's income the more they generally score for resilience. This accords with the existing literature (Wisher et al., 2016). The explanation for this correlation might be that families with higher socio-economic status have more opportunity to explore different resources and opportunities. They might also experience lower levels of anxiety as they may be less exposed to financial difficulties. It has also been seen that socioeconomic status can prevent them from addressing low marital satisfaction (Amato et al., 2007; Dakin & Wampler, 2008; Falke & Larson, 2007; Stanley et al., 2006). While all families can experience such problems and dissatisfaction, those with lower socioeconomic means are seen to cope less well with the need to support each other and overcome negative feelings (e.g., anxiety, depression, loneliness) that challenge family wellbeing and cohesion. Therefore, parent gender, educational status, and family income can be included as protective and risk factors since significant relationships were found.

5.1.3. Teacher Resilience with respect to Educational Status and Income

Teacher resilience is a critical component, and this study uncovered that teachers generally have a high level of resilience, which is most affected by their educational status and income. The results demonstrated that teachers' educational status and income had a strong and positive impact on their resilience.

A significant body of literature shows that the teaching profession is commonly linked with high stress levels (Aydın & Kaya, 2016; Chan, 2003; Greenfield, 2015; Kebbi, 2018; Paquette & Rieg, 2016; Stiglbauer & Zuber, 2018). Consistent with the

literature, the results of this study demonstrate that although there are risk factors related to the resilience of preschool teachers, they mostly show high levels of resilience. This finding reinforces the idea that teachers who cannot manage and overcome challenges in school might have decreased effectiveness and enthusiasm, which in turn can negatively impact the educational environment (Greenfield, 2015) and students' academic performance (Boyd, 2013), as previously reported in the existing literature.

Given that teachers frequently need to readily cope with unforeseen problems and situations in a classroom setting; they should be adaptable to manage the classroom effectively. They may face with more children from diverse backgrounds with varying needs as most classes are now more diverse than ever (Diallo & Maizonniaux, 2016), and teachers worldwide encounter students from various backgrounds, including differences in abilities, cultures, religions, etc. (Lin & Bates, 2014). Therefore, teachers should be able to adapt themselves to these circumstances as well as adapting components in their classroom (e.g., curriculum, instruction, practices) and responding in the best possible way. In addition, teachers are the role model of their students (Liang et al., 2022); thus, they should be able to cope with adverse situations and show children how to approach problems and solve them. Therefore, teachers' resilience is a critical aspect to consider, and it can be concluded that preschool teachers can obtain good levels of resilience when measured by the Turkish version of the Resilience Scale for Adults (Basım & Çetin, 2011)

Existing literature has found several risk and protective factors related to the resilience of teachers. One of them was the educational status of the teachers (Schaefer et al., 2012). This study revealed a positive relationship between teachers' educational status and resilience. In other words, teachers with higher educational backgrounds are more resilient. Preschool teachers holding a master's degrees had higher resilience than preschool teachers with bachelor's and associate degrees. This finding is in line with the previous literature (Akgün, 2021; Bozgeyikli & Şat, 2014; Chu & Liu, 2022); however, there are also other studies contradicting this result (Selçuklu, 2013; Yılmaz & Yalçın, 2020). The reason for that might be the greater knowledge and skills that teachers possess through education. With their courses, they can better understand young children, efficient educational practices, and how to manage classrooms. With

this mindset, they can become aware of difficult situations and prepare to handle them without stress effectively.

Another reason why higher-educated preschool teachers showed greater resilience might be related to teachers' self-efficacy beliefs. Teachers with higher educational backgrounds have higher self-efficacy (Orakcı et al., 2023; Shaukat et al., 2019; Yılmaz & Çokluk-Bökeoğlu, 2008) which might enable them to feel more competent and knowledgeable about children and education. In-depth knowledge about a particular field is acquired through postgraduate education, allowing for specialization. This type of education provides the chance to comprehend the underlying concepts of the subject matter rather than just focusing on the surface-level. Therefore, this increases how they navigate the problems and their beliefs toward performing their job effectively. This idea draws similar conclusions to previous studies. For example, Drake (2002) claimed that a teacher's proficiency, expertise, and self-efficacy could fluctuate over time if they do not try to stay up-to-date with new information and techniques.

The other reason might be preschool teachers' broad people network. By getting an education at different levels, teachers can acquire different resources to provide support, guidance, and suggestions to handle challenging situations and cope with stress. For instance, social support is crucial in positive psychology as it promotes mental health and individual satisfaction. When teachers receive more significant social support, it leads to higher social inclusion, respect, affirmation, and care for others, ultimately enhancing their physical and mental well-being (Chi et al., 2014). The findings of the current study draw support from previous studies on social support and well-being, which demonstrated that social support could decrease stress, support mental health, and enhance overall well-being in the workplace (Doney, 2013; Holt-Lunstad et al., 2010; Karademas, 2006; Park et al., 2004; Toker, 2011). Thus, it can be concluded that teachers' social networks and their support within this environment can be considered a protective factor of their psychological resilience.

Another factor contributing to teacher resilience is income. The study revealed that teachers with higher income have higher resilience in accordance with the existing literature (Kulekci-Akyavuz, 2021; Schonfeld, 2001). This might be related to experiencing less financial stress. Unless teachers have an adequate income, and not

knowing whether they can afford their basic needs, they can feel stress which negatively affects their psychological and physical well-being. In addition, these high amount of stresses can cause them to burnout (Montgomery & Rupp, 2005) and quit their jobs (Madigan & Kim, 2021). Yıldız-Çiçekler and colleagues (2020) found significant differences in mental burnout between early childhood teachers in Türkiye and the U.S., with participants from Türkiye having higher levels of mental burnout. Similarly, in their study, Demir and Arı (2013) investigated the difficulties faced by teachers and identified one of the primary challenges in Türkiye as their low-income level, which draws a similar conclusion with the findings of the present study. Recent research suggests that the status of the teaching profession has been declining gradually due to several factors, including low salaries for teachers (Demir & Almalı, 2020; Kıran et al., 2019). Therefore, having a higher income can support teachers' commitment to their jobs and make greater efforts to solve their problems and continue their careers. Similarly, teachers with higher income might have a tendency to commit to their jobs since they may feel more valued and respected. In turn, this will bring job satisfaction which boosts their ability to perform their job in the best possible way.

Furthermore, being far from financial stress, teachers can engage in professional and personal activities that can support their emotional and psychological well-being. They can spend time and resources on their personal needs and development such as hobbies, travel, attending and presenting at conferences and participating in training programs that in turn furthers the performance of their profession. The findings draw a similar conclusion to Wister and colleagues' study (2016), suggesting people with higher socioeconomic status tend to have more resilience as they access more significant social and economic resources. Otherwise, teachers may experience stress and fatigue due to the necessity of needing to secure additional paid work to relieve financial pressures, potentially hindering their teaching effectiveness and ability to participate in professional development activities (Osei, 2006). In addition, they can also support their professional development by accessing the latest developments which leads them to keep themselves up to date. Therefore, teachers with fair and adequate salary are essential since it will allow them to better able to focus on their jobs and provide the best educational opportunities for their students.

5.1.4. Preschool Children's Metacognitive Skills and Resilience of their Families

Families have a critical role in their children's lives, and this study revealed that family resilience is positively correlated with the metacognitive skills of preschool children. Therefore, considering the impact of the resilience of families in their children's metacognitive development in these early years might have crucial importance.

Studies have found that metacognitive development undergoes significant changes between the ages of three and seven (Bryce et al., 2015; Whitebread et al., 2009; Roebers et al., 2012), emphasizing the importance of teaching learning strategies to children at an early age and instructing them on how, when, and why to use them. Research suggests that interactions that foster metacognitive development and self-regulation first take place in the home environment (Marliyani & Suradijono, 2019). Thus, families play a critical role in this process by providing metacognitive support (Erdmann et al., 2019), such as offering guidance and assistance on approaching tasks, resulting in children's improved utilization of higher-level metacognitive strategies like monitoring, detecting, and correcting errors and adapting their learning strategies (Stern & Hertel, 2022; Neitzel & Stright, 2003; Stright et al., 2009). Therefore, it can be said that a positive family environment can stimulate children's metacognition and motivation for learning (Maric & Sakac, 2020).

Consistent with these findings, a recent study by Rani and Duhan (2020) found a positive and significant relationship between the overall home environment and metacognition. The results of this study draw a supporting conclusion for this finding. The current study uncovered that there is a positive relationship between family resilience and metacognitive skills of preschool children. It means that children who grow up in families that can adapt challenges and bounce back from them are more able to possess higher order thinking skills. This finding might be explained as children learn through observation, and family members being their role-models. Families who display diverse metacognitive strategies and metacognitive skills such as effective problem solving, detecting errors, changing strategies, monitoring, and controlling their behaviors and providing self-reflection can become role models for their children. When children observe their family members in these circumstances, they are more likely to develop and implement these skills as well. For instance, the speed and framework of a child's metacognitive development can be influenced by the problem-

solving situations they encounter at home (Carr et al., 1989). These positive learning environments also support children's development.

Resilient families have a tendency to create supportive learning environments for their children. They can encourage their children when they make a mistake. In these environments, children could feel safe and supported where they have an opportunity to learn and grow. Providing children with nurturing, responsive, and secure home environments can enhance their emotional well-being and facilitate their adaptation (Collishaw et al., 2007; Jaffee, 2007). Also, Kendler and Baker (2007) noted that families who can create nurturing and supportive home environments with effective parenting skills may positively impact their children's resilience. In addition, it has been suggested that these families may also pass on genes associated with resilience to their children. Consequently, children of these families are more likely to take risks, try again and practice different metacognitive skills and strategies. Therefore, a reason for preschool children obtaining higher metacognitive skills in the present study might be related to the high levels of resilience of their families.

Another reason might be that having high levels of family resilience enhances the ability of family members to establish close relationships and maintain open communication (Walsh, 1998). Families who demonstrated a solid commitment to collaboratively managing stressors were found to have closer relationships (Bayat, 2007). In this way, parents may have gained an understanding of their children's zone of proximal development, as well as their individual strengths and weaknesses, by engaging in this process, and they may have supported their children's development by providing appropriate scaffolding. Research indicates that children's metacognitive skills can be enhanced through scaffolding provided by family members (Neitzel & Stright, 2003; Stright et al., 2009), which can be the reason for children's high metacognitive skills in the current study.

When parents possess a strong sense of family resilience, they tend to feel more knowledgeable and capable of providing their children opportunities to learn and grow, which leads to more involvement and support for their children's cognitive development. This study supports the findings of the McConnell and colleagues (2011) asserting that more knowledgeable parents have a higher level of awareness regarding their children's developmental needs and have better access to additional resources and

information when needed. On the other hand, when family resilience is low, parents may lack the motivation to spend quality time with their children, resulting in a reduced ability to participate in their children's metacognitive development actively. Therefore, this study concluded that in order to support children's metacognitive skills, families should be resilient and provide internal and external resources to their children.

5.1.5. Preschool Children's Metacognitive Skills and Resilience of their Preschool Teachers

Teachers can impact their students' development in various ways, and this study found that even their resilience is a predictor of their students' metacognitive skills. The results suggested that teacher resilience significantly and positively impacts their students' metacognitive skills. Thus, their impact on their students' metacognitive skill development should have been critically considered.

Teachers' role and educational practices in supporting the metacognitive skills of their students are very similar to those found in other studies in the literature (Aras & Tantekin-Erden, 2019; Imir, 2018). What is critical is that in order to promote better educational experiences and opportunities for children, teachers should be far from stressful conditions, and they should have good well-being. Otherwise, if a teacher has low resilience, it may result in their leaving their job (Arnup & Bowles, 2016) and being unable to establish long-term relationships with their students. The present study shows a positive correlation between preschool teachers' resilience and their students' metacognitive skills. In other words, preschool children whose teachers were measured as more resilient displayed better metacognitive skills. Similar to this finding, Cassata and French (2006) stated that appropriate adult support could enhance children's metacognitive skills. Therefore, children's higher metacognitive skills might be related to the support they get from their teachers.

Developing children's metacognitive skills is a complicated and challenging process requiring ongoing effort and practice. Since children are new to these approaches and practices, they might experience setbacks or struggles trying to implement these strategies and skills. However, metacognition is inclined to errors, and multiple factors can affect the accuracy of metacognitive processes (Thiede et al., 2003). It is therefore crucial for effective teaching to include instruction on metacognition, and this should

be founded on a thorough comprehension of cognitive theory (Schofield, 2012). Indeed, aligning with this idea, evidence suggests that metacognitive skills can be effectively taught (see Brown & DeLoache, 1978; Doran & Cameron, 1995; Schellenberg et al., 2011; Yasir et al., 2020). Thus, resilient teachers can support and motivate their students to try again when they experience difficulty or failure. This might encourage them to engage more in the difficulties, affecting preschool children's metacognitive skills.

A safe and supportive classroom environment, with positive teacher-student relationship, enhances students' emotional regulation and leads to greater engagement and self-directed learning (Liew et al., 2019). In these positive and nurturing learning environments, children have the opportunity to practice and develop metacognitive skills and strategies. For creating a positive learning environment and promoting greater student engagement, Sabol and Pianta (2012) have discovered that relationships based on qualities like trust and empathy are necessary. Indeed, students' likelihood to attempt different strategies is positively impacted by a trusting relationship with their teacher, which can be fostered through actions like adapting instruction to meet students' needs, providing timely formative feedback, and embracing mistakes as opportunities for learning (Leighton et al., 2018). Resilience might be considered a contributing factor to this relationship which also impacts the metacognitive skills of preschool children.

Another supporter of this result might be related to the more effective feedback that teachers provide in these learning processes. This idea aligns with the recent literature claiming that effective feedback is critical for developing metacognitive skills (Molin et al., 2020). Resilient teachers are better able to provide constructive and meaningful feedback that supports student learning and growth. Indeed, Sato and Loewen (2018) suggest that metacognition may be better conceptualized as closely tied to the feedback mechanisms of the learning process rather than the act of learning itself. Effective feedback is crucial for developing metacognitive skills as it allows students to comprehend their own thinking processes and identify areas where they can improve. Thus, teachers' resilience and constructive feedback may play a significant role in fostering the metacognitive skills of preschool children.

Moreover, teachers with higher resilience might be open to try new approaches and practices to support their children's development due to the belief that they can handle the challenges and overcome the difficulties they might have during the process. In line with this, several studies reported that children's metacognitive skills can be improved by different educational practices. Aras and Tantekin-Erden (2019) and Imir (2018) discovered that diverse documentation processes can develop metacognitive skills of preschool children. In addition to documentation, reflective dialogues both between teachers and students, and amongst students themselves, is widely acknowledged as a crucial technique for improving metacognitive skills (Hattie, 2008). Therefore, benefiting from new practices and trying different approaches might be suggested to enhance preschool children's metacognitive skills since they have a positive correlation with the resilience of teachers.

Furthermore, during the educational process, teachers become children's role models (Bashir et al., 2014). When the teachers have higher resilience, they can become better role models and teach metacognitive skills and strategies to children. They can reflect on their learning processes and experiences, which will set examples for children and engage in their teachers' experiences and processes they have been through. Effective teaching involves assisting students in developing metacognitive thinking by demonstrating, inspiring, guiding, and giving feedback (Schofield, 2012). According to Schoenfeld (1987), teachers who demonstrate metacognitive thinking by encouraging students through tasks that require reflection can help to promote students' own metacognitive skills. Setting goals and monitoring progress are closely interconnected, and teachers should model and equip students with the necessary skills to engage in both practices (Johnson et al., 2021). Self-evaluation and monitoring are crucial for sustaining self-efficacy in performance and learning (Klassen, 2010), and monitoring self allows for strategic adaptation if a student's current approach proves inefficient. Indeed, an effective way to improve students' metacognitive skills is through techniques such as self-reflections, thinking aloud, and modeling (Johnson et al., 2021). Therefore, by deploying these techniques, resilient teachers provide their students with the necessary techniques and capabilities to improve their metacognitive and self-reflection skills.

Developing metacognitive skills requires persistence and dedication for both teachers and students and resilient teachers can guide students to develop the resilience and persistence required to overcome obstacles and challenges. This idea can be supported with the findings of Bouillet and colleagues (2014), indicating that preschool teachers who view themselves as resilient also perceive themselves as more competent in fostering resilience in children. The quality of the interactions between preschool teachers and young children is a significant contributing factor in the overall development of children (Bailey et al., 2013; Sakellariou & Rentzou, 2012). When teachers model resilience and coping skills, students are more likely to develop these skills themselves. These learning experiences can help children build a strong foundation for future success and well-being. It is also known that the atmosphere of a preschool institution can play a crucial role in developing children's strengths and mitigating risk factors in their lives (Hall et al., 2009). Furthermore, Arastaman and Balci (2013) suggest that this can be achieved by empowering children to believe in themselves, fostering courage, and supporting them in developing a sense of responsibility for their successes. Therefore, it is thought that the resilience of teachers can strengthen the metacognitive skills of preschool children by improving their resilience as well.

5.1.6. Discussions Regarding the Model

In this section, the results of the sixth research question in the present study were discussed based on the results of the path analysis and compared to the results of the correlational analysis conducted in the fourth and fifth research questions. The direct relationships between the demographic variables of families and teachers and preschool children’s metacognitive skills and the direct relationships between the family and teacher resilience with their children’s metacognitive skills were discussed subsequently. In addition, the mediating role of the resilience of families and teachers regarding their children’s metacognitive skills in the relationship between demographic variables and preschool children’s metacognitive skills was discussed in detail.

5.1.6.1. Discussion Regarding the Differences between Descriptive Analyses and the Direct Effects in the Path Analysis

The results of the path analysis drew similar conclusions to the descriptive analyses of the current study with only few differences. With regard to the proposed relationships between child gender and the metacognitive skills, path analysis supported the relationship discovered through descriptive analyses. This finding is in accordance with those of Marulis and colleagues (2016) who showed that boys had higher Metacognitive Knowledge Interview (McKI) scores. In terms of the metacognitive skills of preschool children, the results of the path analysis were in line with the descriptive analyses in which the direct effect between family income and metacognitive skills of preschool children lies in the CHILD 3-5 scores. This inconsistency is in accordance with the literature (Jordan et al., 1992, 1994; Maria & Sakic, 2020; Pappas et al., 2003). In addition, considering the descriptive analyses between children's metacognitive skills and family resilience, and children's metacognitive skills and teacher resilience, the proposed model has supported the findings.

In terms of the families and teachers' demographic variables (i.e., gender, income, and educational status) and their resilience, the results of the path analysis revealed that some of these demographic variables have a significant effect on the resilience of families and teachers. The results confirm that parent gender and family income significantly affect family resilience. Specifically, mothers and higher-educated parents exhibited higher family resilience. These results are accord with previous studies, which showed that parent gender (Eilertsen et al., 2015) and educational status (Ha et al., 2008) were associated with their resilience levels.

However, different from the previous correlational analysis results of the present study, path analysis showed that the educational status of the parents does not have a significant relationship with family resilience. This difference may be because educational status was a weak predictor of family resilience. Although it showed a small relationship in terms of its correlation with the families' resilience, the direct effect was not significant in the total model. This result is in line with the results of Kaner et al. (2011) and Taşdemir's (2013) findings, showing nonsignificant relationships between the educational status of the parents and their resilience levels

who have children with multiple disabilities. In contrast, Ha and colleagues (2008) reported that the educational status of parents is a significant predictor of their psychological well-being. These inconsistent results may reveal that the parent's educational status is not a consistent predictor of the resilience of families, as compared to the other indicators, as reported by previous studies.

Another explanation for the insignificant effect of educational status on family resilience may lie in a more indirect effect instead of the direct effect. This can be supported by Azad et al. (2014) and Zhai (2017), who found that parents with higher levels of education exhibit greater competency in showing warmth, sensitivity, cognitive stimulation, and caregiving toward their children. Therefore, families can build stronger bonds through these positive experiences, which is supported by the self-efficacy of the parents. This finding is in line with Cihan and Calik-Var (2022)'s study, indicating parental self-efficacy has an indirect effect on family resilience. Therefore, educational level can have an indirect effect on family resilience given the self-efficacy beliefs of the parents.

Moreover, the results confirm that teacher educational status directly affects teacher resilience, which is supported by the findings of the current study and other studies in the literature. Teachers with higher educational backgrounds are seen to have higher resilience. However, different from the previously mentioned results of the present study, path analysis showed that the teachers' income does not have a significant relationship with the teacher's resilience. The reason for this might be related to the economic difficulties Türkiye is currently experiencing. The World Bank (2023) reports a significant increase in the inflation rate of Türkiye from 19.6% in 2021 to 72.3% in 2022, indicating notable economic fluctuations in the latter year. Consequently, there were changes in the salaries of the teachers in 2022. The salary of government employees in Türkiye was increased by 30% in July 2022 (Grand National Assembly of Türkiye, 2023). It is worth noting that the data collection process took place six months in 2022, which suggests there may not have been a significant relationship since the income of the teachers whose data was collected later was higher. Therefore, it can be concluded that teachers' income is an inconsistent predictor of the resilience of teachers.

5.1.6.2. Discussion Regarding the Indirect Relationships and Mediating Roles of Family Resilience and Teacher Resilience

The results of the path analysis revealed that the relationships between the demographic variables and the metacognitive skills of preschool children were partially and fully mediated by family and teacher resilience.

The findings of the study demonstrated that family resilience fully mediated the effects of the parent gender on the metacognitive skills of preschool children. This indicates that preschool children's metacognitive skills depend on parent gender on family resilience. Specifically, the results of the path analysis revealed that mothers have a more positive effect on the metacognitive skills of preschool children than fathers, which is mediated by family resilience. The possible explanation for this finding could be attributed to traditional parenting roles and expectations, where mothers are considered as the primary caregivers (Eldeniz Çetin & Sönmez, 2018), and spend more time with their children (Cha & Song, 2017; Li & Guo, 2023). Children tend to experience more family warmth when parents spend more time with them. During these interactions, parents convey positive or negative emotions to their children (Fischer et al., 2021). Therefore, parents who have more positive emotions can transmit more positive experiences to their children. Consequently, this study revealed that mothers have higher resilience, which is in line with Eilertsen and colleagues (2015) study. The quality and quantity of time parents spend with their children significantly impact their overall development and well-being (Fallesen & Gähler, 2020), and the messages related to resilience conveyed by mothers can enhance the development of their children's metacognitive and life skills.

On the contrary, the findings of the study demonstrated that family resilience partially mediates the effects of family income on the metacognitive skills of preschool children. This indicates that, in part, preschool children's metacognitive skills depend on the family income for the resilience of their families. In other words, family income is important to predict family resilience, but when income is accompanied by high levels of family resilience, family income may produce a better effect on preschool children's metacognitive skills. The reason for that might be related to that families with high socioeconomic status promote greater experience, resources, actions, and

social interactions (Yunus & Dahlan, 2013), reducing their children's developmental risks (Rochette & Bernier, 2014) while supporting family resilience.

Furthermore, the results of the path analysis revealed that the educational status of teachers has an impact on the metacognitive skills of preschool children, which is mediated by the teachers' resilience. This indicates that preschool children's metacognitive skills depend on teacher educational status and teacher resilience. Teachers with higher levels of education tend to possess greater self-efficacy, likely due to feelings of increased competence and knowledge regarding children and education (Orakcı et al., 2023; Shaukat et al., 2019; Yılmaz & Çokluk-Bökeoğlu, 2008). In order to maintain self-efficacy, self-evaluation and monitoring is crucial for effective performance and learning (Klassen, 2010), which are important metacognitive components. Thus, teachers' educational status supports their resilience which results in either consciously or unconsciously promoting metacognitive learning experiences for their students.

Based on the Ecological Systems Theory, families and teachers have an immediate direct effect on the development of children, but they are not the only factors influencing it. Several other direct and indirect factors can also impact children's development from an early age. Similarly, Sociocultural Theory highlights the significance of family and teacher interactions in children's learning and development. However, most existing studies on the metacognitive development of preschoolers have mainly focused on metacognition itself (see Bryce & Whitebread, 2012; Escolano-Perez et al., 2019) or its relationship with executive functions (see Bryce et al., 2015; Marulis & Nelson, 2021). Consequently, the quality of interactions and learning experiences in family and teacher levels have not been thoroughly explored. Therefore, the current contribution of this study may help to understand how metacognitive skills of preschool children are affected by their families and teachers' resilience. It sheds light on the risk and protective factors at the family and teacher levels that can influence the development of children's metacognitive abilities.

5.2. Implications

The study's findings offer reliable and significant conclusions regarding the importance of the development of metacognitive skills in preschool children and the

resilience of their families and teachers. These conclusions also serve as valuable guidance for future research on metacognitive skills in preschool children and contributing factors at family and teacher levels. As a result, the study's implications for research and practice have been considered in the light of the findings.

5.2.1. Implications for Research

The present study is a significant contribution to the field of education, particularly in early childhood education, as it explores the metacognitive skills of preschool children by considering the impact of their families and teachers' resilience. The results of this study have three important implications for future research on the metacognitive skills of preschool children. These implications may lead to future studies exploring metacognitive skills in education within a more holistic ecological perspective, considering families' and teachers' psychological attributes and well-being.

Firstly, the study makes a valuable contribution to the early childhood education literature by showing that metacognitive skills are multidimensional constructs. To the authors' knowledge, previous research on metacognitive skills in preschool children has mainly focused on the child's characteristics, but this study sheds light on the potential impact of family and teacher resilience on these skills. The results indicate that not only are metacognitive skills affected by family resilience, but teacher resilience also plays a role by having a strong influence on certain demographic factors -gender, educational status, and income. The study suggests the need for further investigation into the direct effects of family system variables and their underlying mechanisms, as well as the predictors of teacher resilience. Additionally, the findings and path model presented in the study extend the knowledge of the relationship between the metacognitive skills of preschool children and the resilience of their families and teachers and can contribute to the early childhood education literature.

Secondly, the study provides a contribution to the literature on early childhood education in Türkiye. Currently, little research is conducted on the metacognitive skills of preschool children, particularly with their families. Previous studies in Türkiye have focused on teachers and intervention programs. This study sheds light on the potential role that families play in the development of children's metacognitive skills, as well as the experiences and opportunities available to them in their home environment. By including families in the study, the researchers aimed to fill this gap in the literature

and provide a more comprehensive understanding of the factors contributing to the development of metacognitive skills in early childhood. The findings of this study could have important implications for children, educators, policymakers, and families in Türkiye, as well as in other countries, who are interested in promoting the metacognitive development of young children.

Lastly, the present research offers a valuable perspective on metacognitive development in early childhood education, highlighting the potential influence of data collection instruments, especially concerning children's gender. Therefore, this study emphasizes the necessity for gender-neutral data collection tools. The study provides a deeper understanding of metacognitive growth in young children by demonstrating the need for more inclusive assessment instruments. The findings emphasize the importance of developing and adopting more gender-neutral data collection tools to ensure fairness and accuracy in assessing metacognitive development.

5.2.2. Implications for Practice

Studies have shown that childcare quality directly impacts young children's development in childcare settings (Sylva et al., 2011; van Huizen & Plantenga, 2018) and that early childhood educators' education indirectly affects children's development by influencing their pedagogical processes (Ulferts et al., 2019). Improving the classroom environment would enhance the quality in these settings and improve the field's practices. This study is significant as it has practical implications for improving early childhood education practices, such as promoting the resilience of educators and supporting the development of metacognitive skills in preschool children, which can enhance the overall quality of early childhood education.

Despite the overemphasis on the significance of metacognitive skills as a 21st-century skill, there are shortcomings in preschool education regarding practical implementation. Although some of the expected gains and indicators outlined in the Ministry of National Education [MoNE] Preschool Education Program in 2013 (MoNE, 2013) can be associated with metacognitive skills (e.g., they generate solutions to problem situations, motivates themselves to accomplish a task or duty, and pay attention to the object/situation/event), there needs to be specific information or examples on this subject in the early childhood education curriculum. Therefore, it is necessary to introduce effective teaching methods and practices that facilitate the

development of these essential skills. Furthermore, creating model activities promoting metacognitive skills can benefit teachers and students. Even, to address these gaps, MoNE could develop a comprehensive booklet or guideline to provide detailed examples and guidance to help teachers become familiar with metacognitive skills and effectively support these processes.

On the other hand, despite significant progress in research to understand metacognitive skills, more research is needed to explore the factors that affect these skills in the early childhood period. Further intervention studies can be conducted to investigate effective methods and practices to promote the development of metacognitive skills in preschool children. Through analyzing the results of these studies, policymakers can develop evidence-based policies and strategies.

To support the metacognitive development of children, the resilience of preschool teachers plays a crucial role. For this reason, it is necessary to investigate the factors affecting the resilience of teachers and provide them with adequate support. One way to enhance the resilience of preschool teachers is by offering psychological assistance or training programs that equip them with effective coping strategies. These interventions can help teachers manage and overcome challenges in their professional lives, which can positively impact their ability to support children's development.

Moreover, children's metacognitive abilities can be positively influenced by the educational background of their teachers, possibly due to their self-efficacy beliefs. For this reason, more in-service training can be given to teachers to reflect what they learn about in the classroom. Teachers can consciously or unconsciously impact children's metacognitive development. However, it has been observed that teachers need support on how to support their students' metacognitive skills. Hence, organizing seminars, training sessions, or courses for teachers on children's metacognitive development can expedite progress in this area. These activities can even be integrated into the early childhood education program, exposing teacher candidates early to increase awareness and knowledge. Thus, with these efforts individuals and societies can be equipped with 21st-century skills and the ability to cope with challenges.

Furthermore, research has shown that the resilience of families also plays a significant role in developing children's metacognitive skills. To foster positive development,

educational institutions can arrange activities encouraging families to spend more quality time together. It is believed that such activities can have a beneficial impact on the growth of both the children and their families. Spending quality time with their families can allow children to observe and learn from them, gaining valuable knowledge and skills.

In addition, families can benefit from informative training sessions or seminars to improve their understanding of the importance of metacognitive development in children. Families can learn efficient methods and strategies to support the development of their children's metacognitive skills, which can be applied at home. Also, through these trainings, parents can identify the potential barriers to metacognitive development in their children and provide the necessary support to overcome those challenges. Additionally, schools and teachers can provide developmental progress reports to families on their children's metacognitive development, enabling them to take a more active role in their children's education. By increasing families' understanding of their children's metacognitive skills, their self-efficacy beliefs can be strengthened, leading to more opportunities to support the development of these skills in their children.

5.3. Recommendations for Future Research

This study aimed to explore the relationship between the metacognitive skills of preschool children and the resilience of their families and preschool teachers as well as the effects of various demographic variables on preschool children's metacognitive skills, and the resilience of their families and preschool teachers. The findings of the current study could potentially offer valuable insights into how to enhance the metacognitive skills of preschool children, which could be beneficial for educators, researchers, and teacher education programs. Furthermore, several recommendations are proposed for future research to expand the understanding of the topic and contribute to the literature.

The study comprised a sample of 40 preschool teachers, 208 preschool children, and their families, who were attending public and private preschools in Ankara. The data collection was primarily conducted in the Çankaya, Keçiören, Yenimahalle, Altındağ, and Gölbaşı districts of Ankara. However, in order to enhance the generalizability of

the findings, future studies could expand the sample size to include children from diverse districts within Ankara and other cities in Türkiye, as well as involving their families and preschool teachers. Including a larger sample size of children from various socio-economic backgrounds and cultural contexts could also provide a more comprehensive understanding.

Moreover, future research on the metacognitive skills of children and the resilience of their teachers could benefit from the inclusion of male preschool teachers, in addition to their female counterparts. Additionally, investigating the potential correlation between the metacognitive skills of children and those of their families and teachers could be an interesting avenue of research. Another area of interest could be comparing the metacognitive abilities of preschool children who have received formal early childhood education and those who have not.

In addition, despite the growing attention to the metacognitive development of young children, early childhood education remains an area that requires more investigation on this emerging topic. For the current study, the data was collected through six months in 2022. Therefore, longitudinal studies could be designed to understand and examine metacognitive skill development in a more detailed way. Also, future research could explore other potential factors that may contribute to the development of metacognitive skills, such as classroom environment, curriculum design, and teacher training. Additionally, the current study used quantitative data collection instruments; however, qualitative methods could also be used to supplement quantitative data and offer a richer perspective on the development of metacognitive skills. Specifically, interviews or observation could be used with preschool children. In this way, children's ideas, understandings, and self-reflections can shed light on literature.

Furthermore, this study solely relied on preschool teachers to complete the CHILD 3-5 Checklist to assess the metacognitive skills of the preschool children. Nonetheless, it is recommended that parents who know their children and spend more time with them, could also fill out the checklist. By doing so, it would be possible to compare the results of both parents and teachers and examine any similarities or differences between their approaches to the development of metacognitive skills in children. This could provide valuable insights into the contributing factors that shape metacognitive development in preschool children.

Yıldız-Altan (2022) conducted a study to investigate the effectiveness of a metacognitive intervention program for improving the metacognitive skills of preschool children. Similarly, Dörr et al. (2019) developed an intervention program involving families and teachers to enhance the metacognitive skills of preschool children. These interventions demonstrated positive improvements. As a result, increasing the number of intervention programs and designing various metacognitive skills training programs for pre-service preschool teachers may be worthwhile. Moreover, future research could explore whether metacognitive skills training programs are effective in enhancing the metacognitive skills of families, pre-service and in-service preschool teachers, and children.

Finally, research should be conducted on the theoretical and practical understanding of pre-service preschool teachers in supporting the metacognitive skills of young children. This can help identify whether teacher candidates require more theoretical or practical knowledge related to this topic.

REFERENCES

Adagideli, F. H. (2013). *Investigation of young children's metacognitive and self regulatory abilities in mathematics avtivities* (Publication No. 399420) [Master's thesis, Boğaziçi University]. Council of Higher Education Thesis Center.

Adagideli, F. H., & Ader, E. (2014). Okul öncesi dönemde üstbiliş ve özdüzenleme: değerlendirme, öğretim ve beceriler. In G. Sakız (Ed.), *Özdüzenleme - öğrenmeden öğretime özdüzenleme davranışlarının gelişimi, stratejiler ve öneriler* (pp. 129-153). Nobel Yayıncılık.

Agaibi, C. E., & Wilson, J. P. (2005). Trauma, PTSD, and resilience: A review of the literature. *Trauma, Violence & Abuse*, *6*(3), 195–216. https://doi.org/10.1177/1524838005277438

Agani, F., Landau, J., & Agani, N. (2010). Community-building before, during, and after times of trauma: the application of the LINC model of community resilience in Kosovo. *The American Journal of Orthopsychiatry*, *80*(1), 143-149. https://doi.org/10.1111/j.1939-0025.2010.01017.x

Ajayi, L. (2016). High school teachers' perspectives on the English language arts common core state standards: An exploratory study. *Educational Research for Policy and Practice*, *15*(1), 1-25. https://doi.org/10.1007/s10671-015-9174-3

Akgün, Ö. (2021). *Okul öncesi öğretmenlerinin psikolojik dayanıklılık ve iş doyum düzeylerinin incelenmesi* [*The investigation of preschool teachers' psychological resilience and job satisfaction levels*] (Publication No. 664725) [Master's thesis, Anadolu University]. Council of Higher Education Thesis Center.

Akın, E. (2016). Examining the relation between metacognitive understanding of what is listened to and metacognitive awareness levels of secondary school students. *Educational Research and Reviews, 11*(7), 390-401.

Alexander, J. M., Carr, M., & Schwanenflugel, P. J. (1995). Development of metacognition in gifted children: Directions for future research. *Developmental Review, 15*(1), 1–37. https://doi.org/10.1006/drev.1995.1001

Alexander, J., Fabricius, W., Fleming, V., Zwahr, M., & Brown, S. (2003). The development of metacognitive causal explanations. *Learning and Individuals Differences, 13,* 227– 238.

Alkış, N., & Taşkaya Temizel, T. (2015). The impact of individual differences on influence strategies. *Personality and Individual Differences, 87,* 147–152. https://doi.org/10.1016/j.paid.2015.07.037

Allen, J. R. (1998). Of resilience, vulnerability, and a woman who never lived. *Child and Adolescent Psychiatric Clinics of North America*, *7*(1), 53–71.

Allison, P. D. (2009). Missing data. In R. E. Millsao & A. Maydeu-Olivares (Eds.), *Quantitative Methods in Psychology* (pp. 72-89). Sage Publications.

Allison, S., Stacey, K., Dadds, V., Roeger, L., Wood, A., & Martin, G. (2003). What the family brings: Gathering evidence for strengths-based work. *The Association for Family Therapy and Systemic Practice, 25*, 263-284.

Al Shabibi, A. A., & Alkharusi, H. (2018). Mathematical problem-solving and metacognitive skills of 5th grade students as a function of gender and level of academic achievement. *Cypriot Journal of Educational Sciences, 13*(2), 149-159.

Amato, P. R. (1991). Parental absence during childhood and depression in later life. *Sociological Quarterly, 32*, 543-556. https://doi.org/10.1111/j.1533-8525.1991.tb00153.x

Amato, P. R., Booth, A., Johnson, D. R., & Rogers, S. J. (2007). *Alone together: How marriage in America is changing.* Harvard University Press.

Andersen, I. G., & Jaeger, M. M. (2015). Cultural capital in context: heterogeneous returns to cultural capital across schooling environments. *Social Science Research, 50,* 177–188. https://doi.org/10.1016/j.ssresearch.2014.11.015

Anderson, C. L., Reynolds, T. W., & Gugerty, M. K. (2017). Husband and Wife Perspectives on Farm Household Decision-making Authority and Evidence on Intra-household Accord in Rural Tanzania. *World development, 90,* 169–183. https://doi.org/10.1016/j.worlddev.2016.09.005

Aras, S., & Tantekin-Erden, F. (2020). Documentation panels: supporting young children's self-regulatory and metacognitive abilities. *International Journal of Early Years Education, 28*(1), 63-80. https://doi.org/10.1080/09669760.2019.1592743

Arastaman, G., & Balci, A. (2013). Investigation of high school students' resiliency perception in terms of some variables. *Educational Sciences: Theory and Practice, 13*(2), 922-928.

Arbuckle, J. L. (2019). *IBM® SPSS® Amos™ 26 User's Guide.* AMOS Development Corporation.

Ardelt, M., & Eccles, J. S. (2001). Effects of mothers' parental efficacy beliefs and promotive parenting strategies on inner-city youth. *Journal of Family Issues, 22*(8), 944–972. https://doi.org/10.1177/019251301022008001

Arı, F. A., & Çarkıt, E. (2020). Investigation of resilience in terms of gender: A meta-analysis study. *Research on Education and Psychology, 4,* 34-52.

Arnott, L., Martinez-Lejarreta, L., Wall, K., Blaisdell, C., & Palaiologou, I. (2020). Reflecting on three creative approaches to informed consent with children under six. *British Educational Research Journal, 46,* 786-810. https://doi.org/10.1002/berj.3619

Arnup, J., & Bowles, T. (2016). Should I stay or should I go? Resilience as a protective factor for teachers' intention to leave the teaching profession. *Australian Journal of Education, 60*(3), 229–244. https://doi.org/10.1177/0004944116667620

Artelt, C., Schiefele, U., & Schneider, W. (2001). Predictors of reading. *European Journal of Psychology of Education, 16*(3), 363–383.

Artelt, C., & Schneider, W. (2015). Cross-country generalizability of the role of metacognitive knowledge in students' strategy use and reading competence. *Teachers College Record, 117*(1), 1–32.

Aschaffenburg, K., & Maas, I. (1997). Cultural and educational careers: The dynamics of social reproduction. *American Sociological Review, 62*(4), 573-587. https://doi.org/10.2307/2657427

Ataca, B. (2006). Turkey. In J. Georgas, J. W. Berry, F. J. R. van de Vijver, Ç. Kağitçibaşi, & Y. H. Poortinga (Eds.), *Families across cultures: A 30-nation psychological study* (pp. 467–474). Cambridge University Press.

Ataca, B., & Sunar, D. (1999). Continuity and change in Turkish urban family life. P*sychology and Developing Societies, 11*(1), 77-90. https://doi.org/10.1177/0971333699 01100104

Avargil, S., Lavi, R., & Dori, Y. J. (2018). Students' Metacognition and Metacognitive Strategies in Science Education. In Y. J. Dori, Z. R. Mevarech, & D. R. Baker (Eds.), *Cognition, metacognition, and culture in STEM education* (pp. 33-64). Springer. https://doi.org/10.1007/978-3-319-66659-4_3

Aydın, İ. (2002). *İş Yaşamında Stres* (2nd ed.). Pegem Yayıncılık.

Aydin, B., & Kaya, A. (2016). Sources of stress for teachers working in private elementary schools and methods of coping with stress. *Universal Journal of Educational Research, 4*(12A), 186-195. https://doi.org/10.13189/ujer.2016.041324

Azad, G., Blacher, J., & Marcoulides, G. (2014). Longitudinal models of socio-economic status. *International Journal of Behavioral Development, 38*(6), 509–517. https://doi.org/10.1177/0165025414532172

Azeem, S. M. (2010). Personality hardiness, job involvement and job burnout among teachers. *International Journal of Vocational and Technical Education, 2*(3), 36-40.

Babbs, P. J., & Moe, A. J. (1983). Metacognition: A key for independent learning from text. *Reading Teacher, 36*(4), 422–426.

Bailey, C. S., Zinsser, K. M., Curby, T. W., Denham, S. A., & Bassett, H. H. (2013). Consistently emotionally supportive preschool teachers and children's social-emotional learning in the classroom: implications for center directors and teachers. *Dialog, 16*(2), 131-137.

Bakeman, R., & Quera, V. (2011). *Sequential Analysis and Observational Methods for the Behavioral Sciences*. Cambridge University Press.

Baker, L., & Brown, A. L. (1984). Metacognitive skills and reading. In P. D. Pearson, R. Barr, M. L. Kamil & P. Mosenthal (Eds.), *Handbook of reading research* (pp. 353-394). Longman.

Balay, R. (2000). *Yönetici ve öğretmenlerde örgütsel bağlılık*. Nobel Yayın.

Bámaca-Colbert, M. Y., Gonzales-Backen, M., Henry, C. S., Kim, P. S. Y., Roblyer, M. Z., Plunkett, S. W., & Sands, T. (2018). Family profiles of cohesion and parenting practices and Latino youth adjustment. *Family Process*, *57*(3), 719–736. https://doi.org/10.1111/famp.12314

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44*(9), 1175–1184. https://doi.org/10.1037/0003-066X.44.9.1175

Barone, C. (2006). Cultural capital, ambition and the explanation of inequalities in learning outcomes: A comparative analysis. *Sociology*, *40*(6), 1039–1058. https://doi.org/10.1177/0038038506069843

Bartels, J. M., & Magun-Jackson, S. (2009). Approach–avoidance motivation and metacognitive self-regulation: The role of need for achievement and fear of failure. *Learning and Individual Differences, 19*(4), 459–463. https://doi.org/10.1016/j.lindif.2009.03.008

Baruth, K. E., & Carroll, J. J. (2002). A formal assessment of resilience: The Baruth Protective Factors Inventory. *Journal of Individual Psychology, 58*, 235−244.

Bashir, S., Bajwa, M., & Rana, S. (2014). Teacher as a role model and its impact on the life of female students. *International Journal of Research - Granthaalayah 1*(1), 9-20. https://doi.org/10.29121/granthaalayah.v1.i1.2014.3081

Basım, H. N., & Çetin, F. (2011). The reliability and validity of the Resilience Scale for Adults-Turkish Version. *Turkish Journal of Psychiatry*, *22*(2), 104–114.

Bayat, M. (2007). Evidence of resilience in families of children with autism. *Journal of Intellectual Disability Research, 51*, 702-714. https://doi.org/10.1111/j.1365-2788.2007.00960x

Beltman, S., Mansfield, C., & Price, A. (2011). Thriving not just surviving: A review of research on teacher resilience. *Educational Research Review, 6,* 185-207. https://doi.org/10.1016/j.edrev.2011.09.001

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*(3), 588-606. https://doi.org/10.1037/0033-2909.88.3.588

Bentler, P. M., & Chou, C. P. (1987). Practical issues in structural modeling. *Sociological Methods & Research, 16*(1), 78-117.

Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition*. Lawrence Erlbaum.

Bernard, S., Proust, J., & Clément, F. (2015). Procedural metacognition and false belief understanding in 3- to 5-year-old children. *PLoS ONE, 10*(10), e0141321. https://doi.org/10.1371/journal.pone.0141321

Berns, R. M. (2013). *Child, family, school, community: Socialization and support* (9th ed.). Wadsworth.

Bernshausen, D., & Cunningham, C. (2001, March 1-4). *The role of resiliency in teacher preparation and retention* [Conference presentation]. American Association of Colleges for Teacher Education 53rd Annual Meeting, Dallas, TX, United States. https://files.eric.ed.gov/fulltext/ED451191.pdf

Beyenal, S. (2019). Çalışan anne olmanın ev, iş ve sosyal yaşam üzerindeki etkileri [*The effects of being a working mother on home, work and social life]* (Publication No. 29177211). [Master's thesis, Sakarya University]. ProQuest Dissertations & Theses Global.

Biffi, R. G., & Mamede, M. V. (2010). Perception of family functioning among relatives of women who survived breast cancer: gender differences. *Revista latino-americana de enfermagem, 18*(2), 269–277. https://doi.org/10.1590/s0104-11692010000200019

Bitsika, V., Sharpley, C., & Bell, R. (2013). The buffering effect of resilience upon stress, anxiety and depression in parents of a child with an autism spectrum disorder. *Journal of Developmental and Physical Disabilities,* 25, 533-543. https://doi.org/10.1007/s10882-013-9333-5

Black, K., & Lobo, M. (2008). A conceptual review of family resilience factors. *Journal of Family Nursing, 14*(1), 33–55. https://doi.org/10.1177/1074840707312237

Black, S. (2005). Teaching students to think critically. *The Education Digest, 70*(6), 42–47.

Blaise, M. (2005). *Playing it straight!: Uncovering gender discourses in the early childhood classroom*. Routledge.

Blakemore, J. E. O., & Centers, R. E. (2005). Characteristics of boys' and girls' toys. *Sex Roles: A Journal of Research, 53*(9-10), 619–633. https://doi.org/10.1007/s11199-005-7729-0

Blankson, A. N., Weaver, J. M., Leerkes, E. M., O'Brien, M., Calkins, S. D., & Marcovitch, S. (2017). Cognitive and emotional processes as predictors of a successful transition into School. *Early Education Development, 28*(1), 1–20. https://doi.org/10.1080/10409289.2016.1183434

Bobek, B. L. (2002). Teacher resiliency: A key to career longevity. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 75*(4), 202-205. https://doi.org/10.1080/00098650209604932

Bodrova, E., & Leong, D. J. (2005). Self-regulation: A foundation for early learning. *Early Childhood, 85*(1), 30-35.

Bonefeld, M., & Dickhäuser, O. (2018). (Biased) Grading of students' performance: Students' names, performance level, and implicit attitudes. *Frontiers in Psychology*, *9*, 481. https://doi.org/10.3389/fpsyg.2018.00481

Boss, P. (2002). *Family stress management: A contextual approach*. Sage Publications. https://doi.org/10.4135/9781452233895

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. https://doi.org/10.1108/HE-11-2013-0062

Bowen, M. (1978). *Family therapy in Clinical practice*. Jason Aronson.

Bowlby, J. (1977). The making and breaking of affectional bonds: I. Aetiology and psychopathology in the light of attachment theory. *The British Journal of Psychiatry, 130,* 201–210. https://doi.org/10.1192/bjp.130.3.201

Bowles, T., & Arnup, J. L. (2016). Early career teachers' resilience and positive adaptive change capabilities. *Australian Educational Researcher, 43*(2), 147–164. https://doi.org/10.1007/s13384-015-0192-1

Boyd, M., (2013). "I love my work but…" The professionalization of early childhood education. *The Qualitative Report, 18*(36), 1-20. https://doi.org/10.46743/2160-3715/2013.1470

Boyden, J., & Mann, G. (2005). Children's risk, resilience, and coping in extreme situations. In M. Ungar (Ed.), *Handbook for working with children and youth: Pathways to resilience across cultures and contexts* (pp. 3-26). Sage Publications. https://doi.org/10.4135/9781412976312

Bozgeyikli, H., & Şat, A. (2014). Öğretmenlerde psikolojik dayanıklılık ve örgütsel vatandaşlık davranışlarının bazı değişkenler açısından incelenmesi: Özel okul örneği. *Hak İş Uluslararası Emek ve Toplum Dergisi, 3*(5), 172-191.

Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*(1), 371-399. https://doi.org/10.1146/annurev.psych.53.100901.135233

Bradley, R. H., Whiteside, L., Mundfrom, D. J., Casey, P. H., Kelleher, K. J., & Pope, S. K. (1994). Early indications of resilience and their relation to experiences in the home environments of low birthweight, premature children living in poverty. *Child Development, 65*(2 Spec No), 346–360.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school: Expanded edition*. National Academy Press.

British Ethics Research Association. (2018). *Revised ethical guidelines for educational research.* Retrieved from https://www.bera.ac.uk/publication/ethical- guidelines%20for-educational-research-2018

Bronfenbrenner, U. (1974). Developmental research, public policy, and the ecology of childhood. *Child Development, 45*(1), 1–5. https://doi.org/10.2307/1127743

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*(7), 513-531. https://doi.org/10.1037/0003-066x.32.7.513

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22*(6), 723-742. https://doi.org/10.1037/0012-1649.22.6.723

Bronfenbrenner, U. (1993). Ecological models of human development. In M. Gauvain & M. Cole (Eds.), *Readings on the development of children* (2nd ed., pp. 37-43). Pergamon.

Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T. N. Postlethwaite (Eds.), *The international encyclopedia of education* (pp. 1643-1647). Pergamon.

Bronfenbrenner, U., & Ceci, S. J. (1994). Nature–nurture reconceptualized in developmental perspective: A bioecological model. *Psychological Review, 101*(4), 568-586. https://doi.org/10.1037/0033-295X.101.4.568

Bronfenbrenner, U., & Evans, G. W. (2000). Developmental science in the 21st century: Emerging questions, theoretical models, research designs and empirical findings. *Social Development, 9*, 115-125. https://doi.org/10.1111/1467-9507.00114

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In R. M. Lerner & W. Damon (Eds.), *Handbook of child psycology: Volume one:Theoreticalmodels of human developmental* (pp. 793-828). John Wiley.

Bronson, M. B. (2000). *Self-regulation in early childhood: Nature and nurture*. The Guilford Press.

Brown, A. L., & DeLoache, J. S. (1978). Skills, plans, and self-regulation. In R. S. Siegler (Ed.), *Children's thinking: What develops?* (pp. 3–35). Lawrence Erlbaum Associates.

Brown, A. N., Rankin, K., Picon, M., & Cameron, D. B. (2015). *The state of evidence on the impact of transferable skills programming on youth in low- and middle-income countries* (3ie Scoping Paper No. 4). New Delhi: International Initiative for Impact Evaluation. Retrieved from https://www.edu-links.org/sites/default/files/media/file/sp4-youth_and_transferable_skills.pdf

Brown, J. (1999). Bowen family systems: Theory and practice: Illustration and critique. *Australian and New Zealand Journal of Family Therapy, 20*(2), 94–103. https://doi.org/10.1002/j.1467-8438.1999.tb00363.x

Brown, M. B., & Forsythe, A. B. (1974). Robust Tests for equality of variances. *Journal of the American Statistical Association, 69*, 364-367. https://doi.org/10.1080/01621459.1974.10482955

Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. Guilford Publications.

Brown, A. L. (1987). Metacognition, executive control, self-regulation, and other more mysterious mechanisms. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 65-116). Lawrence Erlbaum Associates.

Bryan, C., O'Shea, D., & MacIntyre, T. (2019). Stressing the relevance of resilience: A systematic review of resilience across the domains of sport and work. *International Review of Sport and Exercise Psychology, 12*(1), 70–111. https://doi.org/10.1080/1750984X.2017.1381140

Bryce, D., & Whitebread, D. (2012). The development of metacognitive skills: Evidence from observational analysis of young children's behavior during problem-solving. *Metacognition and Learning, 7*(3), 197–217. https://doi.org/10.1007/s11409-012-9091-2

Bryce, D., Whitebread, D., & Szücs, D. (2015). The relationships among executive functions. Metacognitive skills and educational achievement in 5 and 7-year-old children. *Metacognition and Learning, 10*, 181–198. https://doi.org/10.1007/s11409-014-9120-4

Buckner, J. C., Mezzacappa, E., & Beardslee, W. R. (2003). Characteristics of resilient youths living in poverty: The role of self-regulatory processes. *Development and Psychopathology, 15*(1), 139–162. https://doi.org/10.1017/s0954579403000087

Burgess, E. W., & Cottrell, L. S., Jr. (1939). *Predicting success or failure in marriage.* Prentice-Hall.

Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (3rd ed.). Routledge.

Cabrera, N. J., Fitzgerald, H. E., Bradley, R. H., & Roggman, L. (2014). The ecology of father-child relationships: An expanded model. *Journal of Family Theory & Review, 6*(4), 336-354. https://doi.org/10.1111/jftr.12054

Camilli, G., Vargas, S., Ryan, S., & Barnett, W. S. (2010). Meta-Analysis of the Effects of Early Education Interventions on Cognitive and Social Development. *Teachers College Record, 112*(3), 579–620. https://doi.org/10.1177/016146811011200303

Cannella, G. S., & Reiff, J. C. (1994). Individual constructivist teacher education: Teachers as empowered learners. *Teacher Education Quarterly*, 27-38.

Carr, M., Kurtz, B. E., Schneider, W., Turner, L. A., & Borkowski, J. G. (1989). Strategy acquisition and transfer among American and German children: Environmental influences on metacognitive development. *Developmental Psychology, 25*(5), 765-771. https://doi.org/10.1037/0012-1649.25.5.765

Carrington, B., & McPhee, A. (2008). Boys' 'underachievement' and the feminization of teaching. *Journal of Education for Teaching, 34*(2), 109–120. https://doi.org/10.1080/02607470801979558

Cassata, A. E., & French, L. A. (2006). Using concept mapping to facilitate metacognitive control in preschool children. In A. J. Cañas & J. D. Novak (Eds.), *Proceedings of the Second International Conference on Concept Mapping* (pp. 598-605). San José, Costa Rica: Universidad de Costa Rica. https://cmc.ihmc.us/cmc2006papers/cmc2006-p144.pdf

Caviola, S., Marmarella, I. C., Cornoldi, C., & Lucangeli, D. (2009). A metacognitive visuospatial working memory training for children. *International Electronic Journal of Elementary Education, 2*(1), 122–136.

Cha, S. E., & Song, Y. J. (2017). Time or money: the relationship between educational attainment, income contribution, and time with children among Korean fathers. *Social Indicators Research, 134,* 195-218. https://doi.org/10.1007/s11205-016-1414-2

Chan, D. W. (2003). Hardiness and its role in the stress-burnout relationship among prospective Chinese teachers in Hong Kong. *Teaching and Teacher Education, 19*(4), 381–395. https://doi.org/10.1016/S0742-051X(03)00023-4

Chapman, R. (2016). A case study of gendered play in preschools: How early childhood educators' perceptions of gender influence children's play. *Early Child Development and Care, 186*(8), 1271–1284. https://doi.org/10.1080/03004430.2015.1089435

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

Cheatham, K. L., & Fernando, D. M. (2021). Family resilience and parental stress in families of children with autism. *The Family Journal, 30*(3), 419–426. https://doi.org/10.1177/10664807211052494

Chen, J. D., & George, R. A. (2005). Cultivating resilience in children from divorced families. *The Family Journal, 13*(4), 452–455. https://doi.org/10.1177/1066480705278686

Chen, M. (2020). Enhancing metacognition through thinking instruction: A case study in a Taiwanese university. *Journal of University Teaching & Learning Practice, 17*(5). https://doi.org/10.53761/1.17.5.16

Chen, S., & Bonanno, G. A. (2020). Psychological adjustment during the global outbreak of COVID-19: A resilience perspective. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*(1), 51–54. https://doi.org/10.1037/tra0000685

Chen, S., & McDunn, B. A. (2022). Metacognition: History, measurements, and the role in early childhood development and education. *Learning and Motivation, 78,* 1-15. https://doi.org/10.1016/j.lmot.2022.101786

Chhatio, S. K., & Mohalik, R. (2016). Metecognitive skills in relation to sex, parental education and achievement of elementary school students. *Asian Journal of Management Sciences & Education, 5*(3), 71-77.

Chi, H., Yeh, H., & Wu, S. F. (2014). How well-being mediates the relationship between social support and teaching effectiveness. *Journal of Education and Learning, 3*(4), 117-130.

Chou, C. P., & Bentler, P. M. (1990). Model modification in covariance structure modeling: A comparison among likelihood ratio, Lagrange multiplier, and Wald tests. *Multivariate Behavioral Research, 25*(1), 115-136.

Chu, W., & Liu, H. (2022). A mixed-methods study on senior high school EFL teacher resilience in China. *Frontiers in Psychology*, *13*, 865599. https://doi.org/10.3389/fpsyg.2022.865599

Ciascai, L., & Lavinia, H. (2011). Gender differences in metacognitive skills. A study of the 8th grade pupils in romania. *Procedia - Social and Behavioral Sciences, 29*, 396-401. https://doi.org/10.1016/j.sbspro.2011.11.255

Cicchetti, D. (2013). Annual Research Review: Resilient functioning in maltreated children: Past, present, and future perspectives. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *54*(4), 402–422. https://doi.org/10.1111/j.1469-7610.2012.02608.x

Cihan-Güngör, H. (2014). Aile yılmazlığı değerlendirme ölçeğinin türkçeye uyarlanması geçerlik ve güvenirlik çalışması. *Turkish Studies-International Periodical For the Languages, Literature, and History of Turkish and Turkic, 9*(5), 497-512. http://dx.doi.org/10.7827/TurkishStudies.6719

Cihan, H., & Calik-Var, E. (2022). Developing a model on the factors affecting family resilience in the COVID-19 pandemic: Risk and protective factors. *Current Psychology*, 1–16. https://doi.org/10.1007/s12144-022-03008-y

Clandinin, D. J., Long, J., Schaefer, L., Downey, C. A., Steeves, P., Pinnegar, E., & Wnuk, S. (2015). Early career teacher attrition: Intentions of teachers beginning. *Teaching Education, 26*(1), 1-16.

Clerc, J., Miller, P. H., & Cosnefroy, L. (2014). Young children's transfer of strategies: Utilization deficiencies, executive function, and metacognition. *Developmental Review, 34*(4), 378–393. https://doi.org/10.1016/j.dr.2014.10.002

Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2010). Teacher credentials and student achievement in high school: A cross-subject analysis with student fixed effects. *The Journal of Human Resources, 45*(3), 655–681.

Cohan, C. L. (2010). Family transitions following natural and terrorist disaster: Hurricane Hugo and the September 11 terrorist attack. In T. W. Miller (Ed.), *Handbook of stressful transitions across the lifespan* (pp. 149–164). Springer. https://doi.org/10.1007/978-1-4419-0748-6_8

Cohen, J. (1988). S*tatistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159. https://doi.org/10.1037//0033-2909.112.1.155

Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., & York, R. L. (1966). Equality of educational opportunity. U.S. Department of Health, Education & Welfare Office of Education. Retrieved from https://files.eric.ed.gov/fulltext/ED012275.pdf

Collishaw, S., Pickles, A., Messer, J., Rutter, M., Shearer, C., & Maughan, B. (2007). Resilience to adult psychopathology following childhood maltreatment: evidence from a community sample. *Child Abuse & Neglect, 31*(3), 211–229. https://doi.org/10.1016/j.chiabu.2007.02.004

Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety, 18*(2), 76-82.

Coughlin, C., Hembacher, E., Lyons, K. E., & Ghetti, S. (2015). Introspection on uncertainty and judicious help-seeking during the preschool years. *Developmental Science, 18*(6), 957–971. https://doi.org/10.1111/desc.12271

Coutu, D. L. (2002). How resilience works. *Harvard business review*, *80*(5), 46-51.

Coyle, J. P. (2011). Resilient families help make resilient children. *Journal of Family Strengths, 11*(1), 1-16.

Creswell, J. W. (2013). *Research design: Qualitative quantitative and mixed methods approaches* (3rd ed.). Sage Publications.

Creswell, J. W. (2015). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Prentice Hall.

Crompton, H., Chigona, A., & Burke, D. (2023). Teacher resilience during covid-19: Comparing teachers' shift to online learning in South Africa and the United States. *TechTrend*, 1–14. https://doi.org/10.1007/s11528-022-00826-6

Cross, D. R., & Paris, S. G. (1988). Developmental and instructional analyses of children's metacognition and reading comprehension. *Journal of Educational Psychology, 80*(2), 131–142. https://doi.org/10.1037/0022-0663.80.2.131

Cunningham, A., & Renk, K. (2018). Parenting in the context of childhood trauma: Self-efficacy as a mediator between attributions and parenting competence. *Journal of Child and Family Studies, 27*(3), 895-906. https://doi.org/10.1007/s10826-017-0899-x

Çelikkaleli, Ö., & Kaya, S. (2016). University students' interpersonal cognitive distortions, psychological resilience, and emotional self-efficacy according to sex and gender roles. *Journal of Pegem Education and Training, 6*(2), 187-212.

Çiftçi-Arıdağ, N., & Ünsal-Sevdooğulları, S. (2019). Lise öğrencilerinin yaşam doyumu ve yılmazlık düzeylerinin anne-baba tutumlarıyla ilişkisi açısından incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 34*(4), 1037-1060. https://doi.org/10.16986/HUJE.2018038527

Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2021). *Sosyal bilimler için çok değişkenli istatistik: SPSS ve LISREL uygulamaları* (6th ed.). Pegem Akademi.

Dakin, J., & Wampler, R. (2008). Money doesn't buy happiness, but it helps: Marital satisfaction, psychological distress, and demographic differences between low- and middle-income clinic couples. *American Journal of Family Therapy, 36*(4), 300–311. https://doi.org/10.1080/01926180701647512

Danby, S., Ewing, L., & Thorpe, K. (2011). The novice researcher: Interviewing young children. *Qualitative Inquiry*, *17*(1), 74–84. https://doi.org/10.1177/1077800410389754

Day, C., Kington, A., Stobart, G., & Sammons, P. (2006). The personal and professional selves of teachers: stable and unstable identities. *British Educational Research Journal, 32*(4), 601-616. https://doi.org/10.1080/01411920600775316

Deák, G. O., & Narasimham, G. (2003). Is perseveration caused by inhibition failure? Evidence from preschool children's inferences about word meanings. *Journal of Experimental Child Psychology, 86*(3), 194-222. https://doi.org/10.1016/j.jecp.2003.08.001

Dearden, J. (2004). Resilience: A study of risk and protective factors from the perspective of young people with experience of local authority care. *Support for Learning, 19*(4), 187-193. https://doi.org/10.1111/j.0268-2141.2004.00346.x

Deater-Deckard, K. (2005). Parenting stress and children's development: Introduction to the special issue. *Infant and Child Development, 13,* 111–15.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deković, M., & Buist, K. L. (2005). Multiple perspectives within the family: Family relationship patterns. *Journal of Family Issues, 26*(4), 467–490. https://doi.org/10.1177/0192513X04272617

Delahaij, R., van Dam, K., Gaillard, A. W. K., & Soeters, J. (2011). Predicting performance under acute stress: The role of individual characteristics. *International Journal of Stress Management, 18*(1), 49–66. https://doi.org/10.1037/a0020891

DeLoache, J. S., Cassidy, D. J., & Brown, A. L. (1985). Precursors of mnemonic strategies in very young children's memory. *Child Development*, *56*(1), 125–137.

Demir, M. K., & Arı, E. (2013). A local view of teacher problems. *Ondokuz Mayis University Journal of Education Faculty, 32*(1), 107-126.

Desoete, A., Roeyers, H., & Buysse, A. (2001). Metacognition and mathematical problem solving in grade 3. *Journal of Learning Disabilities*, *34*(5), 435–449. https://doi.org/10.1177/002221940103400505

Destan, N., Hembacher, E., Ghetti, S., & Roebers, C. M. (2014). Early metacognitive abilities: the interplay of monitoring and control processes in 5- to 7-year-old children. *Journal of Experimental Child Psychology*, *126*, 213–228. https://doi.org/10.1016/j.jecp.2014.04.001

DeVries, R. (1997). Piaget's Social Theory. *Educational Researcher*, *26*(2), 4–17. https://doi.org/10.3102/0013189X026002004

de Boer, H., Donker, A. S., Kostons, D. D., & van der Werf, G. P. (2018). Long-term effects of metacognitive strategy instruction on student academic performance: *A meta-analysis. Educational Research Review*, *24*, 98–115. https://doi.org/10.1016/j.edurev.2018.03.002

de Bruin, A. B., Thiede, K. W., Camp, G., & Redford, J. (2011). Generating keywords improves metacomprehension and self-regulation in elementary and middle school children. *Journal of Experimental Child Psychology*, *109*(3), 294–310. https://doi.org/10.1016/j.jecp.2011.02.005

De Caroli, M. E., & Sagone, E. (2014). Generalized self-efficacy and well-being in adolescents with high vs. low scholastic self-efficacy. *Procedia - Social and Behavioral Sciences, 141*, 867- 874.

De Jager, B., Jansen, M., & Reezigt, G. (2005). The development of metacognition in primary school learning environments. *School Effectiveness and School Improvement, 16*(2), 179-196. https://doi.org/10.1080/09243450500114181

De Montigny, F., & Lacharité, C. (2005). Perceived parental efficacy: concept analysis. *Journal of Advanced Nursing*, *49*(4), 387–396. https://doi.org/10.1111/j.1365-2648.2004.03302.x

Den Hartigh, R. J. R., & Hill, Y. (2022). Conceptualizing and measuring psychological resilience: What can we learn from physics? *New Ideas in Psychology, 66*, 100934. https://doi.org/10.1016/j.newideapsych.2022.100934

Diallo, I., & Maizonniaux, C. (2016). Policies and pedagogies for students of diverse backgrounds. *International Journal of Pedagogies and Learning, 11*(3), 201-210. https://doi.org/10.1080/22040552.2016.1279526

Dignath, C., Buettner, G., & Langfeldt, H. P. (2008). How can primary school students learn self-regulated learning strategies most effectively? A meta-analysis on self-regulation training programmes. *Educational Research Review, 3,* 101–129. https://doi.org/10.1016/j.edurev.2008.02.003

Diker-Coşkun, Y., Garipağaoğlu, Ç., & Tosun, Ü. (2014). Analysis of the relationship between the resilience level and problem solving skills of university students. *Procedia - Social and Behavioral Sciences, 114,* 673-680.

Dinsmore, D. L., Alexander, P. A., & Loughlin, S. M. (2008). Focusing the conceptual lens on metacognition, self-regulation, and self-regulated learning. *Educational Psychology Review, 20*(4), 391–409. https://doi.org/10.1007/s10648-008-9083-6

Doney, P. A. (2013). Fostering resilience: A necessary skill for teacher retention. *The Association for Science Teacher Education, 24,* 646-684. https://doi.org/10.1007/s10972-012-9324-x

Donker, A. S., de Boer, H., Kostons, D., van Ewijk, C. D., & van der Werf, M. P. (2014). Effectiveness of learning strategy instruction on academic performance: A meta analysis. *Educational Research Review, 11,* 1–26.

Doran, C., & Cameron, R. J. (1995). Learning about learning: Metacognitive approaches in the classroom. *Educational Psychology in Practice, 11*(2), 15-23. https://doi.org/10.1080/0266736950110203

Dörr, L., & Perels, F. (2019). Improving metacognitive abilities as an important prerequisite for self-regulated learning in preschool children. *International Electronic Journal of Elementary Education, 11*(5), 449-459. https://doi.org/10.26822/iejee.2019553341

Drake, C. (2002). Experience counts: Career stage and teachers' responses to mathematics education reform. *Educational Policy, 16*(2), 311–337. https://doi.org/10.1177/0895904802016002004

Drudy, S. (2008). Gender balance/gender bias: The teaching profession and the impact of feminisation. *Gender and Education, 20*(4), 309–323. https://doi.org/10.1080/09540250802190156

Dufrense, E. R., & Kobasigawa, Y. (1989). Children's spontaneous allocation of study time. Differential and sufficient aspects. *Journal of Experimental Child Psychology, 47,* 274–296.

Dumais, S. A. (2006). Early childhood cultural capital, parental habitus, and teachers' perceptions. *Poetics, 34*(2), 83–107. https://doi.org/10.1016/j.poetic.2005.09.003

Eggen, P., & Kauchak, D. (2012). *Strategies and models for teachers: Teaching content and thinking skills* (6th ed.). Pearson.

Efklides, A. (2001). Metacognitive Experiences in Problem Solving. In A. Efklides, J. Kuhl & R. M. Sorrentino (Eds.), *Trends and prospects in motivation research* (pp. 297–323). Springer. https://doi.org/10.1007/0-306-47676-2

Efklides, A. (2002). Feelings and judgments as subjective evaluations of cognitive processing: How reliable are they? *Psychology: The Journal of the Hellenic Psychological Society, 9*(2), 163–184.

Efklides, A. (2008). Metacognition: Defining its facets and levels of functioning in relation to self-regulation and co-regulation. *European Psychologist, 13*(4), 277–287. https://doi.org/10.1027/1016-9040.13.4.277

Efklides, A. (2009). The role of metacognitive experiences in the learning process. *Psicothema, 21*(1), 76–82.

Efklides, A. (2011). Interactions of metacognition with motivation and affect in self-regulated learning: The MASRL model. *Educational Psychologist, 46*(1), 6–25. https://doi.org/10.1080/00461520.2011.538645

Efklides, A., Kiorpelidou, K., & Kiosseoglou, G. (2006). Worked-out examples in mathematics: Effects on performance and metacognitive experiences. In A. Desoete & M. Veenman (Eds.), *Metacognition in mathematics* (pp. 11- 33). NOVA.

Eilertsen, M. E., Hjemdal, O., Le, T. T., Diseth, T. H., & Reinfjell, T. (2016). Resilience factors play an important role in the mental health of parents when children survive acute lymphoblastic leukaemia. *Acta Paediatrica, 105*(1), e30–e34. https://doi.org/10.1111/apa.13232

Eldeniz Çetin, M., & Sönmez, M. (2018). Identification of the problems experienced by mothers with children with multiple disabilities. *Elementary Education Online, 17*(3), 1252–1267. https://doi.org/10.17051/ilkonline.2018.466339

Ellison, D. W., & Mays-Woods, A. (2018). In the face of adversity: Four physical educator's experiences of resilience in high-poverty schools. *Physical Education and Sport Pedagogy*, 24(1), 59–72. https://doi.org/10.1080/17408989.2018.1536201

Elosúa, M. R., García-Madruga, J. A., Vila, J. O., Gómez-Veiga, I., & Gil, L. (2013). Improving reading comprehension: From metacognitive intervention on strategies to the intervention on working memory executive processes. *Universitas Psychologica, 12*(5), 1425-1438. https://doi.org/10.11144/Javeriana.UPSY12-5.ircm

Erdmann, K. A., Vetter, V. C., Schäferling, M., Reuner, G., & Hertel, S. (2019). "How do we solve this task?": Parental scaffolding with full- and preterm toddlers. *Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie, 51*(3), 135-149. https://doi.org/10.1026/0049-8637/a000215

Escolano-Pérez, E., Herrero-Nivela, M. L., & Anguera, M. T. (2019). Preschool metacognitive skill assessment in order to promote educational sensitive response from mixed-methods approach: Complementarity of data analysis. *Frontiers in Psychology, 10*(1298) 1-22. https://doi.org/10.3389/fpsyg.2019.01298

Esen-Aktay, T. (2010). *Risk altındaki ortaöğretim 9. ve 10. sınıf öğrencilerinin kendini toparlama güçlerinin incelenmesi [Study of resilience of 9th and 10th class secondary school students who are under risk]* (Publication No. 279580) [Master's thesis, Gazi University]. Council of Higher Education Thesis Center.

Falke, S. I., & Larson, J. H. (2007). Premarital predictors of remarital quality: Implications for clinicians. *Contemporary Family Therapy: An International Journal, 29*, 9–23.

Fallesen, P., & Gähler, M. (2020). Family type and parents' time with children: Longitudinal evidence for Denmark. *Acta Sociologica, 63*(4), 361–380. https://doi.org/10.1177/0001699319868522

Fan, Y., Chen, J., Shirkey, G., John, R., Wu, S. R., Park, H., & Shao, C. (2016). Applications of structural equation modeling (SEM) in ecological studies: An updated review. *Ecological Processes, 5,* 19. https://doi.org/10.1186/s13717-016-0063-3

Fan, X., & Sivo, S. A. (2007). Using fit indices in covariance structure modeling: Can we trust them?. *Educational and Psychological Measurement, 67*(4), 733-758.

Fazey, I., Fazey, J. A., Fischer, J., Sherren, K., Warren, J., Noss, R. F., & Dovers, S. R. (2007). Adaptive capacity and learning to learn as leverage for social-ecological resilience. *Frontiers in Ecology and the Environment, 5*(7), 375-380.

Fergusson, D. M., & Horwood, L. J. (2001). The Christchurch Health and Development Study: Review of findings on child and adolescent mental health. *Australian and New Zealand Journal of Psychiatry, 35*, 287-296. https://doi.org/10.1046/j.1440-1614.2001.00902.x

Field, A. P. (2013). *Discovering Statistics Using IBM SPSS Statistics* (4th ed.). Sage.

Fischer, C. S. (1982). *To dwell among friends*. University of Chicago Press.

Fischer, I., Schober, P. S., & Nagengast, B. (2021). Parental relationship quality and children's behavioural problems: Childcare quality as a protective factor?. *Journal of Family Research, 33*(3), 703–733. https://doi.org/10.20377/jfr-379

Fisher, R. (1998). Thinking about thinking: developing metacognition in children. *Early Child Development and Care, 141*(1), 1–15. https://doi:10.1080/0300443981410101

Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231-235). Lawrence Erlbaum.

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. (1987) Speculations about the Nature and Development of Metacognition. In F.E. Weinert & R.H. Kluwe (Eds.), *Metacognition, Motivation and Understanding.* Lawrence Erlbaum.

Flavell, J. H. (2000). Development of children's knowledge about the mental world. *International Journal of Behavioral Development, 24*(1), 15–23. https://doi.org/10.1080/016502500383421

Flavell, J. H., Miller, P. H., & Miller, S. A. (2002). *Cognitive development* (4th ed.). Pearson Education.

Fleming, J., & Ledogar, R. J. (2008). Resilience, an evolving concept: A review of literature relevant to aboriginal research. *Pimatisiwin, 6*(2), 7–23.

Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts and theory. *European Psychologist, 18*(1), 12–23. https://doi.org/10.1027/1016-9040/a000124

Fletcher, L., & Carruthers, P. (2012). Metacognition and reasoning. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, 367*(1594), 1366–1378. https://doi.org/10.1098/rstb.2011.0413

Fraenkel, J. R., Wallen, N. E., & Hyun, H. (2012). *How to design and evaluate research in education*. (8th ed.). McGraw Hill Pub.

Fraser, M. W. (2004). *Risk and resilience in childhood: An ecological perspective* (2nd ed.). NASW Press.

Freeman, M., & Mathison, S. (2009). *Researching children's experiences.* Guilford Press.

Friborg, O., Barlaug, D., Martinussen, M., Rosenvinge, J. H., & Hjemdal, O. (2005). Resilience in relation to personality and intelligence. *International Journal of Methods in Psychiatric Research, 14*(1), 29–42. https://doi.org/10.1002/mpr.15

Friborg, O., Hjemdal, O., Martinussen, M., & Rosenvinge, J. H. (2009). Empirical support for resilience as more than the counterpart and absence of vulnerability and symptoms of mental disorder. *Journal of Individual Differences, 30*(3), 138-151.

Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2003). A new rating scale for adult resilience: what are the central protective resources behind healthy adjustment? *International Journal of Methods in Psychiatric Research, 12*(2), 65-76. https://doi.org/10.1002/mpr.143

Friedman, I. A. (1995). Measuring school principal-experienced burnout. *Educational and Psychological Measurement, 55*(4), 641-651. https://doi.org/10.1177/0013164495055004012

Flavell, J.H. (1987) Speculations about the nature and development of metacognition. In F.E. Weinert & R.H. Kluwe (Eds.), *Metacognition, motivation and understanding.* Lawrence Erlbaum.

Flavell, J. H. (2000). Development of children's knowledge about the mental world. *International Journal of Behavioral Development, 24*(1), 15–23. https://doi.org/10.1080/016502500383421

Friedman, I. A. (1995). Measuring school principal-experienced burnout. *Educational and Psychological Measurement, 55*(4), 641-651. https://doi.org/10.1177/0013164495055004012

García Fernández, T., Fernández Cueli, M. S., Rodríguez Pérez, C., Krawec, J., & González Castro, M. P. (2015). Metacognitive knowledge and skills in students with deep approach to learning. Evidence from mathematical problem solving. *Revista de Psicodidáctica, 20*(2), 209-226. https://doi.org/10.1387/RevPsicodidact.13060

Garmezy, N. (1991). Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *American Behavioral Scientist, 34*(4), 416-430.

Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. *Child Development*, *55*(1), 97–111.

Garmezy, N., & Rutter, M. (1983). *Stress, coping, and development in children*. McGraw-Hill.

Garofalo, J., & Lester, F. K. (1985). Metacognition, cognitive monitoring, and mathematical performance. *Journal for Research in Mathematics Education, 16*(3), 163–176. https://doi.org/10.2307/748391

Garzón, D. F. M., Bustos, A. P. H., & Lizarazo, J. O. U. (2020). Relationship between metacognitive skills, gender, and level of schooling in high school students. *Suma Psicológica*, *27*(1), 9-17. https://doi.org/10.14349/sumapsi.2020.v27.n1.2

Gascoine, L., Higgins, S., & Wall, K. (2017). The assessment of metacognition in children aged 4-16 years: a systematic review. *Review of Education, 5*(1), 3–57. https://doi.org/10.1002/rev3.3077

Gaumé, C., & Wunsch, G. (2010). Self-rated health in the Baltic countries, 1994–1999. *European Journal of Population/Revue européenne de Démographie, 26*(4), 435-457. https://doi.org/10.1007/s10680-010-9217-7

Gavidia-Payne, S., Denny, B., Davis, K., Francis, A., & Jackson, M. (2015). Parental resilience: A neglected construct. *Clinical Psychologist, 19*, 111-121. https://doi.org/10.1111/cp.12053

Gay, L. R., Mills, G. E., & Airasian, P. W. (2012). *Educational research: Competencies for analysis and applications* (10th ed.). Pearson.

Gazi, Y. C. (2018). *İlkokul öğretmenlerinin toplumsal cinsiyet farkındalığı üzerine niteliksel bir araştırma: İstanbul Anadolu yakasında bir ilkokul örneği [A qualitative research on the primary school teachers' gender awareness: an example of a primary school from anatolian side of İstanbul]* (Publication No. 528904) [Master's thesis, İstanbul Maltepe University]. Council of Higher Education Thesis Center.

George, D., & Mallery, P. (2003). *SPSS for windows step by step: A simple guide and reference.* Pearson Education.

Gerçek, M., & Yılmaz-Börekçi, D. (2019). "Resilience" kavramına örgüt bağlamında Türkçe karşılık önerileri. *Ç.Ü. Sosyal Bilimler Enstitüsü Dergisi, 28*(2), 198-213.

Geurten, M., & Bastin, C. (2019). Behaviors speak louder than explicit reports: Implicit metacognition in 2.5-year-old children. *Developmental Science, 22*(2), e12742. https://doi.org/10.1111/desc.12742

Geurten, M., Willems, S., & Meulemans, T. (2015). *Are children conservative or liberal?Involvement of the distinctiveness heuristic in decision making.* University of Liege.

Gilligan, R. (2000). Adversity, resilience and young people: The protective value of positive school and spare time experiences. *Children & Society, 14*(1), 37-47. https://doi.org/10.1111/j.1099-0860.2000.tb00149.x

Girgin, G., & Baysal, A. (2005). Zihinsel engelli öğrencilere eğitim veren öğretmenlerin mesleki. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, 18*(18), 1-10.

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

Glaser, R., & Chi, M. T. H. (1988). Overview. In M. T. H. Chi, R. Glaser, & M. J. Farr (Eds.), *The nature of expertise* (pp. xv-xxviii). Lawrence Erlbaum Associates.

Goldstein, S., & Brooks, R. B. (Eds.). (2013). Why study resilience? In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 3–14). Springer Science + Business Media. https://doi.org/10.1007/978-1-4614-3661-4_1

Gonzales, C. R., Fabricius, W. V., & Kupfer, A. S. (2018). Introspection plays an early role in children's explicit theory of mind development. *Child Development*, *89*(5), 1545–1552. https://doi.org/10.1111/cdev.12876

Goodman, J. H. (2004). Coping with trauma and hardship among unaccompanied refugee youths from Sudan. *Qualitative Health Research, 14*(9), 1177–1196. https://doi.org/10.1177/1049732304265923

Goodson, B. D., & Hess, R. D. (1975). *Parents as teachers of young children: An evaluative review of some contemporary concepts and programs.* Stanford University. (ERIC Document Reproduction Service No. ED 136 967)

Goupil, L., & Kouider, S. (2016). Behavioral and neural indices of metacognitive sensitivity in preverbal infants. *Current Biology*, *26*(22), 3038–3045. https://doi.org/10.1016/j.cub.2016.09.004

Gourgey, A. (2010). Metacognition in basic skills instruction. In H. J. Hartman (Ed.), *Metacognition in learning and instruction* (pp. 17–32). Springer.

Gourlay, C., Mushin, I., & Gardner, R. (2020). Young children's responses to teachers' metacognitive questions. *International Journal of Early Years Education, 29*(4), 371-390. https://doi.org/10.1080/09669760.2020.1742671

Grand National Assembly of Turkiye. (2023). *Memur ve emekli maaş artişlarina ilişkin kanun teklifi, TBMM plan ve bütçe komisyonunda kabul edildi.* Retrieved from https://www.tbmm.gov.tr/Haber/Detay?Id=42fd8d05-7474-4c70-9cef-0185963eb390

Gravetter, F. J., Wallnau, L. B., Forzano, L. B., & Witnauer, J. E. (2020). *Essentials of statistics for the behavioral sciences* (10th ed.). Cengage Learning.

Gray, C., & Leith, H. (2004). Perpetuating gender stereotypes in the classroom: A teacher perspective. *Educational Studies, 30*(1), 3–17. https://doi.org/10.1080/0305569032000159705

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

Greeff, A. P., & Ritman, I. N. (2005). Individual characteristics associated with resilience in single-parent families. *Psychological Reports*, *96*(1), 36–42. https://doi.org/10.2466/pr0.96.1.36-42

Greenfield, B. (2015). How can teacher resilience be protected and promoted? *Educational and Child Psychology, 32*(4), 51-68. https://doi.org/10.53841/bpsecp.2015.32.4.52

Griffith, P. L., & Ruan, J. (2005). What is metacognition and what should be its role in literacy instruction? In S. E. Israel, C. C. Block, K. L. Bauserman, & K. Kinnucan Welsch (Eds.), *Metacognition in literacy learning: Theory, assessment, instruction, and professional development* (pp. 3-18). Lawrence Erlbaum.

Gu, Q., & Day, C. (2007). Teacher resilience: A necessary condition for effectiveness. *Teaching and Teacher Education, 23*, 1302-1316. https://doi.org/10.1016/j.tate.2006.06.006

Gu, Q., & Li, Q. (2013). Sustaining resilience in times of change: Stories from Chinese teachers. *Asia-Pacific Journal of Teacher Education, 41*(3), 288-303. https://doi.org/10.1080/1359866X.2013.809056

Guhn, M., & Goelman, H. (2011). Bioecological theory, early child development and the validation of the population-level early development instrument. *Social Indicators Research, 103,* 193–217. https://doi.org/10.1007/s11205-011-9842-5

Güney, E., & Yalçın, S. B. (2020). Ebeveynleri boşanmış ve boşanmamış ergenlerin yılmazlık düzeyleri ile algıladıkları sosyal destek düzeyleri. *Necmettin Erbakan Üniversitesi Ereğli Eğitim Fakültesi Dergisi, 2*(2), 217-229. https://doi.org/10.51119/ereegf.2020.7

Güngörmüş, K., Okanlı, A., & Kocabeyoğlu, T. (2015). Hemşirelik öğrencilerinin psikolojik dayanıklılıkları ve etkileyen faktörler [Factors influencing resilience in nursing students]. *Journal of Psychiatric Nursing, 6*(1), 9-14.

Gürgan, U. (2014). Üniversite ögrencilerinin yılmazlık ve iyilik halinin bazı değiskenlere göre incelenmesi [The investigation of the resilience and wellness of university students according to some variables]. *E-Journal of New World Science Academy, 9*(1), 18- 35.

Ha, J. H., Hong, J., Seltzer, M. M., & Greenberg, J. S. (2008). Age and gender differences in the well-being of midlife and aging parents with children with mental health or developmental problems: report of a national study. *Journal of Health and Social Behavior, 49*(3), 301–316. https://doi.org/10.1177/002214650804900305

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2018). *Multivariate data analysis* (8th ed.). Cengage Learning.

Hall, J., Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2009). The role of pre-school quality in promoting resilience in the cognitive development of young children. *Oxford Review of Education, 35*(3), 331-352. https://doi.org/10.1080/03054980902934613

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, *43*(6), 495-513. https://doi.org/10.1016/j.jsp.2005.11.001

Haller, E. P., Child, D. A., & Walberg, H. J. (1988). Can comprehension be taught? A quantitative synthesis of 'metacognitive' studies. *Educational Researcher, 17*, 5–8.

Halpern, D. F. (1998). Teaching critical thinking across domains: dispositions, skills, structure training, and metacognitive monitoring. *American Psychologist, 53*(4), 449–455.

Hamilton, M. (2017). *The Sage encyclopedia of communication research methods.* Sage Publications. https://doi.org/10.4135/9781483381411

Hannah, T. E., & Morrisey, C. (1987). Correlates of psychological hardiness in Canadian adolescents. *The Journal of Social Psychology, 127*(4), 339-344.

Hanushek, E. A., & Rivkin, S. G. (2006). *School quality and the black-white achievement gap*. National Bureau of Economic Research, w12651. https://doi.org/10.3386/w12651

Harding, S., English, N., Nibali, N., Griffin, P., Graham, L., Alom, B., & Zhang, Z. (2019). Self-regulated learning as a predictor of mathematics and reading performance: A picture of students in grades 5 to 8. *Australian Journal of Education, 63*(1), 74-97. https://doi.org/10.1177/0004944119830153

Harrisson, M., Loiselle, C. G., Duquette, A., & Semenic, S. E. (2002). Hardiness, work support and psychological distress among nursing assistants and registered nurses in Quebec. *Journal of Advanced Nursing, 38*(6), 584-591.

Hartman, H. (2002). *Metacognition in learning and instruction*. Kluwer Academic Publishers.

Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: the effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research, 49*(6), 405–418. https://doi.org/10.1111/j.1365-2788.2005.00673.x

Hastings, R. P., Kovshoff, H., Ward, N. J., degli Espinosa, F., Brown, T., & Remington, B. (2005). Systems analysis of stress and positive perceptions in mothers and fathers of pre-school children with autism. *Journal of Autism and Developmental Disorders, 35*(5), 635–644. https://doi.org/10.1007/s10803-005-0007-8

Hattie, J. (2008). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement* (1st ed.). Routledge.

Hayes, N., O'Toole, L., & Halpenny, A. M. (2017). *Introducing Bronfenbrenner: A guide for practitioners and students in early years education* (1st ed.). Routledge. https://doi.org/10.4324/9781315646206

Hemdan, A. (2012).The relationship between metacognition and self-regulation in young children. *Procedia - Social and Behavioral Sciences, 69*, 477-486. https://doi.org/10.1016/j.sbspro.2012.11.436

Henderson, N., & Milstein, M. (2003). *Resiliency in schools: Making it happen for students and educators.* Corwin Press.

Henderson, R. W. (1966). Environmental stimulation and intellectual development of Mexican-American children: An exploratory study. *Dissertation Abstracts International, 55*, 1541-1557.

Hertzog, M. A. (2008). Considerations in determining sample size for pilot studies. *Research in Nursing & Health, 31*, 180-191. https://doi.org/10.1002/nur.20247

Hetherington, E. M., & Stanley-Hagan, M. (1999). The adjustment of children with divorced parents: a risk and resilience perspective. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 40*(1), 129–140.

Holmberg, D., & Wannarka, R. (2018). Metacognitive skills and academic achievement in college. *Journal of College Reading and Learning, 48*(1), 37-53.

Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLoS Med 7*(7): e1000316. https://doi.org/10.1371/journal.pmed.1000316

Hong, W., Bernacki, M. L., & Perera, H. N. (2020). A latent profile analysis of undergraduates' achievement motivations and metacognitive behaviors, and their relations to achievement in science. *Journal of Educational Psychology, 112*(7), 1409-1430. https://doi.org/10.1037/edu0000445

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53-60.

Hosseini, S., Barker, K., & Ramirez-Marquez, J. E. (2016). A review of definitions and measures of system resilience. *Reliability Engineering & System Safety, 145*, 47–61. https://doi.org/10.1016/j.ress.2015.08.006

Howard, S., & Vasseleu, E. (2020). Self-regulation and executive function longitudinally predict advanced learning in preschool. *Frontiers in Psychology, 11*, 1-9.

Hoy, A. W., & Spero, R. B. (2005). Changes in teacher efficacy during the early years of teaching: A comparison of four measures. *Teaching and Teacher Education, 21*(4), 343–356. https://doi.org/10.1016/j.tate.2005.01.007

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55.

İmir, H. M. (2018). *Reggio Emilia temelli dokümantasyon uygulamasının okul öncesi çocuklarının düşünme becerileri üzerindeki etkisi [The effect of Reggio Emilia inspired documentation practice on preschool children's thinking skills]* (Publication No. 527220) [Doctoral dissertation, Gazi University]. Council of Higher Education Thesis Center.

Irwin, L. G., & Johnson, J. (2005). Interviewing young children: Explicating our practices and dilemmas. *Qualitative Health Research*, *15*(6), 821–831. https://doi.org/10.1177/1049732304273862

Iiskala, T., Vauras, M., & Lehtinen, E. (2004). Socially-shared metacognition in peer learning? *Hellenic Journal of Psychology, 1*, 147-178.

Isquith, P. K., Gioia, G. A., & Espy, K. A. (2004). Executive function in preschool children: Examination through everyday behavior. *Developmental Neuropsychology, 26(1),* 403–422.

Ivan, S., Daniela, O., & Jaroslava, B. D. (2023). Sex differences matter: Males and females are equal but not the same. *Physiology & Behavior, 259*, 114038. https://doi.org/10.1016/j.physbeh.2022.114038

Izumi, M., & Gullón-Rivera, A. L. (2018). Family resilience among sojourning Japanese mothers: Links to marital satisfaction and children's behavioral adjustment. *Family and Consumer Sciences Research Journal, 46*(3), 282-296. https://doi.org/10.1111/fcsr.12247

Jacobse, A. E., & Harskamp, E. G. (2012). Towards efficient measurement of metacognition in mathematical problem solving. *Metacognition and Learning, 7*(2), 133–149. https://doi.org/10.1007/s11409-012-9088-x

Jaffee, S. R. (2007). Sensitive, stimulating caregiving predicts cognitive and behavioral resilience in neurodevelopmentally at-risk infants. *Development and Psychopathology, 19*(3), 631–647. https://doi.org/10.1017/S0954579407000326

Jiao, X., Zhang, A., & Bu, X. (2023). Relating metacognition and executive functions to early mathematical and language skills in children aged 4–5 years. *Metacognition and Learning*. https://doi.org/10.1007/s11409-023-09337-y

Johanson, G. A., & Brooks, G. P. (2010). Initial scale development: Sample size for pilot studies. *Educational and Psychological Measurement, 70*(3), 394–400. https://doi.org/10.1177/0013164409355692

Johnson, E., Masser, J. S., & Spears, L. (2021). Self-regulated learners: A comprehensive, translational framework for students with learning disabilities. *Exceptionality*, *31*(1), 52-68. https://doi.org/10.1080/09362835.2021.1938063

Johnson, J., Gooding, P. A., Wood, A. M., & Tarrier, N. (2010). Resilience as positive coping appraisals: Testing the schematic appraisals model of suicide (SAMS). *Behaviour Research and Therapy, 48*(3), 179–186. https://doi.org/10.1016/j.brat.2009.10.007

Johnson, R., & Onwuegbuzie, A. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(14), 14-26. https://doi.org/10.3102/0013189X033007014.

Jones, L., Totsika, V., Hastings, R. P., & Petalas, M. A. (2013). Gender differences when parenting children with autism spectrum disorders: a multilevel modeling approach. *Journal of Autism and Developmental Disorders*, *43*(9), 2090–2098. https://doi.org/10.1007/s10803-012-1756-9

Jöreskog, K.G., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Scientific Software International.

Kaner, S., & Bayraklı, H. (2010). Aile yılmazlık ölçeği: Geliştirilmesi, geçerliği ve güvenirliği. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi, 11*(02), 47-66. https://doi.org/10.1501/Ozlegt_0000000151

Kaner, S., Bayraklı, H., & Guzeller, C. O. (2011). Anne-babaların yılmazlık algılarının bazı değişkenler açısından incelenmesi [Investigating perception of parental resilience in terms of some variables]. *Ankara Üniversitesi Egitim Bilimleri Fakültesi Özel Eğitim Dergisi, 12*(2) 63-78.

Karademas, E. C. (2006). Self-efficacy, social support and well-being. The mediating role of optimism. *Personality and Individual Differences, 40*(6), 1281–1290. https://doi.org/10.1016/j.paid.2005.10.019

Karakelle, S. (2012). Interrelations between metacognitive awareness, perceived problem solving, intelligence and need for cognition. *Education and Science, 37*(164), 239-252.

Karakelle, S., & Canpolat, S. (2008). Analyzing the student relationship styles of the primary school teachers with high burnout level. *Education and Science, 33*(147), 106-120.

Karakelle, S., & Saraç, S. (2010). Üst biliş hakkında bir gözden geçirme: Üstbiliş çalışmaları mı yoksa üst bilişsel yaklaşım mı? [A review on metacognition: Metacognitive research or metacognitive approach?]. *Türk Psikoloji Yazıları, 13*(26), 45–60.

Karnes, M. B., Johnson, L. J., Cohen, T., & Beauchamp, K. D. (1986). Metacognitive strategies with preschoolers. *Teaching Exceptional Children, 19*(1), 54–59.

Karmiloff-Smith, A. (1979). Problem solving processes in children's construction and representations of closed railway circuits. *Archives de Psychologie, 17*, 33–59.

Kaya, M., & Arici, N. (2012). Turkish version of shortened Family Resilience Scale (FRAS): The study of validity and reliability. *Procedia – Social and Behavioral Sciences, 55*, 512-520. https://doi.org/10.1016/j.sbspro.2012.09.531

Kebbi, M. (2018). Stress and coping strategies used by special education and general classroom teachers. *International Journal of Special Education, 33(*1), 34-61.

Kelloway, E. K. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Sage Publications.

Kelloway, E. K. (2015). *Using Mplus for structural equation modeling: A researcher's guide*. Sage Publications.

Kelly, J. B. (2007). Children's living arrangements following separation and divorce: insights from empirical and clinical research. *Family Process*, *46*(1), 35–52. https://doi.org/10.1111/j.1545-5300.2006.00190.x

Kendler, K. S., & Baker, J. H. (2007). Genetic influences on measures of the environment: A systematic review. *Psychological Medicine, 37*(5), 615–626. https://doi.org/10.1017/S0033291706009524

Kerr, M. E., & Bowen, M. (1988). *Family evaluation*. W. W. Norton & Company.

Kıvrak, A. O., & Akandere, M. (2019). Examination of the resilience levels of women and men do sport in gyms. *Turkish Journal of Sport and Exercise, 21*(2), 223-228.

Kim, Y., & Baylor, A. L. (2006). A social-cognitive framework for pedagogical agents as learning companions. *Educational Technology Research and Development, 54*(6), 569-596.

Kinay, İ., Süer, S., & Altındağ Kumaş, Ö. (2021). Investigating relationship between teachers' psychological resilience and student related social stress. *Electronic Journal of Social Sciences, 20*(77), 121-133. https://doi.org/10.17755/esosder.729371

Klassen, R. M. (2010). Confidence to manage learning: the self-efficacy for self-regulated learning of early adolescents with learning disabilities. *Learning Disability Quarterly, 33*(1), 19–30. https://doi.org/10.1177/073194871003300102

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.

Kornell, N., & Metcalfe, J. (2006). Study efficacy and the region of proximal learning framework. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 32*(3), 609–622. https://doi.org/10.1037/0278-7393.32.3.609

Kovac-Cerovic, T. (1996). How can we as parents and educators foster metacognitive development?. In E. Hujala (Ed.), *Childhood education: International perspectives* (pp. 171-184). ERIC. https://eric.ed.gov/?id=ED403061

Kreutzer, M, A., Leonard, S, C., & Flavell, J, H. (1975). An interview study of children's knowledge about memory. *Monographs of the Society for Research in Child Development, 40*(1 serial no. 159), 1-60. https://doi.org/10.2307/1165955

Kroska, A. (2008). Examining husband-wife differences in the meaning of family financial support. *Sociological Perspectives, 51*(1), 63–90. https://doi.org/10.1525/sop.2008.51.1.63

Kuhn, D. (2000a). Theory of mind, metacognition, and reasoning: A life-span perspective. In P. Mitchell & K. J. Riggs (Eds.), *Children's reasoning and the mind* (pp. 301–326). Psychology Press.

Kuhn, D. (2000b). Metacognitive development. *Current Directions in Psychological Science, 9,* 178–181.

Kuhn, D., & Dean, D. (2004). Metacognition: a bridge between cognitive psychology and educational practice. *Theory into Practice, 43*(4), 268–273. https://doi.org/10.1207/s15430421tip4304_4

Kulekci-Akyavuz, E. (2021). Teachers' perceptions of positive psychological capital: A mixed method approach. *International Journal of Research in Education and Science (IJRES), 7*(3), 933-953. https://doi.org/10.46328/ijres.2020

Kumpfer, K. L. (1999). Factors and processes contributing to resilience: The resilience framework. In M. D. Glantz, & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 179-224). Kluwer Academic Publishers.

Kumpfer, K. L., & Bluth, B. (2004). Parent/child transactional processes predictive of resilience or vulnerability to "substance abuse disorders". *Substance Use & Misuse*, *39*(5), 671–698. https://doi.org/10.1081/ja-120034011

Kyllonen, P. C., & Woltz, D. J. (1989). Role of cognitive factors in the acquisition of cognitive skill. In R. Kanfer, P. L. Ackerman, & R. Cudeck (Eds.), *Abilities, motivation, and methodology: The Minnesota symposium on learning and individual differences* (pp. 239-280). Lawrence Erlbaum Associates.

Labarthe, J. C. (1997). Are boys better than girls at building a tower or a bridge at 2 years of age?. *Archives of Disease in Childhood*, *77*(2), 140-144. http://dx.doi.org/10.1136/adc.77.2.140

Lachat-Shakeshaft, Y., Lecerf, T., Morosan, L., Badoud, D. M., & Debbané, M. (2020). Validation of the French version of the « Meta-Cognition Questionnaire » for adolescents (MCQ-Af): Evolution of metacognitive beliefs with age and their links with anxiety during adolescence. *PloS one*, *15*(3), e0230171. https://doi.org/10.1371/journal.pone.0230171

Lackey, N. R., & Wingate, A. L. (1998). The pilot study: One key to research success. In P. J. Brink, & M. J. Wood (Eds.), *Advanced design in nursing research* (2nd ed.). Sage Publications. https://doi.org/10.4135/9781452204840

Lai, E. R. (2011). *Metacognition: A literature review.* Pearson Assessments Research Reports.

Landau, J., Mittal, M., & Wieling, E. (2008). Linking human systems: Strengthening individuals, families, and communities in the wake of mass trauma. *Journal of Marital and Family Therapy*, *34*(2), 193–209. https://doi.org/10.1111/j.1752-0606.2008.00064.x

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. https://doi.org/10.1017/S0954579406060032

Larkin, S. (2006). Collaborative group work and individual development of metacognition in the early years. *Research in Science Education*, *36*(1), 7–27.

Larkin, S. (2009). *Metacognition in young children* (1st ed.). Routledge. https://doi.org/10.4324/9780203873373

Leighton, J. P., Guo, Q., Chu, M. W., & Tang, W. (2018). A pedagogical alliance for academic achievement: Socio-Emotional effects on assessment outcomes. *Educational Assessment, 23*(1), 1–23. https://doi.org/10.1080/10627197.2017.1411188

Leroux, M., & Théorêt, M. (2014). Intriguing empirical relations between teachers' resilience and reflection on practice. *Reflective Practice, 15*(3), 289–303. https://doi.org/10.1080/14623943.2014.900009

Leseman, P. (2012). Preschool and learning-related skills. *Encyclopedia on Early Child Development – Preschool Programs, 1,* 1–12.

Li, D., & Guo, X. (2023). The effect of the time parents spend with children on children's well-being. *Frontiers in Psychology, 14*, 1096128. https://doi.org/10.3389/fpsyg.2023.1096128

Li, P. F., & Wickrama, K. A. S. (2014). Stressful life events, marital satisfaction, and marital management skills of Taiwanese couples. *Family Relations, 63*(2), 193–205. https://doi.org/10.1111/fare.12066

Liang, M., Chen, Q., & Zhou, Y. (2022). The influence of various role models on children's pro-environmental behaviours. *Frontiers in Psychology, 13*, 1-12. https://doi.org/10.3389/fpsyg.2022.873078

Lietz, C. A. (2006). Uncovering stories of family resilience: A mixed methods study of resilient families, part 1. *Families in Society, 87*(4), 575–582. https://doi.org/10.1606/1044-3894.3573

Liew, J., Valiente, C., Hernández, M., & Abera, D. (2019). Self-regulation and reactivity, school-based relationships, and school engagement and achievement. In D. Whitebread, V. Grau, K. Kumpulainen, M. M. McClelland, N. E. Perry, & D. Pino-Pasternak (Eds.), *SAGE handbook of developmental psychology & early childhood education* (pp. 42–62). Sage Publications, Inc.

Liliana, C., & Lavinia, H. (2011). Gender differences in metacognitive skills. A study of the 8th grade pupils in Romania. *Procedia - Social and Behavioral Sciences, 29*(1), 396–401. https://doi.org/10.1016/j.sbspro.2011.11.255

Lin, M., & Bates, A. (2014). Who is in my classroom? Teachers preparing to work with culturally diverse students. *International Research in Early Childhood Education, 5*(1), 27-42.

Lindahl, E. (2016). Are teacher assessments biased? – evidence from Sweden. *Education Economics, 24*(2), 224-238. https://doi.org/10.1080/09645292.2015.1014882

Lund, B., Rheinberg, F., & Gladesch, U. (2001). Ein elterntraining zum motivationsförderlichen erziehungsverhalten in leistungskontexten [Parental training for improving motivation and educational behaviour in performance contexts]. *Zeitschrift für Pädagogische Psychologie, 15*(3), 130-143. https://doi.org/10.1024//1010-0652.15.34.130

Luthar, S. S. (Ed.). (2003). *Resilience and vulnerability: Adaptation in the context of childhood adversities.* Cambridge University Press. https://doi.org/10.1017/CBO9780511615788

Luthar, S. S. (2006). Resilience in development: A synthesis of research across five decades. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology, Vol. 3: Risk, disorder, and adaptation* (pp. 739– 795). John Wiley. https://doi.org/10.1002/9780470939406.ch20

Luthar, S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*, 543–562.

Lyons, K. E., & Ghetti, S. (2013). I don't want to pick! Introspection on uncertainty supports early strategic behavior. *Child Development, 84*(2), 1778-1787. https://doi.org/10.1111/cdev.12004

Määttä, K., & Uusiautti, S. (2020). Nine contradictory observations about girls' and boys' upbringing and education – the strength-based approach as the way to eliminate the gender gap. *Frontiers in Education, 5*, 1-9. https://doi.org/10.3389/feduc.2020.00134

Mackay, R. (2003). Family resilience and good child outcomes: An overview of the research literature. *Social Policy Journal of New Zealand, 20*, 98-118.

MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the ındirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research, 39*(1), 99. https://doi.org/10.1207/s15327906mbr3901_4

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.

Madigan, D. J., & Kim, L. E. (2021). Towards an understanding of teacher attrition: A meta-analysis of burnout, job satisfaction, and teachers' intentions to quit. *Teaching and Teacher Education, 105*, 103425. https://doi.org/10.1016/j.tate.2021.103425

Magnusson, M. S., Burgoon, J. K., & Casarrubea, M. (2016). *Discovering hidden temporal patterns in behavior and interaction: T-pattern detection and analysis with THEM TM*. Springer-Verlag.

Mansfield, C. F., Beltman, S., Price, A., & McConney, A. (2012). Don't sweat the small stuff: Understanding teacher resilience at the chalkface. *Teaching and Teacher Education, 28*, 357-367. https://doi.org/10.1016/j.tate.2011.11.001

Maric, M., & Sakac, M. (2018). Metacognitive components as predictors of preschool children's performance in problem-solving tasks. *Psihologija, 51*(1), 1–16. https://doi.org/10.2298/PSI161123007M

Maric, M., & Sakac, M. (2020). Metacognition in preschool children—Indicators, developmental and socio-educational differences. *Československá Psychologie: Časopis Pro Psychologickou Teorii a Praxi, 64*(1), 1–17.

Marliyani, N., & Suradijono, S. H. (2019). Parental beliefs and children's metacognitive awareness. *Adcances in Social Science, Education and Humanities Research, 229,* 111-120. https://doi.org/10.2991/iciap-18.2019.9

Marsh, H. W., Hau, K. T., & Wen, Z. (2004). In search of golden rules: comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling:A Multidisciplinary Journal, 11*(3), 320-341.

Martinek, T. J., & Hellison, D. R. (1997). Fostering resiliency in underserved youth through physical activity. *Quest, 49*(1), 34–49. https://doi.org/10.1080/00336297.1997.10484222

Martinez, M. E. (2006). What is metacognition? *Phi Delta Kappan*, *87*(9), 696–699. https://doi.org/10.1177/003172170608700916

Marulis, L. M., Baker, S., & Whitebread, D. (2020). Integrating metacognition and executive function to enhance young children's perception of and agency in their learning. *Early Childhood Research Quarterly, 50*, 46–54. https://doi.org/10.1016/j.ecresq.2018.12.017.

Marulis, L. M., & Nelson, L. J. (2021). Metacognitive processes and associations to executive function and motivation during a problem-solving task in 3–5 year olds. *Metacognition and Learning, 16*, 207–231. https://doi.org/10.1007/s11409-020-09244-6

Marulis, L. M., Palincsar, A. S., Berhenke, A. L., & Whitebread, D. (2016). Assessing metacognitive knowledge in 3–5 year olds: The development of a metacognitive knowledge interview (McKI). *Metacognition and Learning, 11*(3), 339–368. https://doi.org/10.1007/s11409-016-9157-7

Masten, A. S. (1994). Resilience in individual development: Successful adaptation despite risk and adversity. In M. C. Wang & E. W. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects* (pp. 3–25). Lawrence Erlbaum Associates Inc.

Masten, A. S. (2014). Global perspectives on resilience in children and youth. *Child Development, 85*(1), 6–20. https://doi.org/10.1111/cdev.12205

Masten, A. S. (2018). Resilience theory and research on children and families: Past, present, and promise. *Journal of Family Theory & Review, 10*(1), 12–31. https://doi.org/10.1111/jftr.12255

Masten, A. S. (2021). Resilience in developmental systems. In M. Ungar (Ed.), *Multisystemic resilience* (pp.113-134). Oxford University Press. https://doi.org/10.1093/oso/9780190095888.003.0007

Masten, A. S., & Barnes, A. J. (2018). Resilience in children: Developmental perspectives. *Children*, *5*(7), 98. https://doi.org/10.3390/children5070098

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist, 53*(2), 205–220. https://doi.org/10.1037/0003-066X.53.2.205

Masten, A. S., Cutuli, J. J., Herbers, J. E., & Reed, M. G. J. (2009). Resilience in development. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (pp. 117– 131). Oxford University Press.

Masten, A. S., Gewirtz, A. H., & Sapienza, J. K. (2013). Resilience in development: The importance of early childhood. In R. E. Tremblay, M. Voivin, & R. DeV. Peters (Eds.), *Encyclopedia of early childhood development* (pp. 1-6). Centre of Excellence for Early Childhood Development and Strategic Knowledge Cluster on Early Child Development. https://www.child-encyclopedia.com/pdf/expert/resilience/according-experts/resilience-development-importance-early-childhood

Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. (1999). Competence in the context of adversity: pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology, 11*(1), 143–169. https://doi.org/10.1017/s0954579499001996

Masten, A. S., & Reed, M.-G. J. (2002). Resilience in development. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 74–88). Oxford University Press.

Mayer, R. E. (1998). Cognitive, metacognitive, and motivational aspects of problem solving. *Instructional Science, 26*(1-2), 49–63. https://doi.org/10.1023/A:1003088013286

McCain, B. (2017). *Effects of teacher grit on student grit and reading achievement: A mixed-methods study.* Indiana University of Pennsylvania.

McCallum, F., & Price, D. (2010). Well teacher, well students. *Journal of Student Wellbeing, 4*(1), 19-34.

McCombs, B. L. (1986). The role of the self-system in self-regulated learning. *Contemporary Educational Psychology, 11*(4), 314-332. https://doi.org/10.1016/0361-476X(86)90028-7

McConnell, D., Breitkreuz, R., & Savage, A. (2011). From financial hardship to child difficulties: Main and moderating effects of perceived social support. *Child:Care, Health and Development, 37*(5), 679–691. https://doi.org/10.1111/j.1365-2214.2010.01185.x

McCubbin, H. I., & McCubbin, M. A. (1988). Typologies of resilient families: Emerging roles of social class and ethnicity. *Family Relations, 37*(3), 247–254. https://doi.org/10.2307/584557

McCubbin, H. I., Thompson, E. A., Thompson, A. I., & McCubbin, M. A. (1993). Family schema, paradigms, and paradigm shifts: Components and processes of appraisal in family adaptation to crises. In A. P. Turnbull, J. M. Patterson, S. K. Behr, D. L. Murphy, J. G. Marquis, & M. J. Blue-Banning (Eds.), *Cognitive coping, families, and disability* (pp. 239–255). Paul H. Brookes Publishing.

McCubbin, H. I., Thompson, E. A., Thompson, A. I., & Fromer, J. E. (1998). *Resiliency in Native American and immigrant families*. Sage.

McCubbin, M. A., Balling, K., Possin, P., Frierdich, S., & Bryne, B. (2002). Family resiliency in childhood cancer. *Family Relations: An Interdisciplinary Journal of Applied Family Studies, 51*(2), 103-111. http://dx.doi.org/10.1111/j.1741-3729.2002.00103.x

McCubbin, M. A., McCubbin, H. I., & Thompson, A. I. (1996). Problem-solving communication index. In H. I. McCubbin, A. Thompson, M. McCubbin, (Eds.), *Family assessment: Resilience, coping and adaptation.* University of Wisconsin.

McCubbin, M. A., Thompson, A. E., Thompson, A. I., & Futrell, J. A. (1999). *The dynamics of resilient.* Sage Publications.

McDonald, R. P., & Mulaik, S. A. (1979). Determination of the number of factors in exploratory factor analysis. *Psychometrika, 44*(4), 469-486. https://doi.org/10.1007/BF02296269

McInerney, D. M., & McInerney, V. (2013). *Educational psychology: Constructing learning.* Pearson Higher Education AU.

McPherson, M., Smith-Lovin, L., & Brashears, M. E. (2006). Social isolation in America: Changes in core discussion networks over two decades. *American Sociological Review, 71*(3), 353–375. https://doi.org/10.1177/000312240607100301

McWhirter, J. J., McWhirter, B. T., McWhirter, A. M., & McWhirter, E. H. (2012). *At-risk youth: A comprehensive response for counselors, teachers, psychologists, and human service professionals* (5th ed.). Brooks/Cole Publishing.

Melo-León, J. (2015). A baseline study of strategies to promote critical thinking in the preschool classroom. *GIST – Education and Learning Research Journal*, (10), 113–127. https://doi.org/10.26817/16925777.270

Mermelshtine, R. (2017). Parent–child learning interactions: A review of the literature on scaffolding. *British Journal of Educational Psychology*, *87*(2), 241-254. https://doi.org/10.1111/bjep.12147

Metcalfe, J., & Kober, H. (2005). Self-reflective consciousness and the projectable self. In H. S. Terrace & J. Metcalfe (Eds.), *The missing link in cognition: Origins of self-reflective consciousness* (pp. 57–83). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195161564.003.0002

Mevarech, Z. R. (1999). Effects of metacognitive training embedded in cooperative settings on mathematical problem solving. *The Journal of Educational Research, 92*(4), 195–205. https://doi.org/10.1080/00220679909597597

Mevarech, Z. R., & Fridkin, S. (2006). The effects of IMPROVE on mathematical knowledge, mathematical reasoning and metacognition. *Metacognition and Learning, 1*(1), 85–97.

Mikk, J. (2015). Explaining the difference between PISA 2009 reading scores in Finland and Estonia. *Educational Research and Evaluation, 21*(4), 324-342.

Milinki, A. (1999). *Cases in qualitative research: Research reports for discussion and evaluation* (1st ed.). Routledge.

Miller, G. E., Chen, E., Fok, A. K., Walker, H., Lim, A., Nicholls, E. F., Cole, S., & Kobor, M. S. (2009). Low early-life social class leaves a biological residue manifested by decreased glucocorticoid and increased proinflammatory signaling. *Proceedings of the National Academy of Sciences of the United States of America*, *106*(34), 14716–14721. https://doi.org/10.1073/pnas.0902971106

Miller, P. H. (1985). Metacognition and attention. In D. L. Forrest-Presley, G. E. MacKinnon & T. G. Waller (Eds.), *Metacognition, cognition, & human performance* (pp. 181– 221). Academic Press.

Miyamoto, A., Pfost, M., & Artelt, C. (2019). The relationship between intrinsic motivation and reading comprehension: Mediating effects of reading amount and metacognitive knowledge of strategy use. *Scientific Studies of Reading, 23*(6), 445-460.

Molin, F., Haelermans, C., Cabus, S., & Groot, W. (2020). The effect of feedback on metacognition- A randomized experiment using polling technology. *Computers & Education, 152*, 103-135. https://doi.org/10.1016/j.compedu.2020.103885

Mollborn, S. (2016). Young children's developmental ecologies and kindergarten readiness. *Demography, 53*(6), 1853–1882. https://doi.org/10.1007/s13524-016-0528-0

Molnar, A., Boninger, F., & Fogarty, J. (2011). *The educational cost of schoolhouse commercialism*. National Education Policy Center. Retrieved April 24, 2023, from http://nepc.colorado.edu/publication/schoolhouse-commercialism-2011.

Montgomery, C., & Rupp, A. A. (2005). A meta-analysis for exploring the diverse causes and effects of stress in teachers. *Canadian Journal of Education, 28*(3), 458–486. https://doi.org/10.2307/4126479

Moore, G. A., & Neiderhiser, J. M. (2014). Behavioral genetic approaches and family theory. *Journal of Family Theory & Review, 6*(1), 18–30. https://doi.org/10.1111/jftr.12028

Morote, R., Hjemdal, O., Martinez Uribe, P., & Corveleyn, J. (2017). Psychometric properties of the Resilience Scale for Adults (RSA) and its relationship with life-stress, anxiety and depression in a Hispanic Latin-American community sample. *PloS one, 12*(11), 1-20. https://doi.org/10.1371/journal.pone.0187954

Morton, P. M., Schafer, M. H., & Ferraro, K. F. (2012). Does childhood misfortune increase cancer risk in adulthood? *Journal of Aging and Health, 24*(6), 948–984. https://doi.org/10.1177/0898264312449184

Muawiyah, D., Yamtinah, S., & Indriyanti, N. Y. (2019). Modelling testlet instrument in blended learning design to assess students' metacognition in the environmental chemistry course. Journal of Physics: *Conference Series, 1157*(4). https://doi.org/10.1088/1742-6596/1157/4/042012

Muñoz, L., & Cruz, J. S. (2016). The preschool classroom as a context for cognitive development: Type of teacher feed-back and children's metacognitive control. *Electronic Journal of Research in Educational Psychology, 14*(1), 23–44. https://doi.org/10.14204/ejrep.38.15033

Nakashima, M., & Canda, E. R. (2005). Positive dying and resilience in later life: A qualitative study. *Journal of Aging Studies, 19*, 109-125. http://dx.doi.org/10.1016/j.jaging.2004.02.002

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

Neal, J. W., & Neal, Z. P. (2013). Nested or networked? Future directions for ecological systems theory. *Social Development, 22*(4), 722–737.

Neale, D., & Whitebread, D. (2019). Maternal scaffolding during play with 12- to 24-month-old infants: stability over time and relations with emerging effortful control. *Metacognition and Learning, 14*, 265-289. https://doi.org/10.1007/s11409-019-09196-6

Neff, L. A., & Karney, B. R. (2009). Stress and reactivity to daily relationship experiences: How stress hinders adaptive processes in marriage. *Journal of Personality and Social Psychology, 97*(3), 435–450. https://doi.org/10.1037/a0015663

Neitzel, C., & Stright, A. D. (2003). Mothers' scaffolding of children's problem solving: Establishing a foundation of academic self-regulatory competence. *Journal of Family Psychology, 17*(1), 147–159. https://doi.org/10.1037/0893-3200.17.1.147

Nelson, L., & Marulis, L. M. (2017, August 29- September 2). *Associations between metacognitive and executive function skills in 2-5 year olds during problem-solving* [Conference presentation]. EARLI 2017, Tampere, Finland. https://www.researchgate.net/publication/320188417_Associations_between_metacognitive_and_executive_function_skills_in_2-5_year_olds_during_problem-solving_EARLI_2017_Paper

Nelson, T. O., & Narens, L. (1990). Metamemory: A theoretical framework and new findings. In G. H. Bower (Ed.), *The psychology of learning and motivation: Advances in research and theory* (pp. 125-173). Academic Press.

Nerenberg, L. S., & Gewirtz, A. (2017). Promoting children's resilience by strengthening parenting practices in families under extreme stress: The parent management training- Oregon model. In U. Kumar, U. Kumar (Eds.), *The Routledge international handbook of psychosocial resilience* (pp. 369-378). Routledge/Taylor & Francis Group.

Neuenhaus, N., Artelt, C., Lingel, K., & Schneider, W. (2011). Fifth graders metacognitive knowledge: General or domain-specific? *European Journal of Psychology of Education*, *26*(2), 163–178. https://doi.org/10.1007/s10212-010-0040-7

Nickerson, R. S. (1994). The teaching of thinking and problem solving. In R. J. Sternberg (Ed.), *Thinking and problem solving* (pp. 121–132). Academic Press.

Nieswiadomy, R. M. (2002). *Foundations of nursing research* (4th edition). Prentice-Hall.

Ohtani, K., & Hisasaka, T. (2018). Beyond intelligence: A meta-analytic review of the relationship among metacognition, intelligence, and academic performance. *Metacognition and Learning*, *13*, 179–212.

O'Leary, A. P., & Sloutsky, V. M. (2017). Carving metacognition at its joints: Protracted development of component processes. *Child Development*, *88*(3), 1015–1032. https://doi.org/10.1111/cdev.12644

Olsson, C. A., Bond, L., Burns, J. M., Vella-Brodrick, D. A., & Sawyer, S. M. (2003). Adolescent resilience: a concept analysis. *Journal of Adolescence*, *26*(1), 1–11. https://doi.org/10.1016/s0140-1971(02)00118-5

Orakcı, Ş., Yüreğilli Göksu, D., & Karagöz, S. (2023). A mixed methods study of the teachers' self-efficacy views and their ability to improve self-efficacy beliefs during teaching. *Frontiers in Psychology, 13*, 1035829. https://doi.org/10.3389/fpsyg.2022.1035829

Orte, C., Ballester, L., March, M. X., Oliver, J. L., Pascual, B., & Gomila, M. A. (2015). Development of prosocial behaviour in children after the improvement of family competences. *Journal of Children's Services*, *10*(2), 161-172. https://doi.org/10.1108/JCS-02-2014-0013

Osei, G. M. (2006). Teachers in Ghana: Issues of training, remuneration and effectiveness. *International Journal of Educational Development, 26*(1), 38-51. https://doi.org/10.1016/j.ijedudev.2005.07.015

Osório, C., Probert, T., Jones, E., Young, A. H., & Robbins, I. (2017). Adapting to stress: Understanding the neurobiology of resilience. *Behavioral Medicine, 43*(4), 307–322. https://doi.org/10.1080/08964289.2016.1170661

O'Sullivan, J. T. (1993). Preschoolers' beliefs about effort, incentives, and recall. *Journal of Experimental Child Psychology, 55*, 396–414.

Özsoy, G., & Ataman, A. (2009). The effect of metacognitive strategy training on mathematical problem solving achievement. *International Electronic Journal of Elementary Education, 1*(2), 68–83.

Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using SPSS for Windows* (6th ed.). McGraw-Hill Education.

Panter-Brick, C., & Leckman, J. F. (2013). Editorial Commentary: Resilience in child development--interconnected pathways to wellbeing. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 54*(4), 333–336. https://doi.org/10.1111/jcpp.12057

Papaleontiou-Louca, E., Melhuish, E., & Philaretou, A. (2012). Introspective abilities of preschool children. *Asian Transactions on Basic and Applied Sciences, 2*(2), 14-30.

Papaleontiou-Louca, E., & Thoma, N. (2014). A review of young children's metacognitive ability of introspection. In O. Saracho (Ed.), *Contemporary perspectives on research in theory of mind in early childhood education* (pp. 225-241). Information Age Publishing.

Park, K. O., Wilson, M. G., & Lee, M. S. (2004). Effects of social support at work on depression and organizational productivity. *American Journal of Health Behavior, 28*(5), 444–455. https://doi.org/10.5993/ajhb.28.5.7

Pappas, S., Ginsburg, H. P., & Jiang, M. (2003). SES differences in young children's metacognition in the context of mathematical problem solving. *Cognitive Development, 18*(3), 431–450. https://doi.org/10.1016/S0885-2014(03)00043-1

Paquette, K. R., & Rieg, S. A. (2016). Stressors and coping strategies through the lens of early childhood/special education pre-service teachers. *Teaching and Teacher Education, 57,* 51-58. https://doi.org/10.1016/j.tate.2016.03.009

Patterson, J. (2011). Metacognitive skills. In J. S. Kreutzer, J. DeLuca & B. Caplan (Eds.), *Encyclopedia of clinical neuropsychology* (pp. 117-203). Springer. https://doi.org/10.1007/978-0-387-79948-3_897

Patterson, J. M. (2002). Understanding family resilience. *Journal of Clinical Psychology*, *58*(3), 233–246. https://doi.org/10.1002/jclp.10019

Paulus, M., Proust, J., & Sodian, B. (2013). Examining implicit metacognition in 3.5-year-old children: an eye-tracking and pupillometric study. *Frontiers in Psychology*, *4*, 145. https://doi.org/10.3389/fpsyg.2013.00145

Pawlina, S., & Standford, C. (2011). Preschoolers grow their brains – shifting mindsets for greater resilience and better problem solving. *Young Children, 66(5),* 30–35.

Pearson, P. D. (1985). Changing the face of reading comprehension instruction. *The Reading Teacher, 38*(8), 724–738.

Pennequin, V., Sorel, O., & Mainguy, M. (2010). Metacognition, executive functions and aging. The effect of training in the use of metacognitive skills to solve mathematical word problems. *Journal of Adult Development, 17*, 168-176. https://doi.org/10.1007/s10804-010-9098-3

Perels, F., Merget-Kullmann, M., Wende, M., Schmitz, B., & Buchbinder, C. (2009). Improving self-regulated learning of preschool children: Evaluation of training for kindergarten teachers. *British Journal of Educational Psychology, 79*(2), 311-327.

Pekince, P. (2022). *Katılım temelli erken çocukluk eğitimi programının yürütücü işlevler ve üstbilişsel becerilere etkisi [The impact of the participation based early childhood education program on executive functions and metacognitive skills]* (Publication No. 724078) [Doctoral dissertation, Gazi University]. Council of Higher Education Thesis Center.

Pekince, P., & Avcı, N. (2021, June 28-30). *Tren rayı görevinin Türkçe geçerlik güvenirlik çalışması*. Genç Araştırmacılar Kongresi, Gazi University, Ankara.

Perkins, D. (1992) *Smart schools: From training memories to educating minds.* Maxwell Macmillan International.

Perner, J. (1991). *Understanding the representational mind.* The MIT Press.

Pilowsky, D. J., Zybert, P. A., & Vlahov, D. (2004). Resilient children of injection drug users. *Journal of the American Academy of Child and Adolescent Psychiatry*, *43*(11), 1372–1379. https://doi.org/10.1097/01.chi.0000138355.29099.2a

Pino-Pasternak, D., & Whitebread, D. (2010). The role of parenting in children's self regulated learning. *Educational Research Review, 5*(3), 220–242. https://doi.org/10.1016/j.edurev.2010.07.001

Pino-Pasternak, D., Whitebread, D., & Tolmie, A. (2010). A multidimensional analysis of parent-child interactions during academic tasks and their relationships with children's self-regulated learning. *Cognition and Instruction, 28*(3), 219–272. https://doi.org/10.1080/07370008.2010.490494

Pintrich, P. R. (2002). The role of metacognitive knowledge in learning, teaching, and assessing. *Theory into Practice, 41*(4), 219-225. https://doi.org/10.1207/s15430421tip4104_3

Pipp-Siegel, S., Sedey, A. L., & Yoshinaga-Itano, C. (2002). Predictors of parental stress in mothers of young children with hearing loss. *Journal of Deaf Studies and Deaf Education, 7,* 1-17.

Polat, Ş., & Özdemir, M. (2018). Examination of the relationship between educational stress, school burnout and school alienation of secondary school students. *Kastamonu Education Journal, 26*(5), 1395-1406. https://doi.org/10.24106/kefdergi.1848

Pölkki, P., Ervast, S. A., & Huupponen, M. (2004). Coping and resilience of children of a mentally ill parent. *Social Work in Health Care, 39*(1-2), 151–163. https://doi.org/10.1300/j010v39n01_10

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891. https://doi.org/10.3758/BRM.40.3.879

Qamar, A. H. (2023). Conceptualizing social resilience in the context of migrants' lived experiences. *Geoforum, 139*, 1-5. https://doi.org/10.1016/j.geoforum.2023.103680

Qiu, Y., Xu, L., Pan, Y., He, C., Huang, Y., Xu, H., Lu, Z., & Dong, C. (2021). Family resilience, parenting styles and psychosocial adjustment of children with chronic illness: A cross-sectional study. *Frontiers in Psychiatry*, *12*, 646421. https://doi.org/10.3389/fpsyt.2021.646421

Rani, M., & Duhan, K. (2020). Influence of home environment and mental health on metacognitive skill in adolescents. *The Pharma Innovation Journal, 9*(7), 81-86.

Razon, N. (1983). *Çalışan anne ve çocuk.* İstanbul Üniversitesi Edebiyat Fakültesi Yayınları.

Reed-Victor, E., & Stronge, J. (2002). Homeless students and resilience: Staff perspectives on individual and environmental factors. *Journal of Children & Poverty*, 8(2), 159–183. https://doi.org/10.1080/1079612022000005375

Revelle, G. L., Wellman, H. M., & Karabenick, J. D. (1985). Comprehension monitoring in preschool children. *Child Development 56*, 654–663. https://doi.org/10.2307/1129755

Richards, K. A. R., Templin, T. J., Levesque-Bristol, C., & Blankenship, B. T. (2014). Understanding differences in role stressors, resilience, and burnout in teacher/coaches and non-coaching teachers. *Journal of Teaching in Physical Education, 33*(3), 383–402. https://doi.org/10.1123/jtpe.2013-0159

Riegle-Crumb, C., & Humphries, M. (2012). Exploring bias in math teachers' perceptions of students' ability by gender and race/ethnicity. *Gender & Society*, *26*(2), 290–322. https://doi.org/10.1177/0891243211434614

Rivard, M., Terroux, A., Parent-Boursier, C., & Mercier, C. (2014). Determinants of stress in parents of children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *44*(7), 1609–1620. https://doi.org/10.1007/s10803-013-2028-z

Rivas, S. F., Saiz, C., & Ossa, C. (2022). Metacognitive strategies and development of critical thinking in higher education. *Frontiers in Psychology*, *13*, 913219. https://doi.org/10.3389/fpsyg.2022.913219

Robson, S. (2010). Self-regulation and metacognition in young children's self-initiated play and reflective dialogue. *International Journal of Early Years Education*, *18*(3), 227–241. https://doi.org/10.1080/09669760.2010.521298.

Rochette, É., & Bernier, A. (2014). Parenting, family socioeconomic status, and child executive functioning: a longitudinal study. *Merrill-Palmer Quarterly*, *60*(4), 431–460. https://doi.org/10.13110/merrpalmquar1982.60.4.0431

Roebers, C. M. (2017). Executive function and metacognition: Towards a unifying framework of cognitive self-regulation. *Developmental Review*, *45*, 31–51. https://doi.org/10.1016/j.dr.2017.04.001

Roebers, C. M., Cimeli, P., Röthlisberger, M., & Neuenschwander, R. (2012). Executive functioning, metacognition, and self-perceived competence in elementary school children: An explorative study on their interrelations and their role for school achievement. *Metacognition and Learning*, *7*, 151–173. https://doi.org/10.1007/s11409-012-9089-9

Roebers, C. M., & Spiess, M. (2017). The development of metacognitive monitoring and control in second graders: A short-term longitudinal study. *Journal of Cognition & Development*, *18*(1), 110–128. https://doi.org/10.1080/15248372.2016.1157079

Roeschl-Heils, A., Schneider, W., & Van Kraayenoord, C. E. (2003). European Journal of *Psychology of Education*, *18*, 75-86. https://doi.org/10.1007/BF03173605

Rohwer, M., Kloo, D., & Perner, J. (2012). Escape from metaignorance: how children develop an understanding of their own lack of knowledge. *Child Development*, *83*(6), 1869–1883. https://doi.org/10.1111/j.1467-8624.2012.01830.x

Rolland, J. S. (2005). Cancer and the family: An integrative model. *Cancer, 104,* 2584-2595. https://doi.org/10.1002/cncr.21489

Rolland, J. S., & Walsh, F. (2005). Systemic training for healthcare professionals: the Chicago Center For Family Health approach. *Family Process*, *44*(3), 283–301. https://doi.org/10.1111/j.1545-5300.2005.00060.x

Rolland, J. S., & Walsh, F. (2006). Facilitating family resilience with childhood illness and disability. *Current Opinion in Pediatrics, 18*(5), 527–538. https://doi.org/10.1097/01.mop.0000245354.83454.68

Row, B. N., Subramaniam, S., & Sathasivam, R. V. (2016). When students say "I just couldn't think": Challenges in teaching skilful thinking. *Malaysian Online Journal of Educational Sciences, 4*(2), 59-69.

Rozencwajg, P. (2003). Metacognitive factors in scientific problem-solving strategies. European *Journal of Psychology of Education, 18*(3), 281-294. https://doi.org/10.1007/BF03173249

Rubin, K. H. (1977). Play behaviors of young children. *Young Children*, *32*(6), 16–24.

Rutten, B. P. F., Hammels, C., Geschwind, N., Menne-Lothmann, C., Pishva, E., Schruers, K., van den Hove, D., Kenis, G., van Os, J., & Wichers, M. (2013). Resilience in mental health: linking psychological and neurobiological perspectives. *Acta Psychiatrica Scandinavica, 128*, 3-20. https://doi.org/10.1111/acps.12095

Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent & J. E. Rolf (Eds.), *Primary prevention of psychopathology: Vol III. Social competence in children* (pp. 49–74). University Press of New England.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *The American Journal of Orthopsychiatry, 57*, 316–31.

Rutter, M. (1990). Psychosocial resilience and protective mechanisms. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 181-214). Cambridge University Press. https://doi.org/10.1017/CBO9780511752872.013

Sabol, T. J., & Pianta, R. C. (2012). Recent trends in research on teacher–child relationships. *Attachment & Human Development, 14*(3), 213–231. https://doi.org/10.1080/14616734.2012.672262

Sagone, E., & Indiana, M. L. (2017). The relationship of positive affect with resilience and self efficacy in life skills in Italian adolescents. *Scientific Research Publishing, 8*, 2226-2239.

Sakellariou, M., & Rentzou, K. (2012). Comparing beliefs and intentions about the importance of teacher–child interactions among Greek and Cypriot pre-service kindergarten teachers. *European Early Childhood Education Research Journal, 20*(2), 233-247. https://doi.org/10.1080/1350293X.2012.681129

Sameroff, A. (Ed.). (2009). *The transactional model of development: How children and contexts shape each other.* American Psychological Association. https://doi.org/10.1037/11877-000

Sandler, I. (2001). Quality and ecology of adversity as common mechanisms of risk and resilience. *American Journal of Community Psychology, 29*(1), 19–61. https://doi.org/10.1023/A:1005237110505

Saraç, S. , Karakelle, S., & Whitebread, D. (2019). Okul öncesi çocuklar için bağımsız öğrenme davranışları ölçeği 3-5 (BÖD 3-5): Türkçe formu için geçerlik ve güvenirlik çalışması. *İlköğretim Online, 18*(3), 1093-1106. https://doi.org/10.17051/ilkonline.2019.610148

SAS Institute Inc. (2004). SAS 9.1.3 *Help and Documentation*. SAS Institute Inc.

Sato, M., & Loewen, S. (2018). Metacognitive instruction enhances the effectiveness of corrective feedback: Variable effects of feedback types and linguistic targets. *Language Learning, 68*(2), 507-545.

Sawyer, M. G., Kosky, R. J., Graetz, B. W., Arney, F., Zubrick, S. R., & Baghurst, P. (2000). The national survey of mental health and wellbeing: The child and adolescent component. *Australian and New Zealand Journal of Psychiatry, 34*, 214-220. https://doi.org/10.1046/j.1440-1614.2000.00729.x

Schaefer, L., Long, J. S., & Clandinin, D. J. (2012). Questioning the research on early career teacher attrition and retention. *Alberta Journal of Educational Research, 58*(1), 106-121.

Schaffer, R. (1996). *Social development.* Blackwell.

Scharf, R. J., Scharf, G. J., & Stroustrup, A. (2016). Developmental milestones. *Pediatrics in Review, 37*(1), 25–47. https://doi.org/10.1542/pir.2014-0103

Scheffler, I. (1991) *In praise of cognitive emotions*. Chapman &Hall, Inc.

Schellenberg, S., Negishi, M., & Eggen, P. (2011) The effects of metacognition and concrete encoding strategies on depth of understanding in educational psychology. *Teaching Educational Psychology, 7*(2),17-24.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online, 8*(2), 23-74.

Schneider, W. (2008). The development of metacognitive knowledge in children and adolescents: Major trends and implications for education. *Mind, Brain and Education, 2,* 114–121.

Schoen, D. (1983). *The reflective practitioner*. Jossey-Bass.

Schoenfeld, A. H. (1985). *Mathematical problem solving*. Academic Press.

Schoenfeld, A. H. (1987). What's all the fuss about metacognition? In A. H. Schoenfeld (Ed.), *Cognitive Science and Mathematics Education* (pp. 189-215). Lawrence Erlbaum Associates, Inc.

Schofield, L. (2012). Why didn't I think of that? Teachers' influence on students' metcognitive knowledge of how to help students acquire metacognitive abilities. *KAIRARANGA, 13*(1), 56-62.

Schommer, M. (1990). The effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology, 82,* 498-504.

Schonfeld, I. S. (2001). Stress in 1st-year women teachers: The context of social support and coping. *Genetic, Social, and General Psychology Monographs, 127*(2), 133-168.

Schoon, I., Parsons, S., & Sacker, A. (2004). Socioeconomic adversity, educational resilience, and subsequent levels of adult adaptation. *Journal of Adolescent Research, 19*(4), 383–404. https://doi.org/10.1177/0743558403258856

Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional Science, 26*, 113–125.

Schraw, G. (2001). Promoting general metacognitive awareness. In H. Hartman (Ed.), *Metacognition in learning and instruction: Theory, research and practice* (pp. 3-16). Kluwer.

Schraw, G., & Graham, T. (1997). Helping gifted students develop metacognitive awareness. *Roeper Review, 20*(1), 4-8.

Schraw, G., & Moshman, D. (1995). Metacognitive theories. *Educational Psychology Review, 7*(4), 351–371.

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research, 99*(6), 323-338.

Schroyens, W. (2005). Knowledge and thought: an introduction to critical thinking. *Experimental Psychology, 52*(2), 163–164.

Schumacker, R. E., & Lomax, R. G. (2010). *A beginner's guide to structural equation modeling* (3rd ed.). Routledge.

Schunk, D. H. (2008). Metacognition, self-regulation, and self-regulated learning: Research recommendations. *Educational Psychology Review, 20*(4), 463–467. https://doi.org/10.1007/s10648-008-9086-3

Scrimgeour, M. B., Blandon, A. Y., Stifter, C. A., & Buss, K. A. (2013). Cooperative coparenting moderates the association between parenting practices and children's prosocial behavior. *Journal of Family Psychology, 27*(3), 506–511. https://doi.org/10.1037/a0032893

Selçuklu, A. E. (2013). *Örgütsel bağlılığın bir yordayıcısı olarak kurum kültürü ve psikolojik dayanıklılık: Okulöncesi öğretmenleri üzerine bir çalışma [Psychological resilience and organizational culture as a predictor of organizational commitment: A study about preschool teachers]* (Publication No. 330440) [Master's thesis, Erciyes University]. Council of Higher Education Thesis Center.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5–14.

Senemoğlu, N. (2020). *Gelişim öğrenme ve öğretim kuramdan uygulamaya* (27th ed.). Anı Publication.

Sevgi, S., & Çağlıköse, M. (2020). Altıncı sınıf öğrencilerinin kesir problemleri çözme sürecinde kullandıkları üstbiliş becerilerinin incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 35*(3), 662-687. https://doi.org/10.16986/HUJE.2019053981

Sezgin, F. (2012). İlköğretim okulu öğretmenlerinin psikolojik dayanıklılık düzeylerinin incelenmesi [Investigating the psychological hardiness levels of primary school teachers]. *Kastamonu Eğitim Dergisi [Kastamonu Education Journal], 20*(2), 489-502.

Shamir, A., Mevarech, Z. R., & Gida, C. (2009). The assessment of meta-cognition in different contexts: Individualized vs. peer-assisted learning. *Metacognition and Learning, 4*, 47–61. https://doi.org/10.1007 /s11409-008-9032-2.

Shaukat, S., Vishnumolakala, V. R., & Al Bustami, G. (2019). The impact of teachers' characteristics on their self-efficacy and job satisfaction: A perspective from teachers engaging students with disabilities. *Journal of Research in Special Educational Needs, 19*(1), 68–76. https://doi.org/10.1111/1471-3802.12425

Shonkoff, J. P., Garner, A. S., Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, & Section on Developmental and Behavioral Pediatrics (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*(1), e232–e246. https://doi.org/10.1542/peds.2011-2663

Shylaja, B., & Kumar, R. S. (2018). Traditional versus modern missing data handling techniques: An overview. *International Journal of Pure and Applied Mathematics, 118*(14), 77-84.

Simon, J. B., Murphy, J. J., & Smith, S. M. (2005). Understanding and fostering family resilience. *The Family Journal, 13*(4), 427–436. https://doi.org/10.1177/1066480705278724

Sixbey, M. T. (2005). *Development of the family resilience assessment scale to identify family resilience constructs* (Publication No. 3204501) [Doctoral dissertation, University of Florida]. ProQuest Dissertations & Theses Global.

Skelton, C., Carrington, B., Francis, B., Hutchings, M., Read, B., & Hall, I. (2009). Gender 'matters' in the primary classroom: pupils' and teachers' perspectives. *British Educational Research Journal, 35*(2), 187–204. https://doi.org/10.1080/01411920802041905

Smith, G. (1999). Resilience concepts and findings: Implications for family therapy. *Journal of Family Therapy, 21*(2), 154–158. https://doi.org/10.1111/1467-6427.00110

Smith-Osborne, A. (2007). Life span and resilience theory: A critical review. *Advances in Social Work, 8*(1), 152–68.

Smokowski, P. R., Reynolds, A. J., & Bezruczko, N. (1999). Resilience and protective factors in adolescence: An autobiographical perspective from disadvantaged youth. *Journal of School Psychology, 37*(4), 425-448. https://doi.org/10.1016/S0022-4405(99)00028-X

Soltanifar, A., Akbarzadeh, F., Moharreri, F., Soltanifar, A., Ebrahimi, A., Mokhber, N., Minoocherhr, A., & Ali Naqvi, S. S. (2015). Comparison of parental stress among mothers and fathers of children with autistic spectrum disorder in Iran. *Iranian Journal of Nursing and Midwifery Research, 20*(1), 93–98.

Sonn, C. C., & Fisher, A. T. (1998). Sense of community: Community resilient responses to oppression and change. *Journal of Community Psychology, 26*(5), 457-472.

Soodla, P., Jõgi, A. L., & Kikas, E. (2017). Relationships between teachers' metacognitive knowledge and students' metacognitive knowledge and reading achievement. *European Journal of Psychology of Education, 32*(2), 201-218.

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European Journal of Psychotraumatology*, *5*, 1-14. https://doi.org/10.3402/ejpt.v5.25338

Southwick, S. M., & Charney, D. C. (2018). *Resilience: The science of mastering life's greatest challenges* (2nd ed.). Cambridge University Press.

Souvignier, E., & Mokhlesgerami, J. (2006). Using self-regulation as a framework for implementing strategy instruction to foster reading comprehension. *Learning and Instruction*, *16*(1), 57–71. https://doi.org/10.1016/j.learninstruc.2005.12.006

Sapienza, J. K., & Masten, A. S. (2011). Understanding and promoting resilience in children and youth. *Current Opinion in Psychiatry*, *24*(4), 267–273. https://doi.org/10.1097/YCO.0b013e32834776a8

Sperling, R. A., Howard, B. C., Miller, L. A., & Murphy, C. (2002). Measures of children's knowledge and regulation of cognition. *Contemporary Educational Psychology*, *27*, 51-79.

Sperling, R. A., Walls, R. T., & Hill, L. A. (2000). Early relationships among self-regulatory constructs: Theory of mind and preschool children's problem solving. *Child Study Journal*, *30*, 233–252.

Stanley, S. M., Amato, P. R., Johnson, C. A., & Markman, H. J. (2006). Premarital education, marital quality, and marital stability: findings from a large, random household survey. *Journal of Family Psychology : Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, *20*(1), 117–126. https://doi.org/10.1037/0893-3200.20.1.117

Stern, M., & Hertel, S. (2022). Relationship between maternal scaffolding and preschooler's metacognitive strategies in a problem-solving situation. *Learning and Instruction*, *80*, 101631. https://doi.org/10.1016/j.learninstruc.2022.101631

Sternberg, R. J., & Davidson, J. E. (1983). Insight in the gifted. *Educational Psychologist*, *18*(1), 51–57. https://doi.org/10.1080/00461528309529261

Stiglbauer, B., & Zuber, J. (2018). Challenge and hindrance stress among schoolteachers. *Psychology in the Schools, 55*(6), 707-721. https://doi.org/10.1002/pits.22135

Stright, A. D., Herr, M. Y., & Neitzel, C. (2009). Maternal scaffolding of children's problem solving and children's adjustment in kindergarten: Hmong families in the United States. *Journal of Educational Psychology, 101*(1), 207–218. https://doi.org/10.1037/a0013154

Sunar, D. & Fisek, G. (2005). Contemporary Turkish families. In U. Gielen & J. Roopnarine (Eds.), *Families in global perspective* (pp. 169-183). Allyn and Bacon/Pearson.

Sümer, N. (2000). Yapısal eşitlik modelleri: Temel kavramlar ve örnek uygulamalar [Structural equation modeling: Basic concepts and applications]. *Türk Psikoloji Yazıları, 3*(6), 49–74.

Sweeney, C. M. (2010). *The metacognitive functioning of middle school students with and without learning disabilities during mathematical problem solving* (Publication No. 3424782) [Doctoral dissertation, University of Miami]. ProQuest Dissertations & Theses Global.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2011). Pre-school quality and educational outcomes at age 11: Low quality has little benefit. *Journal of Early Childhood Research, 9*(2), 109–124. https://doi.org/10.1177/1476718X10387900

Şahin, S., & Hepsöğütlü, Z. B. (2018). Psychological resilience and coping strategies of high school students based on certain variables. *Journal of Educational Sciences Research, 8*(2), 49-64.

Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics.* Pearson Education Limited.

Takeuchi, H., Taki, Y., Hashizume, H., Asano, K., Asano, M., Sassa, Y., Yokota, S., Kotozaki, Y., Nouchi, R., & Kawashima, R. (2015). The impact of parent-child interaction on brain structures: cross-sectional and longitudinal analyses. *The Journal of Neuroscience: The Official Journal of the Society for Neuroscience, 35*(5), 2233–2245. https://doi.org/10.1523/JNEUROSCI.0598-14.2015

Taşdemir, F. (2013). *Görme engelli öğrenci annelerinin yılmazlık özelliklerinin incelenmesi: İstanbul ili örneği [The examination of the indomitableness characteristics of the sight disabled students mothers]* (Publication No. 350942) [Master's thesis, Yeditepe University]. Council of Higher Education Thesis Center.

Taşğın, S. (2014). The possible use of both ecological theory of criminology and Bronfenbrenner's ecological theory for understanding crime. *Journal of Sociological Research, 17*(1), 131-157.

Taylor, J. L. (2013). The power of resilience: A theoretical model to empower, encourage and retain teachers. *The Qualitative Report, 18*(35), 1-25. https://doi.org/10.46743/2160-3715/2013.1474

Tebes, J. K., Irish, J. T., Puglisi Vasquez, M. J., & Perkins, D. V. (2004). Cognitive transformation as a marker of resilience. *Substance Use & Misuse, 39*(5), 769–788. https://doi.org/10.1081/ja-120034015

Teong, S. K. (2003). The effect of metacognitive training on mathematical word-problem solving. *Journal of Computer Assisted Learning, 19*(1), 46-55. https://doi.org/10.1046/j.0266-4909.2003.00005.x

The World Bank, World Development Indicators. (2023). *Inflation, consumer prices (annual %)– Turkiye* [International Monetary Fund, International Financial Statistics and data files]. Retrieved from https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?end=2022&locations=TR&start=1960&view=chart

Thiede, K. W., Anderson, M. C. M., & Therriault, D. (2003). Accuracy of metacognitive monitoring affects learning of texts. *Journal of Educational Psychology, 95*(1), 66–73. https://doi.org/10.1037/0022-0663.95.1.66

Thomas, A. M. (2020). Body image satisfaction, resilience, optimism and subjective well being. *Our Heritage, 68*(1), 9540-9552.

Thompson, B. (2004). *Exploratory and confirmatory factor analysis: Understanding concepts and applications.* American Psychological Association. https://doi.org/10.1037/10694-000

Thompson, R. (2007). *Metacognition: An intervention for academically unprepared college students* (Publication No. 3289490) [Doctoral dissertation, Capella University]. ProQuest Dissertations & Theses Global.

Tian, M., Deng, Z., Meng, Z., Li, R., Zhang, Z., Qi, W., Wang, R., Yin, T., & Ji, M. (2018). The impact of individual differences, types of model and social settings on block building performance among Chinese preschoolers. *Frontiers in Psychology, 9*, 27. https://doi.org/10.3389/fpsyg.2018.00027

Tiet, Q. Q., Bird, H. R., Davies, M., Hoven, C., Cohen, P., Jensen, P. S., & Goodman, S. (1998). Adverse life events and resilience. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*(11), 1191–1200. https://doi.org/10.1097/00004583-199811000-00020

Toker, B. (2011). Job satisfaction of academic staff: An empirical study on Turkey. *Quality Assurance in Education, 19*(2), 156-169. https://doi.org/10.1108/09684881111125050

Toland, J., & Carrigan, D. (2011). Educational psychology and resilience: New concept, new opportunities. *School Psychology International, 32*(1), 95–106. https://doi.org/10.1177/0143034310397284

Tomasetto, C., Mirisola, A., Galdi, S., & Cadinu, M. (2015). Parents' math-gender stereotypes, children's self-perception of ability, and children's appraisal of parents' evaluations in 6-year-olds. *Contemporary Educational Psychology, 42*, 186–198. https://doi.org/10.1016/j.cedpsych.2015.06.007

Topcu, M. S., & Yılmaz-Tüzün, Ö. (2009). Elementary students' metacognition and epistemological beliefs considering science achievement, gender and socioeconomic status. *Elementary Education Online, 8*(3), 676–693.

Trickett, P. K., Aber, J. L., Carlson, V., & Cicchetti, D. (1991). Relationship of socioeconomic status to the etiology and developmental sequelae of physical child abuse. *Developmental Psychology, 27*(1), 148–158. https://doi.org/10.1037/0012-1649.27.1.148

Tschannen-Moran, M., Hoy, A. W., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research, 68*(2), 202–248. https://doi.org/10.3102/00346543068002202

Uddin, J., Alharbi, N., Uddin, H., Hossain, M. B., Hatipoğlu, S. S., Long, D. L., & Carson, A. P. (2020). Parenting stress and family resilience affect the association of adverse childhood experiences with children's mental health and attention-deficit/hyperactivity disorder. *Journal of Affective Disorders, 272*, 104–109. https://doi.org/10.1016/j.jad.2020.03.132

Ulferts, H., Wolf, K. M., & Anders, Y. (2019). Impact of process quality in early childhood education and care on academic outcomes: Longitudinal meta-analysis. *Child Development, 90*(5), 1474–1489. https://doi.org/10.1111/cdev.13296

Ullman, J. B. (2013). Structural equation modeling. In B. G. Tabachnick, & L. S. Fidell (Eds.), *Using multivariate statistics* (6th ed.) (pp.731-835). Pearson Education.

Ungar, M., Brown, M., Liebenberg, L., Othman, R., Kwong, W. M., Armstrong, M., & Gilgun, J. (2007). Unique pathways to resilience across cultures. *Adolescence, 42*(166), 287–310.

Ungar, M., Ghazinour, M., & Richter, J. (2013). Annual Research Review: What is resilience within the social ecology of human development?. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 54*(4), 348–366. https://doi.org/10.1111/jcpp.12025

Valcan, D. S., Davis, H., & Pino-Pasternak, D. (2017). Parental behaviours predicting early childhood executive functions: A meta-analysis. *Educational Psychology Review*, 1–43. https://doi.org/10.1007/s10648-017-9411-9

Vandergrift, L. (2005). Relationships among motivation orientations, metacognitive awareness and proficiency in L2 listening. *Applied Linguistics, 26*, 70–89.

van Huizen, T., & Plantenga, J. (2018). Do children benefit from universal early childhood education and care? A meta-analysis of evidence from natural experiments. *Economics of Education Review, 66,* 206-222. https://doi.org/10.1016/j.econedurev.2018.08.001

Van-Kraayenoord, C., Beinicke, A., Schlagmuller, M., & Schneider, W. (2012). Word identification, metacognitive knowledge, motivation and reading comprehension: An Australian study of Grade 3 and 4 pupils. *Australian Journal of Language and Literacy, 35*(1), 51-68.

Veenman, M. V. J. (2011). Alternative assessment of strategy use with self-report instruments: A discussion. *Metacognition and Learning 6*, 205–211. https://doi.org/10.1007/s11409-011-9080-x

Veenman, M. V. J., Bavelaar, L., De Wolf, L., & Van Haaren, M. G. P. (2014). The on-line assessment of metacognitive skills in a computerized learning environment. *Learning and Individual Differences*, *29*, 123–130. https://doi.org/10.1016/j.lindif.2013.01.003

Veenman, M. V. J., & Spaans, M. A. (2005). Relation between intellectual and metacognitive skills: Age and task differences. *Learning and Individual Differences, 15*(2), 159–176. https://doi.org/10.1016/j.lindif.2004.12.001

Veenman, M. V. J., Van Hout-Wolters, B. H. A. M., & Afflerbach, P. (2006). Metacognition and learning: Conceptual and methodological considerations. *Metacognition and Learning, 1*, 3–14. https://doi.org/10.1007/s11409-006-6893-0

Veenman, M. V. J., Wilhelm, P., & Beishuizen, J. J. (2004). The relation between intellectual and metacognitive skills from a developmental perspective. *Learning and Instruction, 14*(1), 89–109. https://doi.org/10.1016/j.learninstruc.2003.10.004

Verschaffel, L., Greer, B., & De Corte, E. (2000). *Making sense of word problems.* Swets & Zeitlinger.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Wall, K. (2008). Understanding metacognition through the use of pupil views templates: Pupil views of Learning to Learn. *Thinking Skills and Creativity, 3*(1), 23-33. https://doi.org/10.1016/j.tsc.2008.03.004

Walsh, F. (1996). The concept of family resilience: Crisis and challenge. *Family Process, 35*(3), 261–281. https://doi.org/10.1111/j.1545-5300.1996.00261.x

Walsh, F. (1998). *Strengthening family resilience.* Guilford Press.

Walsh, F. (2002). A family resilience framework: Innovative practice applications. *Family Relations: An Interdisciplinary Journal of Applied Family Studies, 51*(2), 130–137. https://doi.org/10.1111/j.1741-3729.2002.00130.x

Walsh, F. (2003). Family resilience: A framework for clinical practice. *Family Process, 42*(1), 1–18. https://doi.org/10.1111/j.1545-5300.2003.00001.x

Walsh, F. (2006). *Strengthening family resilience* (2nd ed.). Guilford.

Walsh, F. (2012). Family resilience: Strengths forged through adversity. In F. Walsh (Ed*.), Normal family processes* (4th ed.) (pp. 399-427). Guilford.

Walsh, F. (2016a). Applying a family resilience framework in training, practice, and research: Mastering the art of the possible. *Family Process, 55*(4), 616–632. https://doi.org/10.1111/famp.12260

Walsh, F. (2016b). Family resilience: A developmental systems framework. *European Journal of Developmental Psychology, 13*(3), 313–324. https://doi.org/10.1080/17405629.2016.1154035

Wang, Y., Li, L., Sun, Y., & Li, W. (2020). The relationship between metacognitive knowledge, self-regulation and academic performance among college students. *Frontiers in Psychology, 11*, 2102.

Wang, Z. (2015). Theory of mind and children's understanding of teaching and learning during early childhood. *Cogent Education, 2*, 1–10.

Weinert, F. E., & Schneider, W. (1999). *Individual development from 3 to 12: Findings from the Munich Longitudinal Study*. Cambridge University Press.

Welch, B. (1951) On the Comparison of Several Mean Values: An Alternative Approach. *Biometrika, 38*(3-4), 330-336. https://doi.org/10.1093/biomet/38.3-4.330

Werner, E. E. (1989). Children of the Garden Island. *Scientific American*, *260*(4), 106–111. https://doi.org/10.1038/scientificamerican0489-106

Werner, E. E. (1995). Resilience in development. *Current Directions in Psychological Science*, *4*(3), 81–84. https://doi.org/10.1111/1467-8721.ep10772327

Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Cornell University Press.

Wertsch, J. V. (1978). Adult-child interaction and the roots of metacognition. *Quarterly Newsletter of the Institute for Comparative Human Cognition, 1*(1), 15-18.

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. (1977). Assessing reliability and stability in panel models. *Sociological Methodology, 8*, 84-136. http://dx.doi.org/10.2307/270754

White, N., Richter, J., Koeckeritz, J., Munch, K., & Walter, P. (2004). "Going forward": Family resiliency in patients on hemodialysis. *Journal of Family Nursing, 10*(3), 357-378.

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. https://doi.org/10.1007/978-1-4419-6546-2_11

Whitebread, D., Anderson, H., Coltman, P., Page, C., Pino-Pasternak, D., & Mehta, S. (2005). Developing independent learning in the early years. *Education 3–13*, *33*(1), 40–50.

Whitebread, D., Bingham, S., Grau, V., Pasternak, D. P., & Sangster, C. (2007). Development of metacognition and self-regulated learning in young children: Role of collaborative and peer-assisted learning. *Journal of Cognitive Education and Psychology*, *6*(3), 433–455. https://doi.org/10.1891/194589507787382043

Whitebread, D., & Coltman, P. (2010) Aspects of pedagogy supporting metacognition and mathematical learning in young children: Evidence from an observational study. *The International Journal on Mathematics Education, 42*(2), 163-178. https://doi.org/10.1007/s11858-009-0233-1

Whitebread, D., Coltman, P., Pasternak, D. P., Sangster, C., Grau, V., Bingham, S., Almeqdad, Q., & Demetriou, D. (2009). The development of two observational tools for assessing metacognition and self-regulated learning in young children. *Metacognition and Learning*, *4*(1), 63-85. https://doi.org/10.1007/s11409-008-9033-1

Whitebread, D., & Neale, D. (2020). Metacognition in early child development. *Translational Issues in Psychological Science*, *6*(1), 8–14. https://doi.org/10.1037/tps0000223

Whitebread, D., & O'Sullivan, L. (2012). Preschool children's social pretend play: supporting the development of metacommunication, metacognition and self-regulation. *International Journal of Play, 1*(2), 197-213. http://dx.doi.org/10.1080/21594937.2012.693384

Wilcox, D. T., Richards, F., & O'Keefe, Z. C. (2004). Resilience and risk factors associated with experiencing childhood sexual abuse. *Child Abuse Review, 13*(5), 338-352. https://doi.org/10.1002/car.862

Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes, 9*, 8. https://doi.org/10.1186/1477-7525-9-8

Winne, P. H. (1997). Experimenting to bootstrap self-regulated learning. *Journal of Educational Psychology, 89*(3), 397–410. https://doi.org/10.1037/0022-0663.89.3.397

Winne, P. H. (2017). Cognition and metacognition within self-regulated learning. In D. Schunk, & J. Greene (Eds.), *Handbook of self-regulation of learning and performance* (pp. 36-48). Routledge.

Winne, P. H., & Hadwin, A. F. (1998). Studying as self-regulated learning. In D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds.), *Metacognition in educational theory and practice* (pp. 277–304). Lawrence Erlbaum Associates, Inc.

Winsler, A., & Naglieri, J. (2003). Overt and covert verbal problem-solving strategies: Developmental trends in use, awareness, and relations with task performance in children aged 5 to 17. *Child Development, 74*(3), 659–678.

Wister, A. V., Coatta, K. L., Schuurman, N., Lear, S. A., Rosin, M., & MacKey, D. (2016). A lifecourse model of multimorbidity resilience: Theoretical and research developments. *International Journal of Aging & Human Development, 82*(4), 290–313. https://doi.org/10.1177/0091415016641686

Wolff, S. (1995). The concept of resilience. *The Australian and New Zealand Journal of Psychiatry, 29*(4), 565–574. https://doi.org/10.3109/00048679509064968

Wolkow, K. E., & Ferguson, H. B. (2001). Community factors in the development of resiliency: Considerations and future directions. *Community Mental Health Journal, 37*(6), 489–498. https://doi.org/10.1023/a:1017574028567

Wolters, L. H., Hogendoorn, S. M., Oudega, M., Vervoort, L., de Haan, E., Prins, P. J., & Boer, F. (2012). Psychometric properties of the Dutch version of the Meta-Cognitions Questionnaire-Adolescent Version (MCQ-A) in non-clinical adolescents and adolescents with obsessive-compulsive disorder. Journal of *Anxiety Disorders, 26*(2), 343–351. https://doi.org/10.1016/j.janxdis.2011.11.013

Wong, V., & Kei, W. (2013). Metacognition in 3-6 years old: Evidence from a kindergarten in Hong Kong. *Asia -Pasific Journal of Research in Early Childhood Education, 7*(1), 1-29.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology & Psychiatry & Allied Disciplines, 17*(2), 89–100.

Wood, D., & Middleton, D. (1975). A study of assisted problem-solving. *British Journal of Psychology, 66*(2), 181–191. https://doi.org/10.1111/j.2044-8295.1975.tb01454.x

Woolfolk, A. (1998). *Educational psychology*. Allyn and Bacon.

World Health Organization. (2013). *Health 2020: A European policy framework and strategy for the 21st century*. WHO Regional Office for Europe. https://apps.who.int/iris/handle/10665/326386

Wosnitza, M., Delzepich, R., Schwarze, J., O'Donnell, M., Faust, V., & Camilleri, V. (2018). Enhancing teacher resilience: From self-reflection to professional development. In M. Wosnitza, F. Peixoto, S. Beltman, & C.F. Mansfield (Eds.), *Resilience in education: Concepts, contexts, and connections* (pp. 275-288). Springer

Wright, S. (1918). On the nature of size factors. *Genetics, 3*(4), 367–374. https://doi.org/10.1093/genetics/3.4.367

Wright, S. (1921). Correlation and causation. *Journal of Agricultural Research, 20*(7), 557-585.

Wu, X., Li, X., Lu, Y., & Hout, M. (2021). Two tales of one city: Unequal vulnerability and resilience to COVID-19 by socioeconomic status in Wuhan, China. *Research in Social Stratification and Mobility, 72*, 100584. https://doi.org/10.1016/j.rssm.2021.100584

Wyman, P. A., Sandler, I., Wolchik, S., & Nelson, K. (2000). Resilience as cumulative competence promotion and stress protection: Theory and intervention. In D. Cicchetti, J. Rapport, I. Sandler, & R. P. Weissberg (Eds.), *The promotion of wellness in children and adolescents* (pp. 133–184). Child Welfare League of America Press.

Yang, H., Yang, P., & Zhan, S. (2017). Immigration, population, and foreign workforce in Singapore: An overview of trends, policies, and issues. *HSSE Online, 6*(1), 10-25.

Yasir, M., Fikriyah, A., Qomaria, N., & Al Haq, A. T. (2020). Metacognitive skill on students of science education study program: Evaluation from answering biological questions. *JPBI (Jurnal Pendidikan Biologi Indonesia), 6*(1), 157-164. https://doi.org/10.22219/jpbi.v6i1.10081

Yates, T. M., Tyrell, F. A., & Masten, A. S. (2015). resilience theory and the practice of positive psychology from individuals to societies. In *Positive psychology in practice: Promoting human flourishing in work, health, education, and everyday life: Second edition* (pp. 773-788). Wiley. https://doi.org/10.1002/9781118996874.ch44

Yavuz, H. C., & Kutlu, Ö. (2016). Ekonomik bakımdan dezavantajlı öğrencilerin akademik yılmazlık düzeylerinin bazı koruyucu faktörler açısından incelenmesi. *Eğitim ve Bilim, 41*(186). http://dx.doi.org/10.15390/EB.2016.5497

Yener, H. (2007). *Personel performansına etki eden faktörlerin yapısal eşitlik modeli ile incelenmesi ve bir uygulama* [*A study of factors affecting employee performance with structural equational model and an application*] (Publication No. 201035) [Master's thesis, Gazi University]. Council of Higher Education Thesis Center.

Yıldız-Altan, R., & Temel, Z. F. (2023). The effect of metacognitive strategy-based geometry education on young childrens' metacognitive and executive functions skills. *Pegem Journal of Education and Instruction, 13*(2), 297–313. https://doi.org/10.47750/pegegog.13.02.34

Yıldız-Çiçekler, C., Orçan-Kaçan, M., Erdemir, E., & Aral, N. (2020). Job satisfaction and burnout levels of early childhood teachers in the U.S. and Turkey. *Adiyaman University Journal of Educational Sciences, 10*(1), 56-69.

Yılmaz, M., & Yalçın, S. (2020). Öğretmenlerin psikolojik dayanıklılıkları ile iş yaşam kaliteleri arasındaki ilişkinin araştırılması. *Uluslararası Toplum Araştırmaları Dergisi, 16,* 5955-5973. https://doi.org/10.26466/opus.711430

Yokus, T. (2015). The relation between pre-service music teachers' psychological resilience and academic achievement levels. *Educational Research and Reviews, 10*(14), 1961-1969. https://doi.org/10.5897/ERR2015.2320

Yoleri, S. (2020). Factors affecting level of children resilience and teachers' opinions about resilience. *International Journal of Assessment Tools in Education, 7*(3), 361-378. https://doi.org/10.21449/ijate.780247

Young, A., & Fry, J. D. (2008). Metacognitive awareness and academic achievement in college students. *Journal of the Scholarship of Teaching and Learning*, *8*(2), 1–10.

Yuan, L., Gao, Y., Pan, B., Wang, J., Wang, Y., Gong, C., Wang, W., & Li, X. (2022). Resilience and related factors: A comparison of fathers and mothers of patients with cleft lip and/or palate in China. *Frontiers in Psychiatry*, *12*, 791555. https://doi.org/10.3389/fpsyt.2021.791555

Yunlu, D. G., & Clapp-Smith, R. (2014). Metacognition, cultural psychological capital and motivational cultural intelligence. *Cross Cultural Management, 21*(4), 386–399. https://doi.org/10.1108/CCM-07-2012-0055

Yunus, K. R. M., & Dahlan, N. A. (2013). Child-rearing practices and socio-economic status: Possible ımplications for children's educational outcomes. *Procedia – Social and Behavioral Sciences, 90,* 251-259.

Zauszniewski, J. A., Bekhet, A. K., & Suresky, M. J. (2010). Resilience in family members of persons with serious mental illness. *Nursing Clinics of North America*, *45*(4), 613-626.

Zhai, F. (2017). Cultural orientation, parental nurturance, and parent-child conflict among Asian American parents in New York City. *Children and Youth Services Review, 76,* 1–9. https://doi.org/10.1016/j.childyouth.2017.02.026

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist, 25*(1), 3–17. https://doi.org/10.1207/s15326985ep2501_2

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13–39). Academic Press. https://doi.org/10.1016/B978-012109890-2/50031-7

Zimmerman, B. J., & Moylan, A. (2009). Self-regulation: Where metacognition and motivation intersect. In D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds.), *Handbook of metacognition in education* (pp. 299–315). Routledge. https://doi.org/10.4324/9780203876428.

Zimmerman, M. A. (2013). Resilience theory: A strengths-based approach to research and practice for adolescent health. *Health Education & Behavior: The Official Publication of the Society for Public Health Education*, *40*(4), 381–383. https://doi.org/10.1177/1090198113493782

Zohar, A., & Barzilai, S. (2013). A review of research on metacognition in science education: Current and future directions. *Studies in Science Education, 49*(2), 121-169. https://doi.org/10.1080/03057267.2013.847261

Zohar, A., & Dori, Y. J. (2003). Higher order thinking skills and low-achieving students: Are they mutually exclusive? *Journal of the Learning Sciences, 12*(2), 145–181. https://doi.org/10.1207/S15327809JLS1202_1

APPENDICES

A. DEMOGRAPHIC INFORMATION FORM FOR FAMILIES

DEMOGRAFİK VERİ FORMU (VELİ FORMU)

1. Cinsiyetiniz

( ) Kadın
( ) Erkek

2. Çocuğunuzun Cinsiyeti

( ) Kız
( ) Erkek

3. Doğum Yılınız .....

4. Öğrenim Durumunuz

( ) İlkokul Mezunu
( ) Ortaokul Mezunu
( ) Lise Mezunu
( ) 2 Yıllık Yüksekokul Mezunu
( ) Lisans Mezunu
( ) Yüksek Lisans Mezunu
( ) Doktora Mezunu
( ) Diğer .....

5. Toplam Gelir Aralığı

( ) 0-5.000
( ) 5.001-10.000
( ) 10.001-15.000
( ) 15.001 ve üzeri
( ) Diğer .....

B. DEMOGRAPHIC INFORMATION FORM FOR PRESCHOOL TEACHERS

DEMOGRAFİK VERİ FORMU (ÖĞRETMEN FORMU)

1. Cinsiyetiniz

( ) Kadın
( ) Erkek

2. Doğum Yılınız …….

3. Öğrenim Durumunuz

( ) Lise Mezunu
( ) 2 Yıllık Yüksekokul Mezunu
( ) Lisans Mezunu
( ) Yüksek Lisans Mezunu
( ) Doktora Mezunu
( ) Diğer ……

4. Kaç yıldır öğretmenlik yapmaktasınız? ……

5. Ne kadar zamandır şu an çalıştığınız öğrenciler ile çalışmaktasınız? ……

6. Çocukların üstbilişsel becerileri ile ilgili bir eğitim/kurs/seminer aldınız mı?

( ) Hayır
( ) Evet (Lütfen katıldığınız eğitim programının adını ve hangi kurum tarafından verildiğini yazınız) ……

7. Toplam Gelir Aralığı

( ) 3.000-5.000
( ) 5.001-8.000
( ) 8.001-10.000
( ) 10.001-15.000
( ) 15.001 ve üzeri
( ) Diğer ……

C. TURKISH VERSION OF THE FAMILY RESILIENCE ASSESSMENT SCALE

AİLE YILMAZLIĞI DEĞERLENDİRME ÖLÇEĞİ

Lütfen her bir ifadeyi dikkatlice okuyunuz. Kendi bakış açınızdan ailenizi değerlendirdiğinizde aşağıdaki maddelerin her birinin ailenizi ne kadar iyi tanımladığına karar veriniz ve size uygun olan bir ifadeyi işaretleyiniz.

	Kesinlikle Katılıyorum	Katılıyorum	Katılmıyorum	Kesinlikle Katılmıyorum
1. Aile özelliklerimiz beklenmedik durumlarla başa çıkabilecek kadar esnektir.				
2. Arkadaşlarımız bizi olduğumuz gibi kabullenirler.				
3. Ailemizde birbirimiz için yaptıklarımız kendimizi ailemizin bir parçası olarak hissetmemizi sağlar.				
4. Karşılaştığımız stresli olayları hayatın bir parçası olarak kabul ederiz.				
5. Problemlerin beklenmedik bir anda ortaya çıktığını kabul ederiz.				
6. Hepimiz önemli aile kararlarına katkıda bulunuruz.				
7. Güçlüklerle baş edebilir ve bir anlaşmaya varabiliriz.				
8. Bizi bir aile olarak bir arada tutan beklentilere uyum sağlayabiliriz.				
9. Aile olarak yeni çözüm yolları bulmaya açığızdır.				
10. Aile üyeleri tarafından anlaşıldığımızı düşünürüz.				
11. Komşularımızdan yardım ve destek isteriz.				
12. İbadet yapmak için cami/kilise/sinagog/cem evine gideriz.				
13. Problemlerimizle başa çıkabileceğimize inanırız.				
14. Birbirimizi anlamadığımız zaman açıklama isteyebiliriz.				
15. Aile içerisinde birbirimizle dürüst ve açık iletişim kurabiliriz.				
16. Strese girdiğimizde ailede kimseyi rahatsız etmeden bununla başa çıkabiliriz.				

	Kesinlikle Katılıyorum	Katılıyorum	Katılmıyorum	Kesinlikle Katılmıyorum
17. Problemler ortaya çıktığı zaman birbirimizle uzlaşabiliriz.				
18. Eksikliklerimizi kabullenerek ailedeki farklılıklarla başa çıkabiliriz.				
19. Bu toplumdaki insanlara ve değerlere bağlıyızdır.				
20. Ailemizdeki bireylerin konuşmaları sırasında ne demek istediklerini anlayabiliriz.				
21. Ailemizdeki önemli problemlerin üstesinden gelebiliriz.				
22. Ailemizde başka sorunlar çıksa da ayakta kalabiliriz.				
23. Ailemizdeki bireylerle nasıl iletişim kuracağımızı konuşabiliriz.				
24. Bir aile olarak zorlukların üstesinden gelebiliriz.				
25. Alacağımız kararlar hakkında birbirimize danışırız.				
26. Problemleri çözülebilecek sorunlar olarak tanımlarız.				
27. Problemleri çözünce kendimizi iyi hissederiz.				
28. Birtakım şeyleri bir çözüme ulaşana kadar tartışırız.				
29. Ailemizde görüşlerimizi özgürce ifade ederiz.				
30. Ailemize zaman ayırmaktan ve birbirimiz için bir şeyler yapmaktan mutluluk duyarız.				
31. Bu toplumdaki insanların ihtiyaç duyduğumuzda bize yardımcı olmak için istekli olduklarını hissederiz.				
32. Bu toplumda yaşarken kendimizi emniyette hissediyoruz.				
33. Aile üyeleri tarafından önemsenmediğimizi hissederiz.				
34. Kendimizi büyük problemlerle yüzleşecek kadar güçlü hissederiz.				
35. İlahi bir yaratanın olduğuna inanırız.				

	Kesinlikle Katılıyorum	Katılıyorum	Katılmıyorum	Kesinlikle Katılmıyorum
36. Problemlerimizi çözecek güce sahip olduğumuza inanırız.				
37. Duygularımızı paylaşmayız.				
38. Sıkıntılı durumlarla karşılaştığımızda toplumdan yardım geleceğine inanırız.				
39. Arkadaşlarımız için önemli olduğumuzu biliriz.				
40. Birbirimizin hatalarından ders alırız.				
41. Ailemiz içinde birbirimizle olan iletişimimizde ne kastettiğimizi biliriz.				
42. Dini aktivitelere katılırız.				
43. Komsularımızın hediyelerini ve iyiliklerini kabul ederiz.				
44. Din adamlarından tavsiye alırız.				
45. Aile üyelerinin kaygı veya problemlerini nadiren dinleriz.				
46. Aile içindeki sorumluluğu paylaşırız.				
47. Aile üyelerine sevgi ve şefkat gösteririz.				
48. Birbirimize ne kadar önem verdiğimizi ifade ederiz.				
49. Bu toplumun çocuk yetiştirmek için iyi bir toplum olduğunu düşünüyoruz.				
50. Bu toplumdaki insanlarla çok fazla birlikte olmamamız gerektiğini düşünüyoruz.				
51. İşlerin zor zamanlarda bile yoluna girebileceğine inanırız.				
52. Problemlerle baş etmek için yeni yollar deneriz.				
53. Diğer aile üyelerinin birbiriyle olan iletişimlerini anlamaya çalışırız.				
54. Aile üyelerinin duygusal veya fiziksel olarak incinmediğinden emin olmaya çalışırız.				

D. TURKISH VERSION OF THE PSYCHOLOGICAL RESILIENCE SCALE FOR ADULTS

Yetişkinler için Psikolojik Dayanıklılık Ölçeği

1. Beklenmedik bir olay olduğunda…						
Her zaman bir çözüm bulurum						Çoğu kez ne yapacağımı kestiremem
2. Gelecek için yaptığım planların…						
Başarılması zordur						Başarılması mümkündür
3. En iyi olduğum durumlar şu durumlardır…						
Ulaşmak istediğim açık bir hedefim olduğunda						Tam bir günlük boş bir vaktim olduğunda
4. …olmaktan hoşlanıyorum						
Diğer kişilerle birlikte						Kendi başıma
5. Ailemin, hayatta neyin önemli olduğu konusundaki anlayışı…						
Benimkinden farklıdır						Benimkiyle aynıdır
6. Kişisel konuları …						
Hiç kimseyle tartışmam						Arkadaşlarımla/Aile-üyeleriyle tartışabilirim
7. Kişisel problemlerimi…						
Çözemem						Nasıl çözebileceğimi bilirim
8. Gelecekteki hedeflerimi…						
Nasıl başaracağımı bilirim						Nasıl başaracağımdan emin değilim
9. Yeni bir işe/projeye başladığımda …						
İleriye dönük planlama yapmam, derhal işe başlarım						Ayrıntılı bir plan yapmayı tercih ederim
10. Benim için sosyal ortamlarda rahat/esnek olmak						
Önemli değildir						Çok önemlidir
11. Ailemle birlikteyken kendimi … hissederim						
Çok mutlu						Çok mutsuz
12. Beni …						
Bazı yakın arkadaşlarım/aile üyelerim cesaretlendirebilir						Hiç kimse cesaretlendiremez
13. Yeteneklerim…						
Olduğuna çok inanırım						Konusunda emin değilim
14. Geleceğimin … olduğunu hissediyorum						
Ümit verici						Belirsiz
15. Şu konuda iyiyimdir…						
Zamanımı planlama						Zamanımı harcama
16. Yeni arkadaşlık konusu … bir şeydir						
Kolayca yapabildiğim						Yapmakta zorlandığım

17. Ailem şöyle tanımlanabilir …						
Birbirinden bağımsız						Birbirine sıkı biçimde kenetlenmiş
18. Arkadaşlarımın arasındaki ilişkiler …						
Zayıftır						Güçlüdür
19. Yargılarıma ve kararlarıma …						
Çok fazla güvenmem						Tamamen güvenirim
20. Geleceğe dönük amaçlarım …						
Belirsizdir						İyi düşünülmüştür
21. Kurallar ve düzenli alışkanlıklar …						
Günlük yaşamımda yoktur						Günlük yaşamımı kolaylaştırır
22. Yeni insanlarla tanışmak …						
Benim için zordur						Benim iyi olduğum bir konudur
23. Zor zamanlarda, ailem …						
Geleceğe pozitif bakar						Geleceği umutsuz görür
24. Ailemden birisi acil bir durumla karşılaştığında…						
Bana hemen haber verilir						Bana söylenmesi bir hayli zaman alır
25. Diğerleriyle beraberken						
Kolayca gülerim						Nadiren gülerim
26. Başka kişiler söz konusu olduğunda, ailem şöyle davranır:						
Birbirlerini desteklemez biçimde						Birbirlerine bağlı biçimde
27. Destek alırım						
Arkadaşlarımdan/aile üyelerinden						Hiç kimseden
28. Zor zamanlarda … eğilimim vardır						
Her şeyi umutsuzca gören bir						Beni başarıya götürebilecek iyi bir şey bulma
29. Karşılıklı konuşma için güzel konuların düşünülmesi, benim için …						
Zordur						Kolaydır
30. İhtiyacım olduğunda …						
Bana yardım edebilecek kimse yoktur						Her zaman bana yardım edebilen birisi vardır
31. Hayatımdaki kontrol edemediğim olaylar (ile) …						
Başa çıkmaya çalışırım						Sürekli bir endişe/kaygı kaynağıdır
32. Ailemde şunu severiz …						
İşleri bağımsız olarak yapmayı						İşleri hep beraber yapmayı
33. Yakın arkadaşlarım/aile üyeleri …						
Yeteneklerimi beğenirler						Yeteneklerimi beğenmezler

E. TURKISH VERSION OF THE TRAIN TRACK TASK CODING SCHEME

İsim: Tarih: Sınıfı:

Tren Rayı Görevi (Üstbilişsel beceriler kodlama şeması)				
İzleme	**Örnekler**	**O**	**B**	**P**
1. Kendini Kontrol Etme; Kendi inşaatının tamamını gözden geçirmek için duraklar. Yalnızca bir alanı kontrol etmez.	Çocuk duraklar ve şimdiye kadar yaptığı tren rayına bakar.			
2. Planı Kontrol Etme, Orijinal tren yolu planının kontrol edilmesi	Çocuk üzerinde çalıştığı tren rayının planına geri bakar.			
3. İleriye Dönük İzleme, Göreve başlamadan önce görevi değerlendirir	*Bu biraz zor bir iş olacak!*			
4. Açıklama, Görev taleplerinin netleştirilmesi. Görevden önce veya görev sırasında olabilir.	*Bütün parçaları kullanabilir miyim?*			
5. İnceleme, Görevden önce veya görev sırasında farklı parçalara bakmak, duraklatmak, belirli bir parça aramamak. En az 3 saniye sürer.	Çocuk tüm tren yolunun etrafına bakar.			
6. Kendini sorgulama, Çocuk çözülmesi gereken bir problemi vurgular, kendine bir soru sorar.	Etrafında nasıl eğri olacak? (kendine sorar)			
7. Görev Zorluğu, Çocuk, görev sırasında, görevin zorluğu üzerine yorum yapar.	*Bu gerçekten çok zor!*			
8. Hata Tespiti, Bir hata fark ettiğini açıkça gösteren bir duraklama veya yorum yapar. Kontrolü takip edebilir ya da kendiliğinden olabilir.	Çocuk sorunlu bölgeye bakarken duraklar ve yüzleşir. *Bu doğru değil!*			
9. Yorumlama, Şimdiye kadar elde edilen başarıları hakkında yorum yapar.	*İşte, bu biraz daha iyi oldu.* *Tamam, bu parça bitti…*			
10. İzleme için Başkasının Kullanılması, Yardıma ihtiyaç olduğunu fark etmesi ancak sormaması, deneyciye bakması.	*Bu parçayı yapamıyorum.* (çocuk deneyciye bakar ama yardım istemez).			
11. Değerlendirme, Görevin sonunda ürünün kendiliğinden değerlendirilmesi	*Ama bu parça doğru değil.*			
12. Gerekçeli Sonlandırma, Çocuk istenmeden görevin bittiğini ve doğru olduğunu duyurdu.	*İşte.* *Bitti!*			
13. Hafıza İzleme, Çocuk yorum yapar ya da hafızası ile mücadele ettiğini gösterir.	*Offf, hatırlayamıyorum…* Bir 'hafıza' yüzü yapar.			
Kontrol				
1. Alan Temizleme, Çocuk, çalışacağı alanı temizler veya zaten boş olan bir alanda çalışmaya başlar.	Çocuk, ilk parçayı yere koymadan önce masadaki alanı eliyle temizler.			
2. Planlama, Açıkça bir plan belirtir. Görevden önce veya görev sırasında olabilir.	*Önce bu düz parçaları yapacağım.*			
3. Sıralama, Görev öncesinde veya görev sırasında materyalleri organize etmek veya gruplamak. Simetrik olarak parça eklemeyi içerir.	Çocuk iki çizginin uzunluğunu karşılaştırır.			
4. Arama, Görev öncesi ve görev sırasında malzeme aramak. En az 2 saniye sürer.	Çocuk büyük eğri arar. *Sizde düz çizgilerden var mı?*			
5. Yardım İsteme, Uygun bir noktada bir şey yapamayacağını fark etmek ve yardım istemek	*Bana onları birleştirmem için yardım eder misin?*			
6. Stratejisi Değiştirme, Öncekinden farklı bir strateji veya parça kullanmak. Sadece seçilen ilk strateji veya parça değil	Çocuk, ray parçasını ters çevirerek doğru şekilde kıvrılmasını sağlar.			
7. Jest (işaret kullanımı), Bilişsel etkinlik veya iletişimi desteklemek için jest kullanımı	Çocuk ihtiyaç duyduğu şekli parmaklarıyla çizer.			
8. Hafıza Yardımı, Bir hafıza yardımının kullanılması veya tren yolu şeklini etiketlemesi.	*Bu B şekli.* (gözlük şekli için)			

İsim: Tarih: Sınıfı:

Sürdürme ve Dikkat Dağınıklığı Hataları				
Madde ve açıklaması	**Örnek**	**O**	**B**	**P**
Strateji yok, Bir şey işe yaramadığında, aynı stratejiyi tekrar tekrar kullanır veya pes eder. NB: aynı stratejinin tekrar tekrar kullanılması için verilen bir kod.	Çocuk iki parça treni defalarca zorlamaya çalışır ve sonra pes eder.			
Planı Takip Etmemek, Bir Plan Yapıp Sonra Onu Takip Etmemek.	Çocuk düz kenardan başlayacaklarını söylüyor, ancak daha sonra eğri bir parça yerleştiriyor.			
Dar Görünüm, tüm alanı veya tüm tren yolu parçalarını gözden geçirememe.	Çocuk düz bir parça arar, ancak masanın yalnızca bir alanına bakar.			
Birleştirme odaklanma, Şekli oluşturmak yerine devreyi birleştirmeye odaklanmak.	Çocuk bir çember oluşturuyor, ancak onu birleştirmeye o kadar odaklanmış ki düz parçalar ekliyor.			
İki Olumlu, Çocuk iki ucu dışarıda kaldığında, birini tersine çevirmeleri gerektiğini fark etmeden.	Çocuğun bir 'bağlantı parçası' daha eklemesi gerekir (yanlış konumdadır ve tersine çevrilmesi gerekir). Çocuk başarılı değil.			
Büyük / Küçük Eğriler, Küçük eğriler bittiğinde, büyük eğrilere geçmesi gerektiğini fark etmeme	Eğri bir kenar yaparken çocuk tüm küçük eğrileri kullanır ve büyük eğrilere geçmesi gerektiğinin farkına varmamıştır.			
Bitirme Hatası, Kendi yaptığı raylarla, plan arasında büyük bir tutarsızlık olduğunda bitirdiklerini söyler.	Çocuk, gözlük şeklini değil, daire yaptığında bitirdiğini söyler. Düz olmak anlamına geliyordu ama eğrileri var.			
Hedef İhmali, Kuralın / hatanın farkında olduğunu göstermek ama buna göre hareket etmemek.	Bunun nedeni, bunların, bu olanlar kadar iyi dönmemesi [ancak düzeltmemesi].			
Dikkat dağıtıcı davranışlar				
Görev dışı, çocuk görevden tamamen çıkmış ve hedefi unutmuş gibi görünüyor.	Çocuk sadece tren yolu ile oynuyor ve plana uymaya çalışmıyor gibi görünüyor.			
Dikkati dağılan çocuk, diğer insanların faaliyetlerinden veya kendi düşüncelerinden rahatsız olur, ancak ara sıra görev üzerinde çalışır.	Çocuk dışarıdaki sınıfa bakmaya devam ediyor. "Teyzem bugün beni alacak".			

F. TURKISH VERSION OF THE CHILDREN'S INDEPENDENT LEARNING DEVELOPMENT (CHILD 3-5) CHECKLIST

Bağımsız Öğrenme Davranışları Ölçeği (3-5 yaş)
BÖD-3-5

Çocuğun Adı-Soyadı	
Cinsiyeti	
Doğum Tarihi (g/a/y)	
Uygulama Tarihi (g/a/y)	
Uygulamayı Yapan	
Okul	Özel ( ) Devlet ( )

DAVRANIŞLAR	Hiçbir zaman	Nadiren	Sık sık	Her zaman
1- Kendisinin ve başkalarının davranışları ve bunların sonuçları hakkında konuşabilir.				
2- Yeni uğraşılara girişirken güvenlidir.				
3- Dikkatini kontrol edebilir ve bölünmesine izin vermez.				
4- Bir işle uğraşırken gidişatı izler ve gerektiğinde yardım ister.				
5- Bir güçlükle karşılaştığında kolay pes etmez.				
6- Bir işin ne zaman ve nasıl yürütüleceği hakkında fikir alışverişinde bulunur.				
7- Arkadaşlarıyla arasındaki sosyal sorunları çözebilir.				
8- Kendisinin güçlü ve zayıf yönlerinin farkındadır.				
9- Bir şeyi nasıl yaptığı ve neler öğrendiğinden söz edebilir.				
10- İleride yapılması planlanmış etkinliklerden söz edebilir.				
11- Mantıklı seçimler yapabilir ve mantıklı kararlar verebilir.				
12- Yetişkin yardımı olmadan ihtiyacı olan kaynakları bulur.				
13- Bir işi yapmak için kendine has yollar geliştirir.				
14- Etkinlikleri başlatır.				
15- Kendi hedeflerini ve uğraşlarını planlar.				
16- Sorun çözmekten hoşlanır.				

G. APPROVAL OF THE METU HUMAN SUBJECTS ETHICS COMMITTEE

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

DUMLUPINAR BULVARI 06800
ÇANKAYA ANKARA/TURKEY
T: +90 312 210 22 91
F: +90 312 210 79 59
ueam@metu.edu.tr
www.ueam.metu.edu.tr

Sayı: 28620816 /

14 MART 2022

Konu : Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi : İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Doç. Dr. Hasibe Özlen DEMİRCAN

Danışmanlığını yürüttüğünüz Nazlı Berfin Yapar'ın "Okul Öncesi Dönemdeki Çocukların Üstbilişsel Becerileri ile Öğretmenlerinin ve Ailelerinin Yılmazlığı Arasındaki İlişkinin İncelenmesi" başlıklı araştırmanız İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve **0135-ODTUİAEK-2022** protokol numarası ile onaylanmıştır.

Saygılarımızla bilgilerinize sunarız.

Prof.Dr. Mine MISIRLISOY
İAEK Başkan

H. APPROVAL OF THE MINISTRY OF NATIONAL EDUCATION

T.C.
ANKARA VALİLİĞİ
Milli Eğitim Müdürlüğü

Sayı : E-14588481-605.99-49000005 05.05.2022
Konu : Araştırma İzni

ORTA DOĞU TEKNİK ÜNİVERSİTESİ REKTÖRLÜĞÜNE
(Öğrenci İşleri Daire Başkanlığı)

İlgi: a) MEB Yenilik ve Eğitim Teknolojileri Genel Müdürlüğünün 2020/2 sayılı Genelgesi.
b) 22.04.2022 tarihli ve 299 sayılı yazınız.

Üniversiteniz Temel Eğitim Ana Bilim Dalı Okul Öncesi Eğitimi yüksek lisans öğrencisi Nazlı Berfin YAPAR'ın **"Okul Öncesi Dönemdeki Çocukların Üstbilişsel Becerileri İle Öğretmenlerinin ve Ailelerinin Yılmazlığı Arasındaki İlişkinin İncelenmesi"** konulu çalışması kapsamında İlimiz merkez ilçelerine bağlı anaokulları ve anasınıflarında uygulama yapma talebi ilgi (a) Genelge çerçevesinde incelenmiştir.

Yapılan inceleme sonucunda, söz konusu araştırmanın Müdürlüğümüzde muhafaza edilen ölçme araçlarının; Türkiye Cumhuriyeti Anayasası, Milli Eğitim Temel Kanunu ile Türk Milli Eğitiminin genel amaçlarına uygun olarak, ilgili yasal düzenlemelerde belirtilen ilke, esas ve amaçlara aykırılık teşkil etmeyecek, eğitim-öğretim faaliyetlerini aksatmayacak şekilde okul ve kurum yöneticilerinin sorumluluğunda, gönüllülük esasına göre uygulanması Müdürlüğümüzce uygun görülmüştür.

Bilgilerinizi ve gereğini rica ederim.

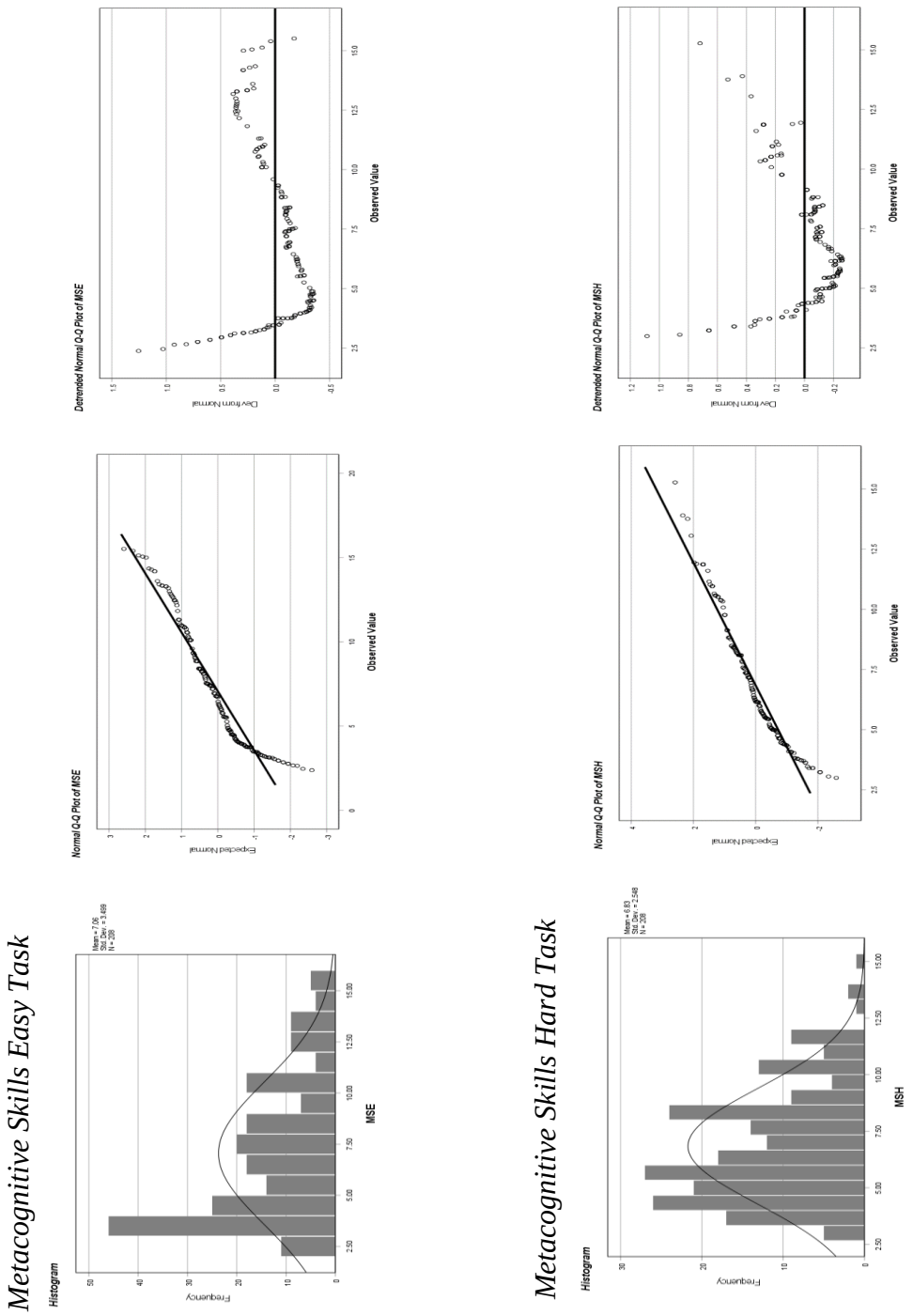
Harun FATSA
Vali a.
Milli Eğitim Müdürü

Ek:
Uygulama Araçları

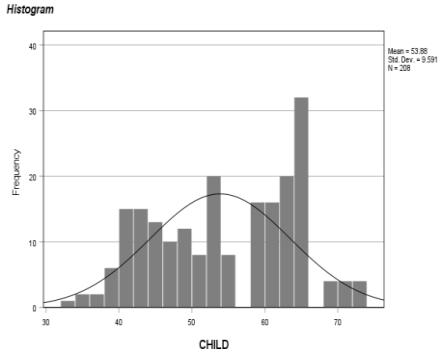
Dağıtım:
Gereği:
ODTÜ

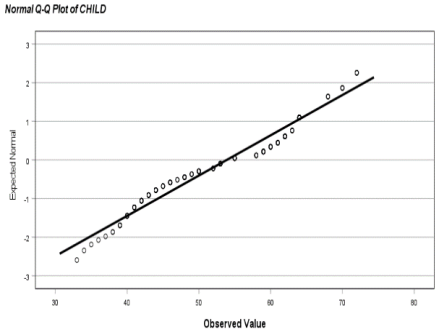
Bilgi:
9 Merkez İlçe

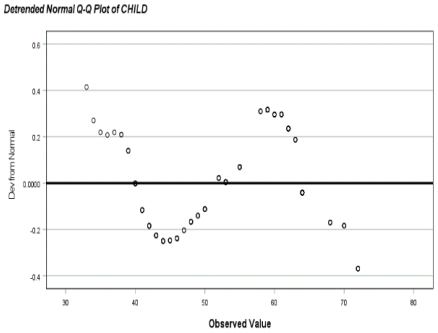
I. HISTOGRAMS, NORMAL Q-Q PLOTS AND DETRENDED Q-Q PLOTS FOR NORMALITY CHECK



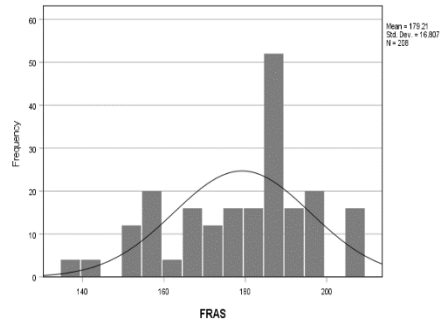
CHILD (3-5) Checklist

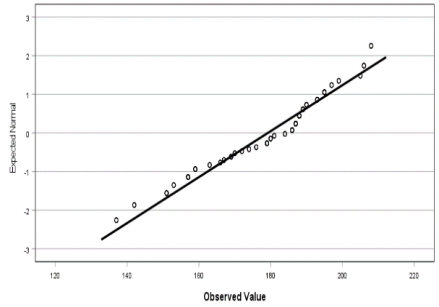


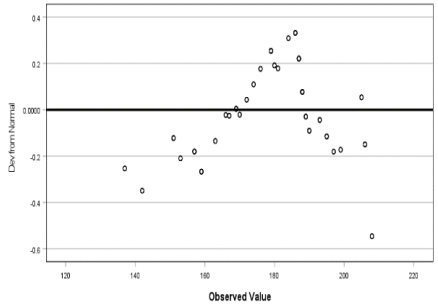




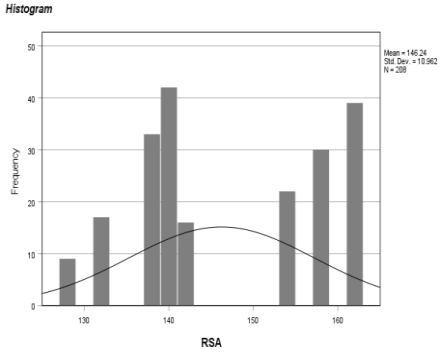
Family Resilience Assessment Scale (FRAS)

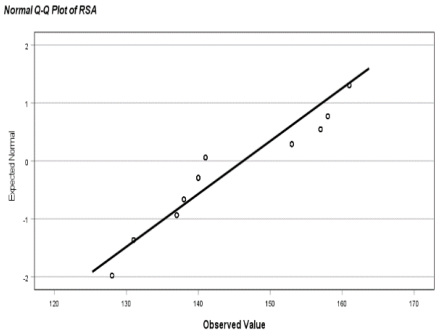


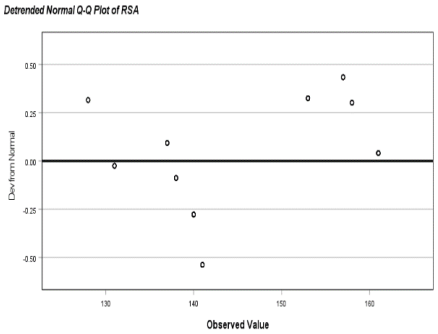




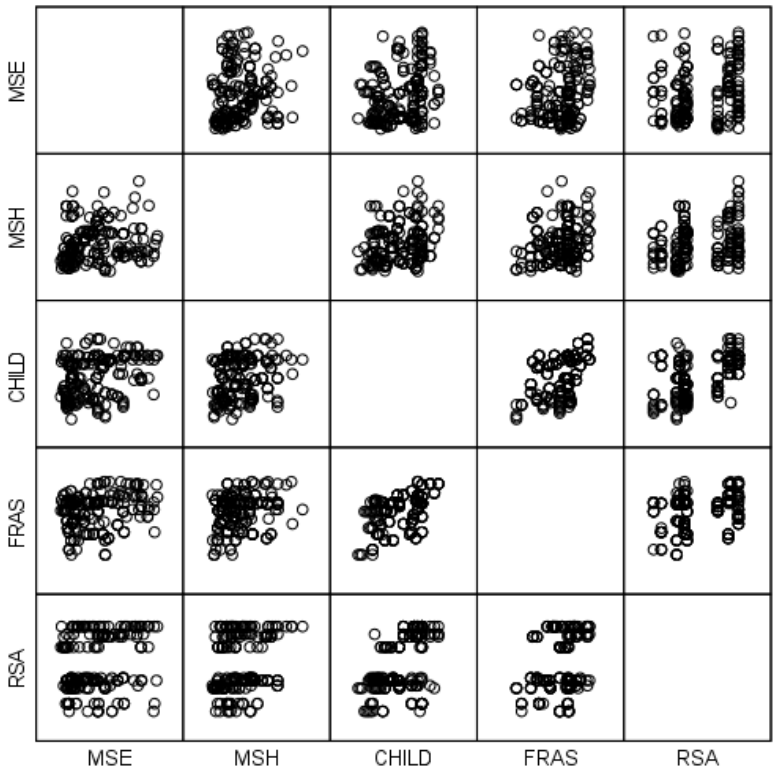
Psychological Resilience Scale for Adults (RSA)







J. SCATTER PLOT FOR LINEARITY AND HOMOSCEDASTICITY



K. PERMISSION FOR THE FAMILY RESILIENCE ASSESSMENT SCALE

Re: Aile Yılmazlığı Değerlendirme Ölçeği Kullanım İzni Hakkında
2 ileti

Hüdayar Cihan < > 20 Şubat 2022 18:32
Yanıtlama Adresi: Hüdayar Cihan < >
Alıcı: Berfin Yapar < >

Merhaba
İstemiş oldğunuz ölçeği ekte gönderiyorum. Çalışmanızın sonuçlarını benimle de paylaşabilirseniz sevinirim.
İyi çalışmalar

Doç. Dr. Hüdayar CIHAN

Tel:
e-mail:

Associate Professor, Hudayar CIHAN

Tel:
e-mail:

On Sunday, February 20, 2022, 01:12:39 PM GMT+3, Berfin Yapar < > wrote:

Sayın Doç. Dr. Hüdayar Cihan Güngör,

ODTÜ Okul Öncesi Eğitimi Anabilim Dalı yüksek lisans öğrencisi ve araştırma görevlisiyim. Doç. Dr. Hasibe Özlen Demircan danışmanlığında yapmayı planladığım 'Okul Öncesi Dönem Çocukların Üstbilişsel Becerileri ile Ailelerinin ve Öğretmenlerinin Yılmazlıkları Arasındaki İlişkinin İncelenmesi' konulu tez çalışmamda Türkçeye uyarlamasını yaptığınız 'Aile Yılmazlığı Değerlendirme Ölçeği'ni izniniz olursa kullanmak istiyorum.

Ölçeğin kullanım iznini ve gerekli bilgileri saygılarımla rica ediyorum.

İyi çalışmalar dilerim.

Saygılarımla,
Nazlı Berfin Yapar

L. PERMISSION FOR THE PSYCHOLOGICAL RESILIENCE SCALE FOR ADULTS

Yetişkinler için Psikolojik Dayanıklılık Ölçeği Kullanım İzni Hakkında

From Berfin Yapar on 2022-03-08 14:13

Details

Sayın Prof. Dr. Hamdullah Nejat Basım,

ODTÜ Okul Öncesi Eğitimi Anabilim Dalı yüksek lisans öğrencisi ve araştırma görevlisiyim. Doç. Dr. Hasibe Özlen Demircan danışmanlığında okul öncesi öğretmenlerinin yılmazlıklarını incelemeyi planladığım tez çalışmam için geçerlilik ve güvenilirlik çalışmasını yaptığınız 'Yetişkinler için Psikolojik Dayanıklılık Ölçeği'ni izniniz olursa kullanmak istiyorum.

Ölçeğin kullanım iznini ve gerekli bilgileri saygılarımla rica ediyorum.

İyi çalışmalar dilerim.

Saygılarımla,
Nazlı Berfin Yapar

---

yetişkinler için psikolojik dayanıklılık ölçeği
1 mesaj

Nejat Basim < > 8 Mart 2022 15:03
Alıcı:

Değerli Arş. Gör. Nazlı Berfin Yapar,
Mesajınızı bu adresimden yanıtlıyorum. Ölçeği çalışmalarınızda kullanabilirsiniz. Ölçeğin yer aldığı makaleyi, makalenin sonunda yer alan ölçeğin word ortamındaki halini ve değerlendirme esaslarını içeren bilgi notunu ekte gönderiyorum.
Çalışmalarınızda kolaylıklar dilerim.

--
Prof. Dr. H. Nejat Basım

Tel:
e-posta:
e-posta:

M. PERMISSION FOR THE TRAIN TRACK TASK

Re: Tren Rayı Görevi Bilgileri Hakkında
12 ileti

Pelin Pekince <[redacted]> 23 Şubat 2022 20:49
Alıcı: Berfin Yapar <[redacted]>

Merhaba Berfin hocam,
Tabi kullanabilirsiniz.

23 Şub 2022 Çar 14:43 tarihinde Berfin Yapar <[redacted]> şunu yazdı:

> Pelin Hocam merhaba,
>
> İsmim Berfin Yapar, Özlen Hoca'nın yüksek lisans öğrencisiyim. Dün ölçme aracı ile ilgili sizinle görüşmüştü hocamız, gönderdiğiniz bilgiler için çok teşekkür ederim. Tren rayı görevi benim tez araştırmama çok uyuyor, izniniz olursa uyarlanmış halini tezimde kullanmak istiyorum. Bu sebeple birkaç soru sormak istemiştim, yardımcı olabilirseniz çok sevinirim.
>
> Çok teşekkür ederim, iyi çalışmalar dilerim.
>
> Saygılarımla,
> N. Berfin Yapar

N. PERMISSION FOR THE CHILDREN'S INDEPENDENT LEARNING DEVELOPMENT (CHILD 3-5) CHECKLIST

Bağımsız Öğrenme Davranışları Ölçeği 3-5 için Kullanım İzni Hakkında
3 ileti

Berfin Yapar < > 25 Şubat 2022 10:52
Alıcı:

Sayın Seda Hocam merhaba,

Ben Nazlı Berfin Yapar, ODTÜ Okul Öncesi Eğitimi bölümünde yüksek lisans öğrencisi ve araştırma görevlisiyim. Hocam sizi Bağımsız Öğrenme Davranışları Ölçeği 3-5 için rahatsız ediyordum kusura bakmayın.

Hocam ben Doç. Dr. Hasibe Özlen Demircan'ın danışmanlığında yüksek lisans tezimi yazmaya başlayacağım. Tezim için okul öncesi dönemdeki çocukların üstbilişsel becerilerine odaklanacağım. Bu konu ile ilgili David Whitebread'in çalışmalarını incelerken sizin Türkçeye 'Bağımsız Öğrenme Davranışları Ölçeği 3-5' olarak uyarladığınız Children's Independent Learning Development Checklist (CHILD 3-5) ölçeğine ulaştım. Ölçeğinizin çalışmama çok uygun olacağını düşünüyorum ve uygulamak üzere kullanmak için izninizi istiyorum. Eğer sizin için de uygun olursa ölçeği benimle paylaşmanız mümkün müdür?

Çok teşekkür ederim, iyi çalışmalar dilerim.

Saygılarımla,

N. Berfin Yapar

Seda SARAC < > 25 Şubat 2022 19:13
Alıcı: Berfin Yapar < >

Merhaba Berfin Yapar,
Çalışmamıza gösterdiğiniz ilgiden dolayı teşekkür ederiz. Ölçek ektedir. Çalışmanızda kullanabilirsiniz

Dr. Öğr. Üyesi Seda SARAÇ / Assist. Prof. Seda SARAÇ

O. TURKISH SUMMARY / TÜRKÇE ÖZET

1. GİRİŞ

'Meta' daha ileri veya daha yüksek bir seviyeye geçme duygusu anlamına gelirken, 'cognition' bilme veya düşünme yeteneğini ifade eder; bu nedenle, ‘metacognition’ kelimesi üst düzey bir düşünmeyi temsil eder (Larkin, 2009). Benzer şekilde, terimi ilk ortaya atan Flavell (1976) bunu şu şekilde tanımlamaktadır: "Üstbiliş, kişinin kendi bilişsel süreçleri veya bunlarla ilgili herhangi bir şey hakkındaki bilgisine atıfta bulunur" (s.232). Bilişsel işlevlere odaklanabilmek ve kararları analiz edebilmek için bireyin üstbilişsel beceriler olarak adlandırılan belirli becerilere sahip olması gerekir.

Üstbilişsel beceriler, dikkat, anlama, problem çözme, bilgileri sözel olarak paylaşma, kendini kontrol etme, okuma ve yazma, öğrenme veya hafızayı içeren çok çeşitli etkinliklerde kritik bir role sahiptir (Escolano-Perez vd., 2019). Bu, üstbilişsel becerilerin zekadan ziyade akademik başarının makul bir yordayıcısı olarak kabul edildiğinin farkına varılmasını sağlar (Bryce vd., 2015; Maric & Sakac, 2018; Nelson & Marulis, 2017). Bu nedenle üstbilişsel beceriler ve bunları kullanabilme, başarılı ve başarısız öğrenciler arasında ayırt edici bir faktör haline gelmektedir.

Peki üstbiliş nasıl gelişir? Ve üstbilişsel beceriler ne zaman ortaya çıkmaya başlar? Aslında üstbilişsel beceriler çok erken yaşta ortaya çıkar ve sonraki yıllarda gelişir (Roebers, 2017). Bu becerilerin gelişimini birkaç unsur etkiler; bunlardan biri çocuğun kendisidir. 12-18 aylık çocukların, doğruluğunu değerlendirmek ve sonraki davranışlarını davranışları aracılığıyla uyarlamak için yargılarını zaten yansıtabildiklerini belirttikleri keşfedilmiştir (Escolano-Perez vd., 2019). Ayrıca Sperling vd. (2000), üç yaşında çocukların problem çözme davranışlarını izleyebildiklerini ve dört yaşındakilerin yapboz görevlerinde üstbilişsel işlemeyi kullandıklarını bulmuşlardır. Çok sayıda araştırma, özellikle 3-5 yaş arasındaki çocukların üstbilişsel becerilerinin önemli ölçüde geliştiğini göstermektedir. Çocukların üstbilişsel becerilerini etkileyen bir diğer faktör de ebeveynleridir.

Ebeveynler, çocukların üstbilişsel gelişimini desteklemede önemli bir rol oynamaktadır (Pino-Pasternak & Whitebread, 2010). Üstbilişsel gelişimi ve öz düzenlemeyi teşvik eden etkileşimler ilk olarak ev ortamında gerçekleşir (Marliyani & Suradijono, 2019). Üstbilişin kökenlerini ele alan teoriler, ebeveynlerin etkileşimi ile çocukların üstbilişsel becerilerinin gelişimi arasında bir bağlantı olduğunu öne sürer. Benzer şekilde Rani ve Duhan (2020) tarafından yakın zamanda yapılan bir başka araştırma da aile ortamının çocukların üstbilişsel gelişimleri üzerinde etkisi olduğunu ortaya koymuştur.

Carr vd. (1989) sadece ebeveynlerin değil öğretmenlerin de çocukların üstbilişsel becerilerini geliştirerek bilişsel gelişimlerini destekleyebileceğini belirtmiştir. Dolayısıyla öğretmenler üstbilişsel becerilerin gelişimini etkileyen diğer bir faktördür. Chatzipanteli vd. (2014), üstbilişin öğretilebilir olduğunu ve eğitimcilerin öğrencilerine çok genç yaşta bile bu konuda yardımcı olabileceğini belirtmiştir. Fogarty (2005), öğretmenlerin, düşünme becerilerini ve kavramlarını öğreterek, etkileşimi yapılandırarak ve çocukları kendi düşünceleri hakkında düşünmeye teşvik ederek düşünme iklimini oluşturduklarını ileri sürmektedir. Bu nedenle okul öncesi öğretmenlerinin okul öncesi çocukların üstbilişsel becerilerini geliştirmede kritik bir rolü olduğu söylenebilir.

Öğretmen ve ebeveynler, çocuğun en aşina olduğu ve en yakın çevresi olan mikro sistemindedir; bu nedenle bu çevrede yer alan bireylerdeki değişiklikler çocuğu doğrudan etkiler (Bronfenbrenner, 1979). Bir öğretmenin ruh halinin istikrarlı ve iyi olması öğrencilerin gelişimini olumlu etkileyeceği gibi, olmaması ise olumsuz etkiler. Gray vd. (2017), tükenmişlik hisseden öğretmenlerin sinirlilik gibi öğrencilerini olumsuz etkileyen bir dizi davranışa sahip olduklarını ortaya koymuştur. Benzer şekilde bu durum ebeveynler için de geçerlidir. Çeşitli araştırmalar, sosyo-ekonomik dezavantaj, erken yaşta ebeveynlik, ebeveyn ayrılığı, ebeveyn ruh sağlığı sorunları, stresli aile yaşamı gibi çok sayıda aile sıkıntısı türünün çocukların zihinsel problemler geliştirme olasılığını artırdığını göstermiştir (Bradley & Corwyn, 2002; Fergusson & Horwood, 2001; Masten vd., 1999). “Resilience” ise bu tarz önemli zorluklara maruz kalınmasına rağmen olumlu uyum sürecini sürdürmeyi ifade eder (Luthar, 2006; Masten vd., 2009).

Alanyazın incelendiği zaman "resilience" kavramının Türkçe karşılığının farklı disiplinlerde farklı anlamlarda kullanıldığı görülmektedir. Bu kavramdan genellikle dayanıklılık, yılmazlık, sağlamlık, uyum sağlayabilme ve esneklik gibi anlamlarda farklı akademik disiplinlerde faydalanılmaktadır (Gerçek & Yılmaz-Börekçi, 2019). Bu çalışmada ölçme araçları ile uyumlu olması adına diğer çalışmalarda da olduğu gibi (Çiftçi-Arıdağ & Ünsal-Seydooğulları, 2017; Güney & Yalçın, 2020; Kaner & Bayraklı, 2010; Yavuz & Kutlu, 2016) "yılmazlık" olarak isimlendirilmektedir.

Yılmazlık kavramı 1970'lerde tanınmaya başlanmış ve o zamandan beri bir sürü çalışmaya konu olmuştur (Masten & Barnes, 2018). Çocuklarda ve gençlerde (Goldstein & Brooks, 2013; Masten, 2014), yetişkinlerde (Southwick & Charney, 2018) ve ailelerde (Walsh, 2016a; 2016b) yılmazlığa dair kanıtları içeren alanyazınlar mevcuttur. Yılmazlık konusunun bu kadar çalışılmaya başlanmasının en önemli nedenlerinden biri, 21. yüzyıl becerilerinden biri olarak görülmesi olabilir (Brown vd., 2015).

Yılmazlık, insan, aile, ekonomi, iş, okul ve yeryüzündeki birçok dinamik ekosistemin dahil olduğu karmaşık sistemleri anlamakla ilgilidir (Masten, 2021). Bu dinamik sistemlerden biri de ailelerdir. Aile Sistemleri Teorisine göre aileler, istikrar ve değişim ile karakterize edilen dinamik sistemlerdir (Kerr & Bowen, 1988). Bir problem ortaya çıkarsa, bir dengesizliğe neden olur ve tüm aile üyeleri dengeyi kurmak için bu değişikliklere uyum sağlamalıdır. Dayanıklı ebeveynlik ise bir ebeveynin stresli veya olumsuz koşullar altında olumlu davranış kalıpları ve işlev gösterme yeteneği olarak adlandırılır (McCubbin vd., 1996). Bu süreçler sırasında ebeveynlerin uygulamaları, çocukların esenliğini koruma veya stresli ortamlarda gelişimsel riskleri artırma kapasitesine sahiptir (Nerenberg & Gewirtz, 2017). Masten (2018), çocuklarla ilgilenen kişilerin yılmazlığını, çocukların refahının merkezi olmasının yanı sıra aile sisteminin de merkezi olarak tanımlamaktadır. Aile ortamının yanı sıra çocuklar zamanlarının çoğunu okul ortamında geçirirler. Bu bağlamda öğretmenler, zamanlarının çoğunu geçirdikleri yetişkin figürlerdir ve öğretmenlerin öğrencilerin gelişimleri üzerindeki etkisi bir sürü araştırma ile çeşitli yönlerden kanıtlanmıştır. Bu nedenle öğretmenlerin yılmazlık düzeylerinin araştırılmasının önemli olduğu düşünülmektedir.

Öğretmen yılmazlığı, bir öğretmenin zorlu ve tehlike yaratan durumlarla karşı karşıya kaldığında bile başarılı bir şekilde uyum sağlama yeteneği olarak tanımlanmaktadır (Greenfield, 2015). Öğretmenlik mesleğinde karşılaşılan beklentiler ve günlük zorluklarla birlikte, öğretmenler işyerindeki her zorlu sıkıntıya başarılı bir şekilde uyum sağlamalı ve üstesinden gelebilmelidir (Greenfield, 2015). Öğretmenler, zor durumlarda öğretme konusundaki motivasyonlarını ve güvenlerini yeniden kazanmak için etkili bir şekilde "geri dönebilmelidir" (Richards vd., 2014). Öğretmenler okullarda karşılaşılan zorluklara uyum sağlama ve bu zorluklardan geri dönme becerilerinden yoksunlarsa, daha az verimli olacaklar, moralleri ve bağlılıkları zayıflayacak ve bu da muhtemelen öğrencilerin öğrenmesini ve eğitimini etkileyecektir (Greenfield, 2015).

Birçok çalışma üstbilişin farklı değişkenlerle ilişkisini incelemiştir. Bununla birlikte, yılmazlık ile ilişkisini inceleyen araştırmalar nadirdir. Narayanan (2009) tarafından yürütülen bir araştırma, lise öğrencilerinin üstbilişleri ile yılmazlık düzeyleri arasındaki ilişkiye odaklanmıştır. Bu çalışma sonucunda, üstbilişin yılmazlık üzerinde anlamlı bir etkisi olduğu bulunmuştur. Ancak araştırmacının bilgisi dahilinde erken yaşlardaki çocuklarla ilgili çalışmalara ulaşılamamıştır. Bu nedenle bu çalışmanın ebeveynler, öğretmenler ve erken çocukluk dönemi çocukları için gerekli olduğu düşünülmektedir.

Çalışmanın Amacı

Bu araştırma, okul öncesi dönem çocuklarının üstbilişsel becerileri ile anne babalarının ve öğretmenlerinin yılmazlıkları arasında ilişkiyi incelemeyi amaçlamaktadır. Mevcut araştırma aşağıdaki araştırma sorularına odaklanacaktır:

1. Erken çocukluk dönemindeki çocukların üstbilişsel becerileri ne düzeydedir?
    1.1. Erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile cinsiyetleri arasında anlamlı bir fark var mıdır?
    1.2. Erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile ebeveynlerinin eğitim durumları arasında anlamlı bir fark var mıdır?
    1.3. Erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile ailenin gelir düzeyi arasında anlamlı bir fark var mıdır?

2. Erken çocukluk dönemindeki çocukların ebeveynlerinin yılmazlıkları ne düzeydedir?

2.1. Erken çocukluk dönemindeki çocukların ebeveynlerinin yılmazlığı ile ebeveynin cinsiyeti arasında anlamlı bir fark var mıdır?

2.2. Erken çocukluk dönemindeki çocukların ebeveynlerinin yılmazlığı ile eğitim durumları arasında anlamlı bir fark var mıdır?

2.3. Erken çocukluk dönemindeki çocukların ebeveynlerinin yılmazlığı ile ailenin gelir düzeyi arasında anlamlı bir fark var mıdır?

3. Okul öncesi öğretmenlerinin yılmazlığı nedir?

3.1. Okul öncesi öğretmenlerinin yılmazlığı ile eğitim durumları arasında anlamlı bir fark var mıdır?

3.2. Okul öncesi öğretmenlerinin yılmazlığı ile gelir düzeyleri arasında anlamlı bir fark var mıdır?

4. Erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile ebeveynlerinin yılmazlıkları arasında bir ilişki var mıdır?

5. Erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile okul öncesi öğretmenlerinin yılmazlıkları arasında bir ilişki var mıdır?

6. Erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile ebeveynlerinin ve okul öncesi öğretmenlerinin yılmazlıkları arasındaki doğrudan ve dolaylı ilişkiler nelerdir?

Çalışmanın Önemi

Bazı araştırmacılar, üst bilişi 21. yüzyılın en belirgin öğrenme becerilerinden biri olarak görmektedir (Muawiyah vd., 2019). Bu bağlamda, üstbilişsel beceriler, yazma, matematik, bilgi teknolojisi gibi farklı bilgi alanlarıyla ilişkilendirilmiş ve bu da üstün becerilere sahip bireylerin üstün bilişsel performanslara sahip olduğu sonucunu göstermiştir (Al-Shabibi & Alkharusi, 2018). 1980'lere kadar uzanan birçok meta-analiz, üstbiliş ve öğrencilerin akademik performansı arasında pozitif bir ilişki bulmuştur (Dignath vd., 2008; Donker vd., 2014; Haller vd., 1988; Ohtani & Hisasaka, 2018). Benzer şekilde, Garzon vd. (2020), daha iyi akademik performans sergileyen öğrencilerin, düşük not alan öğrencilere göre daha yüksek üstbilişsel yeteneklere sahip olduğunu ortaya koymuştur.

Öte yandan, aynı derecede önemli olan farklı çalışmalar, düşük akademik performansa sahip katılımcıların üstbilişsel becerilerini geliştiren ve öğrenme başarılarını destekleyen stratejiler uygulayabildiğini kanıtlamaktadır (Garzon vd., 2020). Öğrenme ve eğitimdeki bu başarı, yöneticiler, öğretmenler ve eğitim kurumlarının çocukların üstbilişsel becerilerini geliştirmek için eğitimsel müdahale süreçlerini ortaklaşa tasarlamaları, uygulamaları ve yönetmeleri ile mümkündür (Garzon vd., 2020).

Üstbiliş, başarılı öğrenmede temel bir beceri olduğundan, birçok çalışma cinsiyet (Akın, 2016; Ciascai & Lavinia, 2011; Hemdan, 2012) ve eğitim düzeyi (Harding vd., 2019; Roeschl-Heils vd., 2003; Van-Kraayenoord vd., 2012) gibi değişkenlerle olan ilişkisini incelemiştir. Ancak, araştırmacının bilgisi dahilinde, hiçbiri aile ve öğretmenlerin yılmazlığı ile olan ilişkisine odaklanmamıştır. Bu nedenle bu çalışmanın bu açıları da göz önünde bulundurarak alanyazına katkı sağlamıştır.

Bu araştırmanın hedef kitlesini, yılmazlık ve üstbiliş hakkında farkındalık kazanmak ve çok erken yaşlardan itibaren üstbilişin gelişimini destekleyecek uygulama ve politikaları teşvik etmek için politika oluşturucular, aileler, erken çocukluk öğretmenleri, okul öncesi müdürleri ve okul yöneticileri oluşturmaktadır.

2. YÖNTEM

Araştırmanın Deseni

Araştırmanın amaçları, erken çocukluk dönemindeki çocukların üstbilişsel becerilerinin düzeylerini, ailelerinin yılmazlıklarının düzeylerini ve okul öncesi öğretmenlerinin yılmazlıklarının düzeylerini incelemektir. Ek olarak, bu çalışma, erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile ailelerinin ve okul öncesi öğretmenlerinin yılmazlıkları arasındaki olası ilişkiyi incelemeyi amaçlamaktadır. Son olarak, erken çocukluk dönemindeki çocukların üstbilişsel becerilerinin ebeveynlerinin ve okul öncesi öğretmenlerinin yılmazlıkları ile olan doğrudan ve dolaylı ilişkilerini keşfetmeyi hedeflemektedir. Bu bağlamda, açıklayıcı ilişkisel araştırma deseni kullanılmış ve değişkenlere müdahale edilmeden değişkenler arasındaki ilişkilerin olası durumu yol analizi ile incelenmiştir (Creswell, 2012; Fraenkel vd., 2012).

Örneklem

Bu çalışmaya, Ankara ilinin Çankaya, Keçiören, Yenimahalle, Altındağ ve Gölbaşı ilçelerinde Millî Eğitim Bakanlığı'na bağlı resmi bağımsız anaokulları, resmi anasınıfları, özel anasınıfları ve özel bağımsız anaokullarına kayıtlı 248 çocuk, ebeveynleri ve 40 okul öncesi öğretmeni katılmıştır. Katılımcılara, gönüllülük ve kolay ulaşılabilirlik esasları göz önünde bulundurularak kolayda örneklem yöntemiyle ulaşılmıştır (Fraenkel vd., 2012). Sadece veri güvenilirliğini sağlayabilmek adına katılımcı okul öncesi öğretmenleri seçilirken en az 6 aydır çocuğu tanıyor olmasına dikkat edilmiştir.

Veri Toplama Araçları

Araştırmanın verileri altı farklı ölçme aracı ile toplanmıştır ve detayları Tablo 1'de sunulmuştur. Öncelikle, araştırmacı tarafından oluşturulan aileler için demografik bilgi formları ve okul öncesi öğretmenleri için demografik bilgi formları katılımcılar ile paylaşılmıştır. Daha sonrasında, ailelere Sixbey (2005) tarafından geliştirilen ve Cihan-Güngör (2014) tarafından Türkçeye uyarlanmış olan Aile Yılmazlığı Değerlendirme Ölçeği ve okul öncesi öğretmenlerine ise Friborg vd. (2005) tarafından geliştirilen ve Türkçeye uyarlaması Basım ve Çetin (2011) tarafından yapılan Yetişkinler için Psikolojik Dayanıklılık Ölçeği uygulanmıştır. Ayrıca, okul öncesi öğretmenleri erken çocukluk dönemindeki öğrencileri için Whitebread vd. (2009) tarafından geliştirilen ve Saraç vd. (2019) tarafından Türkçeye uyarlanmış olan Bağımsız Öğrenme Davranışları Ölçeği 3-5'i (BÖD 3-5) doldurmuşlardır. Son olarak da erken çocukluk dönemindeki çocuklardan Bryce ve Whitebread (2012) tarafından geliştirilen ve geçerlik ve güvenilirlik çalışması Pekince ve Avcı (2021) tarafından yapılan Tren Rayı Görevi ile veri toplanmıştır.

Tablo 1 *Veri Toplama Araçları*

Veri Toplama Araçları	*Değişkenler*
Aileler için Demografik Bilgi Formu	Cinsiyet Çocuklarının yaşı Yaş Eğitim durumu Aylık aile geliri

Tablo 1 (devamı)

Okul Öncesi Öğretmenleri için Demografik Bilgi Formu	Yaş Eğitim durumu Deneyim yılı Aynı çocuklarla çalışma süresi Çocukların üstbilişsel becerilerine yönelik alınan seminer/kurs/ders bilgisi Aylık gelir
Aile Yılmazlığı Değerlendirme Ölçeği	Aile yılmazlığı puanı
Yetişkinler için Psikolojik Dayanıklılık Ölçeği	Okul öncesi öğretmenlerinin yılmazlık puanı
Tren Rayı Görevi	Üstbilişsel becerilerin olumlu örnekleri (izleme ve kontrol) Üstbilişsel becerilerin hataları (sürdürme ve dikkat dağınıklığı)
Bağımsız Öğrenme Davranışları Ölçeği 3-5	Erken çocukluk dönemindeki çocukların öz-düzenlemeyle öğrenme puanları

Veri Analizi

Araştırmanın veri analiz süreci, üç aşamada gerçekleştirilmiştir. İlk olarak veriler, uç değerler ve kayıp veriler açısından taranmış ve sonraki analizler için karşılanması gereken varsayımlar açısından sınanmıştır. Sonrasında IBM SPSS 28 programı aracılığıyla araştırma soruları kapsamında betimleyici istatistikleri elde edebilmek için değişkenler uygun analizlere sokulmuş ve sonuçlar incelenmiştir. Bu analizler sonucunda son araştırma sorusunu cevaplayabilmek adına IBM SPSS Amos 26 yazılımında bir model oluşturulmuş ve oluşturulan model yol analizi ile test edilmiştir.

Araştırmanın Sınırlılıkları

Öncelikle, araştırmaya katılan ailelerin ve okul öncesi öğretmenlerinin veri toplama araçlarında yer alan maddelerle ilgili görüşlerini doğru ve eksiksiz olarak paylaştığı varsayılmıştır. Ayrıca, araçlarda yer alan ifadelere yanıt verirken aileler ile okul öncesi öğretmenleri arasında herhangi bir iletişim veya etkileşim olmadığı varsayılmıştır.

Veriler yalnızca Ankara'da toplanmıştır; bu durum bulguların Türkiye'deki diğer şehirlere genellenememesine sebep olmuştur. Ayrıca, çalışmaya hiç erkek okul öncesi

öğretmeni katılmamıştır; bu nedenle, okul öncesi öğretmeninin cinsiyetinin çalışmadaki değişkenler ile ilişkisi bilinmemektedir. Buna ek olarak, özel okulların çalışmaya katılmaya isteksiz olması sebebiyle çoğu veri devlet okullarından toplanmıştır. Bu durum okul sayıları arasında bir eşitsizliğe neden olmuştur. Ayrıca, ailelerle okul öncesi öğretmenleri aracılığıyla iletişime geçilmiştir ve veriler toplanmıştır. Bu durumun sonucunda ölçeklerin yaklaşık yarısı geri alınamamıştır. Son olarak, ailelerin ve okul öncesi öğretmenlerinin yılmazlığına ilişkin veriler sadece öz-bildirim yöntemiyle toplanmıştır, ek alternatif değerlendirme teknikleri kullanılmamıştır.

3. BULGULAR ve TARTIŞMA

Erken Çocukluk Dönemindeki Çocukların Üstbilişsel Becerileri

Araştırmanın amaçlarından biri erken çocukluk dönemindeki çocukların üstbilişsel becerilerinin ne düzeyde olduğunu ve üstbilişsel becerilerin farklı demografik değişkenlerle ilişkisi olup olmadığını incelemektir. Bu kapsamda çocukların cinsiyetinin, ailesinin eğitim düzeyinin ve ailesinin gelir düzeyinin erken çocukluk dönemindeki çocukların üstbilişsel becerilere etki edip etmediği araştırılmıştır.

Araştırmanın sonuçları erken çocukluk dönemindeki çocukların üstbilişsel beceriler sergilediğini ortaya koymuştur. Bu bulgular alanyazında yer alan önceki çalışmaları destekler niteliktedir (örn., Escolano-Pérez vd., 2019; Gonzales vd., 2018; Marulis vd., 2021; Whitebread vd., 2009, 2010). Öğretmenler tarafından doldurulan BÖD 3-5'de erken çocukluk dönemindeki çocukların üstbilişsel beceriler gösterdiği sonucunu desteklemektedir. Tren Rayı Görevinden elde edilen sonuçlar incelendiği zaman erken çocukluk dönemindeki çocukların kolay olan (oval) şekilde zor olan (gözlük) şekilden daha fazla üstbilişsel beceriler sergilediğini ortaya koymuştur. Roebers ve Spiess'in (2017) belirttiği gibi bu fark, görev zorluğunun üstbilişsel performans üzerindeki etkisine bağlanabilir.

Çocukların üstbilişsel becerilerinin çocuğun cinsiyetine göre değişip değişmediği incelendiğinde ise cinsiyet ile üstbilişsel beceriler arasında bir ilişki olduğu keşfedilmiştir. Tren Rayı Görevinin kolay ve zor şekillerinden elde edilen sonuçların erkek çocukların lehine olduğu, bunun aksine BÖD 3-5'den elde edilen sonuçların ise kız çocuklarının lehine farklılık gösterdiği sonucuna ulaşılmıştır. Bu farklılığın

nedeninin erkek çocukların yapı ve inşa oyunlarına olan aşinalığının onların Tren Rayı Görevinde sergiledikleri üstbilişsel becerileri olumlu yönde etkilediği düşünülmektedir. Benzer şekilde, bazı araştırmalar erkeklerin inşaat malzemeleri ve blok yapımında kızlardan daha iyi olduğunu göstermektedir (Labarthe, 1997; Rubin, 1997; Tian vd., 2018). Tren Rayı Görevinin aksine, BÖD 3-5 sonuçları kız çocuklarının erkek çocuklardan daha fazla üstbilişsel beceriler sergilediğini belirtmiştir. Bu farklılığın sebebi öğretmenlerin, kızları sakin, erkekleri yaramaz olarak etiketleme eğilimi olabilir. Bunu destekler şekilde, Gazi (2018) tarafından yapılan bir çalışmada ilkokul öğretmenlerinin kızların doğal olarak sakin, düzenli ve düzenli olmalarının beklendiğine, erkeklerin ise aktif, yaramaz ve sorumsuz olmalarının beklendiğine inandığını ortaya konmuştur.

Ek olarak, çocukların üstbilişsel becerileri ile ailelerinin eğitim düzeyleri arasında da anlamlı bir ilişki bulunmuştur. Tüm üstbilişsel görevler (kolay şekil, zor şekil ve BÖD 3-5) için anlamlı bir ilişki bulunurken, kolay şekilde eğitim grupları arasında anlamlı bir fark bulunmamıştır. Bu durum, ebeveynlerinin eğitim durumu fark etmeksizin, çalışmanın örneklem grubunu oluşturan okul öncesi eğitim almakta olan çocukların MEB Okul Öncesi Eğitim Programı 2013 aracılığıyla zaten geometrik şekillere aşina olmalarıyla açıklanabilir. Ancak diğer çalışmalara paralel olarak (örn., Maric & Sakac, 2020) hem zor şekil hem de BÖD 3-5 puanları için eğitim grupları arasında önemli farklılıklar gözlenmiştir. Tren Rayı Görevinin zor şeklinden elde edilen sonuçlar ailesi yüksek lisans mezunu olan çocukların ailesi ilkokul mezunu olanların arasında anlamlı bir farklılık bulmuş ve ailesi yüksek lisans mezunu olan çocukların ailesi ilkokul mezunu olanlardan daha fazla üstbilişsel beceri sergilediğini ortaya koymuştur. Son olarak BÖD 3-5 ile ailelerin eğitim düzeyleri arasındaki ilişkiye bakıldığında ise ailesi lisans ve yüksek lisans mezunu olan çocukların üstbilişsel becerilerinin ailesi ilkokul, ortaokul, lise ve ön lisans mezunu olanlardan anlamlı olarak farklı olduğunu göstermiştir. Aynı zamanda sonuçlar ailesi yüksek lisans mezunu olan çocukların BÖD 3-5'de daha yüksek skorlar aldığını ortaya koymuştur. Bu sonuçların nedeni, eğitim düzeyi yüksek olan ailelerin çocuklarının bilişsel ve motivasyonel gelişimlerini kolaylaştıran kaynaklara ve fırsatlara daha fazla erişmeleri, çocuklarının erken çocukluk eğitimine daha fazla önem vermeleri, zamanlarını ve maddi kaynaklarını erken yaşlarda uygun bir eğitim ortamı oluşturmaya ayırmalarına bağlanabilir (Barone, 2006; Dumais, 2006).

Son olarak, çocukların üstbilişsel becerileri ile ailelerinin gelir düzeyleri arasında da anlamlı bir ilişki bulunmuştur. Ancak Tren Rayı Görevinin kolay ve zor şekilleri incelendiğinde ailelerin gelir düzeyi grupları arasında anlamlı bir farklılık bulunamamıştır. Aksine, BÖD 3-5 sonuçları ise yüksek gelir düzeyine sahip ailelerin çocuklarının üstbilişsel becerilerinin düşük ve orta gelirli ailelerin çocuklarından daha fazla üstbilişsel beceriler sergilediğini göstermiştir. Bu sonuçlarla benzer olarak, üstbilişin farklı bileşenlerini inceleyen araştırmalar sosyoekonomik durumla ilgili çelişkili sonuçlar bulmuştur (Maria & Sakic, 2020; Pappas vd., 2003). Ek olarak, veri toplama araçlarının doğasındaki farklılıklar da sonuçlardaki tutarsızlıklara katkıda bulunmuş olabilir.

Ailelerin Yılmazlıkları

Araştırmanın diğer bir amacı ise ailelerin yılmazlık düzeyleri ile yılmazlık düzeylerinin ebeveynin cinsiyeti, ebeveynin eğitim düzeyi ve ailenin geliri ile ilişkili olup olmadığını incelemektir.

Araştırma sonucunda ailelerin yüksek yılmazlık seviyelerine sahip oldukları ancak yılmazlıklarının farklı değişkenlerden etkilendiği bulunmuştur. Yılmazlığa etki eden faktörlerden biri ebeveynin cinsiyetidir. Sonuçlar kadın ebeveynlerin erkeklerden daha yüksek yılmazlık seviyelerine sahip olduğunu göstermiştir, bu sonuç Eilertsen vd. (2015) bulgularıyla paralel olsa da alanyazında bununla çelişen sonuçlar vardır (Cheatham & Fernando, 2021; Jones vd., 2013). Buna ek olarak, ailelerin yılmazlığını etkileyen diğer önemli bir bileşen ise ebeveynin eğitim düzeyidir. Elde edilen bulgular ebeveynin eğitim düzeyi arttıkça aile yılmazlığının da arttığını ortaya koymuştur. Yüksek lisans mezunu olan ebeveynler en yüksek aile yılmazlığını gösterirken ilkokul mezunu olan ebeveynlerde aile yılmazlık seviyesi en düşük olarak raporlanmıştır. Bu bulgu bazı araştırmalarla örtüşürken (Ha vd., 2008), ilişki bulamayanlarla (Kaner vd., 2011; Taşdemir, 2013) çelişmektedir. Bunlara ek olarak, ailenin gelir düzeyi de ailenin yılmazlığına pozitif yönde etki etmektedir. Diğer bir değişle, yüksek gelirli aileler daha yüksek aile yılmazlığını gösterirken düşük gelirli aileler daha düşük yılmazlık seviyesine sahiptir. Bu sonuç, mevcut literatürle uyumludur (Wisher vd., 2016), ve sebebi sosyoekonomik durumu daha yüksek olan ailelerin farklı kaynak ve fırsatları keşfedebilmeleri olabilir.

Okul Öncesi Öğretmenlerinin Yılmazlıkları

Araştırmanın diğer bir amacı ise okul öncesi öğretmenlerinin yılmazlık düzeyleri ile yılmazlık düzeylerinin öğretmenin eğitim düzeyi ve gelir düzeyi ile ilişkili olup olmadığını incelemektir.

Araştırma sonucunda okul öncesi öğretmenlerinin yüksek yılmazlık seviyelerine sahip oldukları ancak yılmazlıklarının öğretmenin eğitim düzeyi ve öğretmenin gelir düzeyinden etkilendiği bulunmuştur. Okul öncesi öğretmeninin eğitim düzeyi arttıkça yılmazlığı da artmaktadır. Yüksek lisans mezunu olan öğretmenler en yüksek yılmazlığa sahipken ön lisans mezunu olan öğretmenler yılmazlık seviyesi en düşük olarak raporlanmıştır. Bu durumun öğretmenin öz-yeterlilik algısıyla ve geniş iletişim ağıyla ilişkili olabileceği düşünülmektedir. Bu bulgu önceki çalışmalarla uyumlu olsa da (Akgün, 2021; Chu & Liu, 2022), bu sonuçla çelişen araştırmalar da vardır (Selçuklu, 2013; Yılmaz & Yalçın, 2020). Buna ek olarak, okul öncesi öğretmenlerinin gelir düzeyi yılmazlığına etki etmektedir. Yüksek gelirli öğretmenler orta gelirli öğretmenlerden daha yüksek yılmazlığa sahiptir. Bunu destekler şekilde son araştırmalar da öğretmenlik mesleğinin statüsünün, öğretmen maaşlarının düşük olması gibi faktörler nedeniyle düştüğünü göstermektedir (Demir & Almalı, 2020; Kıran vd., 2019).

Erken Çocukluk Dönemindeki Çocukların Üstbilişsel Becerileri ile Ailelerinin Yılmazlıkları Arasındaki İlişki

Araştırma sonuçları erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile ailelerinin yılmazlıkları arasında pozitif bir ilişki olduğunu ortaya koymuştur ve değerler Tablo 2'de sunulmuştur.

Diğer bir deyişle, yılmazlığı yüksek ailelerde büyüyen çocuklar daha fazla üstbilişsel beceri göstermektedir. Sonuçlar detaylı bir şekilde analiz edildiğinde aile yılmazlığının en çok BÖD 3-5 ile ilişkili olduğu keşfedilmiştir ve ilişkinin etkisi büyük olarak raporlanmıştır. Bu bulguların ev ortamının üstbilişle olan pozitif ilişkisi (Rani & Duhan, 2020), rol model olma, yılmaz ailelerin yarattıkları destekleyici öğrenme ortamları, aile üyelerinin açık iletişimi (Walsh, 1998) ve ailelerin çocuklarının gelişimiyle ilgili kendilerini bilgili ve yetkin hissetmeleriyle ilgili olabileceği düşünülmektedir.

Erken Çocukluk Dönemindeki Çocukların Üstbilişsel Becerileri ile Okul Öncesi Öğretmenlerinin Yılmazlıkları Arasındaki İlişki

Araştırma sonuçları erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile okul öncesi öğretmenlerinin yılmazlıkları arasında pozitif bir ilişki olduğunu ortaya koymuştur ve değerler Tablo 2'de sunulmuştur.

Sonuçlar yılmazlığı yüksek öğretmenleri olan çocukların daha fazla üstbilişsel beceri gösterdiğini keşfetmiştir. Sonuçlar detaylı bir şekilde analiz edildiğinde aile yılmazlığına benzer şekilde, öğretmenlerin yılmazlığının da en çok BÖD 3-5 ile ilişkili olduğu bulunmuştur ve ilişkinin etkisi büyük olarak raporlanmıştır. Bu bulgular, üstbilişsel becerileri öğretmek ve karmaşık olsa da öğretmenlerin kendilerine olan güvenleri, olumlu öğretmen-öğrenci ilişkisine sahip destekleyici bir sınıf ortamı (Liew vd., 2019) ve rol model olma (Bashir vd., 2014) ile ilişkilendirilebilir.

Tablo 2 *Erken çocukluk dönemindeki çocukların üstbilişsel becerileri ile ailelerinin ve okul öncesi öğretmenlerinin yılmazlıkları arasındaki ilişkisel analizler*

		Tren Rayı Görevi Kolay Şekil	Tren Rayı Görevi Zor Şekil	BÖD 3-5
Aile Yılmazlığı		.21**	.21**	.47**
Öğretmen	Yılmazlığı	.22**	.18**	.52**

Yol Analizlerine İlişkin Bulgular

Çalışmanın değişkenleri arasındaki dolaylı ve doğrudan ilişkileri inceleyebilmek adına öncelikle alanyazına ve teorik çerçeveye dayandırılarak model önerisi ortaya konulmuş ve analiz edilmiştir. Sonuçlar, başlangıç modelinin araştırmanın verileriyle iyi bir uyum sergilemediğini göstermiştir (χ^2 = 106.86, df = 16, χ^2/df = 6.68, CFI = .89, SRMR = .08, TLI = .62, GFI = .92, AGFI = .68). Bu nedenle, model daha ayrıntılı bir şekilde incelenmiş, istatistiksel olarak anlamlı olmayan ilişkiler belirlenmiş ve modelden çıkarılmıştır. Daha sonrasında nihai model oluşturulmuş ve test edilmiştir. Başlangıç modeli ile karşılaştırıldığında bu modelin daha iyi bir uyum sağladığı belirlenmiştir (χ^2 = 43.18, df = 13, χ^2/df = 3.32, CFI = .95, SRMR = .06, TLI = .86,

GFI = .96, AGFI = .85). Nihai modelde yer alan doğrudan (Tablo 3) ve dolaylı ilişkiler (Tablo 4) aşağıda yer almaktadır.

Değişkenler arasındaki Doğrudan İlişkiler

Yol analizinden elde edilen bulgular Tablo 3'te paylaşılmıştır. Sonuçlar, mevcut çalışmanın betimsel analizlerinden sadece birkaç farklı noktayla benzer sonuçlara varmıştır. Benzer olarak, ebeveynin cinsiyetinin ve ailelerin gelirinin ailelerin yılmazlık düzeylerinin pozitif ve anlamlı yordayıcıları olduğunu göstermektedir. Ayrıca, kadın ebeveynlerin erkeklerden daha yüksek yılmazlığa sahip olduğu sonucuna ulaşılmıştır. Üstelik, aile geliri de BÖD 3-5'i pozitif ve anlamlı şekilde yordamıştır; bu da daha yüksek gelirli ailelerin çocuklarının BÖD 3-5'te daha yüksek puanlar aldığını göstermektedir. Bunlara ek olarak, çocuk cinsiyeti, tren rayı görevi kolay şekil, zor şekil ve BÖD 3-5'i anlamlı şekilde yordamıştır. Erkek çocuklar kolay ve zor şekillerde üstbilişsel becerilerde daha yüksek puanlara sahipken, kız çocuklar BÖD 3-5'te daha yüksek puanlara sahip olarak bulunmuştur. Ayrıca, öğretmenlerin eğitim durumunun, öğretmen yılmazlığı ile en anlamlı ve pozitif ilişkiye sahip olduğu ortaya konulmuştur. Ek olarak, aile yılmazlığı tren rayı görevi kolay şekil, zor şekil ve BÖD 3-5'i anlamlı ve pozitif olarak yordamıştır. Son olarak, öğretmen yılmazlığının tren rayı görevi kolay şekil, zor şekil ve BÖD 3-5 ile anlamlı ve pozitif yönde ilişkili olduğunu göstermiştir.

Betimsel analizlerden farklı olarak, yol analizi sonuçları ebeveynlerin eğitim durumunun aile yılmazlığı ile anlamlı bir ilişkisinin olmadığını göstermiştir. Bu fark, eğitim durumunun aile dayanıklılığının zayıf bir yordayıcısı olmasından kaynaklanıyor olabilir. Başka bir nedeni ise, doğrudan etki yerine dolaylı bir etki olabilir. Yüksek eğitim düzeyine sahip ebeveynlerin çocuklarına karşı sıcaklık, bilişsel uyarım ve bakım konusunda daha fazla yeterlilik sergilediğini bulmuşlardır. Bu nedenle aileler, öz-yeterlikleriyle desteklenen olumlu deneyimler sayesinde daha güçlü bağlar kurabilirler. Bu bulgu, Cihan ve Çalık-Var'ın (2022) ebeveyn öz yeterliliğinin aile yılmazlığı üzerinde dolaylı bir etkiye sahip olduğunu gösteren çalışmasıyla uyumludur.

Ayrıca, yol analizi, öğretmenlerin gelirinin öğretmen yılmazlığı ile anlamlı bir ilişkisi olmadığını göstermiştir. Bunun nedeni, Türkiye'nin şu anda yaşadığı ekonomik

zorluklarla ilgili olabilir. Dünya Bankası (2023), Türkiye'nin enflasyon oranında 2021'de 19,6'dan 2022'de 72,3'e önemli bir artış bildirmiştir. Bu durum 2022 yılında öğretmenlerin maaşlarını etkilemiştir. Türkiye'de devlet memurlarının maaşlarına Temmuz 2022'de %30 zam yapılmıştır (TBMM, 2023). Veri toplama sürecinin 2022 yılında altı ay sürmüş olması, verileri sonradan toplanan öğretmenlerin gelirlerinin daha yüksek olması nedeniyle anlamlı bir ilişki göstermemiş olabileceğini düşündürmektedir.

Değişkenler arasındaki Dolaylı İlişkiler ve Arabuluculuk Rolleri

Tablo 4, modeldeki dolaylı ilişkilere ilişkin yol analizi sonuçlarını sunmaktadır. Bu modeldeki aracılar aile yılmazlığı ve öğretmen yılmazlığıdır.

Tablo 3 *Doğrudan etkilere yönelik yol analizi sonuçları*

Bağımsız değişken	Bağımlı değişken	SE	β	Alt değer	Üst değer
Ebeveyn cinsiyeti	Aile yılmazlığı	.07	.19**	.07	.33
Aile gelir düzeyi	Aile yılmazlığı	.06	.30**	.19	.42
	BÖD 3-5	.06	.19**	.06	.28
Çocuğun cinsiyeti	Tren rayı görevi kolay şekil	.06	-.22**	-.36	-.11
	Tren rayı görevi zor şekil	.07	-.23**	-.35	-.08
	BÖD 3-5	.06	.16**	.04	.26
Öğretmenin eğitim durumu	Öğretmen yılmazlığı	.06	.56**	.44	.66
Aile yılmazlığı	Tren rayı görevi kolay şekil	.06	.15*	.02	.25
	Tren rayı görevi zor şekil	.07	.16*	.04	.31
	BÖD 3-5	.06	.28**	.16	.41

Tablo 3 (devamı)

Öğretmen yılmazlığı	Tren rayı görevi kolay şekil	.07	.21**	.06	.35
	Tren rayı görevi zor şekil	.08	.17*	.02	.31
	BÖD 3-5	.06	.43**	.30	.55

Ebeveyn cinsiyeti, tren rayı görevi kolay şekil, zor şekil ve BÖD 3-5'i önemli ölçüde yordamıştır. Bu sonuçlar, ebeveyn cinsiyeti ile üstbilişsel beceriler arasındaki ilişkilere tamamen aile yılmazlığının arabuluculuk ettiğini göstermiştir. Özellikle sonuçlar, kadın ebeveynlerin çocukların üstbilişsel becerileri üzerinde erkek ebeveynlerden daha olumlu bir etkiye sahip olduğunu ve bunun aile yılmazlığının aracılık ettiğini ortaya koymuştur. Bu bulgunun olası açıklaması, annelerin çocukları için birincil bakıcı olarak görüldüğü (Eldeniz-Çetin & Sönmez, 2018) ve daha fazla zaman geçirdiği (Cha & Song, 2017; Li & Guo, 2023) geleneksel ebeveynlik rolleri ve beklentileri olabilir.

Ayrıca, benzer şekilde, bu bağımlı değişkenler de aile geliri tarafından anlamlı ve pozitif olarak yordanmıştır. Aile geliri ile tren rayı görevi kolay şekil, zor şekil ve BÖD 3-5 arasındaki ilişkiye kısmen aile yılmazlığı aracılık etmiştir. Bunun nedeni, sosyoekonomik düzeyi yüksek olan ailelerin daha fazla deneyim, kaynak ve sosyal etkileşimi teşvik etmesi (Yunus & Dahlan, 2013), çocuklarının gelişimsel risklerini azaltması (Rochette & Bernier, 2014) ve aile yılmazlığını desteklemesi ile ilgili olabilir.

Ek olarak, öğretmenin eğitim durumu da bağımlı değişkenlerle anlamlı bir şekilde ilişkilidir. Öğretmenin eğitim durumu, tren rayı görevi kolay şekil, zor şekil ve BÖD 3-5'i anlamlı ve pozitif olarak yordamıştır. Bu sonuçlar, öğretmenin eğitim durumu ile çocukların üstbilişsel becerileri arasındaki ilişkilerin tamamen öğretmen yılmazlığının arabuluculuk ettiğini göstermiştir. Daha yüksek eğitim düzeyine sahip öğretmenler, çocuklar ve eğitimle ilgili artan yeterlilik ve bilgi duyguları nedeniyle daha fazla öz-yeterliğe sahip olma eğilimindedir (Orakcı vd., 2023; Shaukat vd., 2019; Yılmaz & Çokluk-Bökeoğlu, 2008). Bu sebeple, öğretmenlerin eğitim durumunun, öğrencileri

için üstbilişsel öğrenme deneyimlerini bilinçli veya bilinçsiz olarak teşvik eden psikolojik dayanıklılıklarını desteklediği düşünülmektedir.

Tablo 4 *Dolaylı etkilere ilişkin sonuçlar*

Bağımsız değişken	Bağımlı değişken	Dolaylı etki
Ebeveyn cinsiyeti	Tren rayı görevi kolay şekil	.03*
	Tren rayı görevi zor şekil	.03**
	BÖD 3-5	.05**
Aile gelir düzeyi	Tren rayı görevi kolay şekil	.05**
	Tren rayı görevi zor şekil	.05**
	BÖD 3-5	.08**
Öğretmenin eğitim durumu	Tren rayı görevi kolay şekil	.12**
	Tren rayı görevi zor şekil	.10*
	BÖD 3-5	.24**

Nihai modelden elde edilen bulgular, bağımsız değişkenlerin aile yılmazlığındaki varyansın %13'ünü açıklarken, öğretmen yılmazlığının %31'ini açıkladığını göstermiştir. Bütün bağımsız ve aracı değişkenler, tren rayı görevinin kolay şeklindeki %7 varyansı, zor şeklindeki %9 varyansı ve önemli bir şekilde BÖD 3-5'teki %39 varyansı açıklamaktadır.

P. THESIS PERMISSION FORM / TEZ İZİN FORMU

ENSTİTÜ / INSTITUTE

Fen Bilimleri Enstitüsü / Graduate School of Natural and Applied Sciences ☐

Sosyal Bilimler Enstitüsü / Graduate School of Social Sciences ☒

Uygulamalı Matematik Enstitüsü / Graduate School of Applied Mathematics ☐

Enformatik Enstitüsü / Graduate School of Informatics ☐

Deniz Bilimleri Enstitüsü / Graduate School of Marine Sciences ☐

YAZARIN / AUTHOR

Soyadı / Surname : Yapar
Adı / Name : Nazlı Berfin
Bölümü / Department : Temel Eğitim, Okul Öncesi Eğitimi / Early Childhood Education

TEZİN ADI / TITLE OF THE THESIS (**İngilizce** / English): THE RELATIONSHIP BETWEEN PRESCHOOL CHILDREN'S METACOGNITIVE SKILLS AND RESILIENCE OF THEIR FAMILIES AND TEACHERS

TEZİN TÜRÜ / DEGREE: **Yüksek Lisans** / Master ☒ **Doktora** / PhD ☐

1. **Tezin tamamı dünya çapında erişime açılacaktır. /** Release the entire work immediately for access worldwide. ☒
2. **Tez iki yıl süreyle erişime kapalı olacaktır.** / Secure the entire work for patent and/or proprietary purposes for a period of **two years. *** ☐
3. **Tez altı ay süreyle erişime kapalı olacaktır.** / Secure the entire work for period of **six months**. ***** ☐

***** *Enstitü Yönetim Kurulu kararının basılı kopyası tezle birlikte kütüphaneye teslim edilecektir. / A copy of the decision of the Institute Administrative Committee will be delivered to the library together with the printed thesis.*

Yazarın imzası / Signature ..... **Tarih** / Date .....
(Kütüphaneye teslim ettiğiniz tarih. Elle doldurulacaktır.)
(Library submission date. Please fill out by hand.)

Tezin son sayfasıdır. / This is the last page of the thesis/dissertation.