

A MIXED METHODS STUDY OF
TEACHER-CHILD INTERACTION QUALITY
AND TEACHER BELIEFS IN EARLY CHILDHOOD EDUCATION

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ABSTRACT

A MIXED METHODS STUDY OF TEACHER-CHILD INTERACTION QUALITY AND TEACHER BELIEFS IN EARLY CHILDHOOD EDUCATION

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This study examined teacher-child interaction quality in preschool classrooms, some aspects of early childhood teachers' beliefs (i.e., beliefs about developmentally appropriate practice, beliefs about developmentally inappropriate practice, teacher self-efficacy, and general teaching efficacy), and the interplay between them through a mixed methods research design. Data were collected through teacher survey and interviews, and structured and unstructured classroom observations. A sample of 47 teachers selected via cluster random sampling and two samples each of which involved four teachers selected through extreme case sampling addressed the main research questions in the study. Descriptive statistics and correlational, canonical, path, and content analyses were utilized in data analyses.

The quantitative results unfolded that teacher-child interaction quality in preschools in public pre-primary schools of Ankara, Turkey was not high especially in the domains of instructional and emotional support. The qualitative findings consistently revealed

several instances of ineffective teaching characterized with unproductivity, lack of enriching activities for children, yelling, and the use of feedback extensively for praising children. Teachers attributed ineffective classroom practices to parents' view on early childhood education, teacher qualifications, and work conditions in the study. As regards to teacher beliefs, teachers reported a high sense of self-efficacy for teaching and general teaching efficacy and espoused developmentally appropriate practice more strongly than developmentally inappropriate practice. Although some pieces of quantitative and qualitative data revealed that these beliefs influenced educational practice in preschool classrooms, it was overall concluded that teacher beliefs were not strongly related to the observed classroom quality in early childhood education.

Keywords: Classroom Quality, Teacher-Child Interaction Quality, Teacher Beliefs, Teacher Efficacy, Early Childhood Education

ÖZ

OKUL ÖNCESİ EĞİTİMDE ÖĞRETMEN-ÇOCUK ETKİLEŞİMİNİN NİTELİĞİ VE ÖĞRETMEN İNANÇLARI ÜZERİNE BİR KARMA YÖNTEM ARAŞTIRMASI

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Bu çalışmada, okul öncesi eğitim sınıflarındaki öğretmen-çocuk etkileşiminin niteliği, okul öncesi öğretmenlerinin bazı inançları (gelişimsel açıdan uygun uygulamalara yönelik inançlar, gelişimsel açıdan uygun olmayan uygulamalara yönelik inançlar, öğretmen özyeterlik algısı ve genel öğretmen yeterlik algısı) ve bu iki yapı arasındaki ilişki karma yöntem araştırma deseni ile incelenmiştir. Verilerin toplanmasında öğretmen anketi ve görüşmesi ile yapılandırılmış ve yapılandırılmamış sınıf gözlemi yöntemleri kullanılmıştır. Küme örnekleme yöntemi ile seçilmiş 47 öğretmenden oluşan örneklem ve aykırı durum örnekleme ile seçilmiş her biri dört öğretmenden oluşan iki örneklem ile araştırma sorularına yanıt aranmıştır. Verilerin analizinde betimsel istatistikler ile korelasyon, kanonik, yol ve içerik analizleri kullanılmıştır.

Nicel araştırma bulguları, özellikle çocuklara sağlanan öğretim desteği ve duygusal destek boyutlarında öğretmen-çocuk etkileşiminin niteliğinin Ankara'daki bağımsız devlet anaokullarındaki okul öncesi eğitim sınıflarında yüksek olmadığını ortaya koymuştur. Nitel araştırma sonuçları sınıf içerisinde verimsizlik, çocuklar için zenginleştirici

nitelikteki etkinliklerin yoksunluđu, bađırma ve çocuklara çođunlukla övme amaçlı geri bildirimde bulunma gibi bazı etkili olmayan öđretmenlik uygulamalarına dikkat çekmiştir. Çalışmaya katılan öđretmenler sınıf uygulamalarındaki başarısızlıkları ailelerin okul öncesi eğitime yönelik algılarına, öđretmen yeterliklerine ve çalışma koşullarına bağlamışlardır. Öđretmen inançlarına ilişkin olarak, okul öncesi öđretmenlerinin öđretmenliğe yönelik özyeterlik ve genel öđretmen yeterlik algılarının genel olarak yüksek olduđu ve gelişimsel açıdan uygun uygulamaları gelişimsel açıdan uygun olmayan uygulamalara kıyasla daha güçlü destekledikleri ortaya çıkmıştır. Bazı nicel ve nitel bulgular bu inançların okul öncesi öđretmenlerinin eğitsel uygulamalarını etkilediđini göstermiş olsa da, genel olarak bu çalışmada öđretmen inançları ile gözlemlenen sınıf kalitesi arasında güçlü bir ilişki olmadığı sonucuna varılmıştır.

Anahtar Kelimeler: Sınıf Niteliđi, Öđretmen-Çocuk Etkileşiminin Niteliđi, Öđretmen İnançları, Öđretmen Yeterliđi, Okul Öncesi Eğitim

To mom and dad, with L♥VE

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CHAPTER 1

INTRODUCTION

This chapter presents a background to the study and introduces the purpose, significance, and definitions of the key constructs of this research.

1.1. Background to the Study

The wealth and success of a nation are not measured exclusively by its financial or even by its natural resources. Perhaps most important is its response to human capital, the way in which each country handles its human resources. Of all the forms of currency, there is none more important than human resources, and there is no wiser or more enduring investment than in the care and education of young children (Jalongo et al., 2004, p. 147).

Early childhood education is indispensable for the good of children and society, and there are well-grounded reasons for it. First, brain development research revealed that having positive and stimulating experiences in early childhood are considerably critical for the growth of synapses and the formation of strong connections among them (Newberger, 1997). Second, a vast bulk of research provided strong empirical evidence regarding the gains of children who attended early childhood education programs (e.g., Camilli, Vargas, Ryan, & Barnett, 2010; Campbell, Ramey, Pungello, Erkan & Kırca, 2010; Sparling, & Miller-Johnson, 2002; Gilliam & Zigler, 2001; Gormley, Gayer, Phillips, & Dawson, 2005; Kılıç, 2008; Lazar et al., 1982; Loeb, Fuller, Kagan, & Carrol, 2004; Magnuson, Ruhm, & Waldfogel, 2007; Polat Unutkan, 2007). The gains can be so far-reaching that preschool programs may pave the way for criminal, labor market, and health behavior outcomes in adulthood through changing children's cognitive and personality skills (Heckman, Pinto, & Savelyev, 2013). Third and the last, early childhood education is not only for the well-being of children but also contributes to the development of countries. Preschool

programs are considered a potential means of compensating for social inequalities as early interventions can reduce gaps among children from different social backgrounds (Burger, 2010). As a contribution to the economic growth of the countries, early childhood education services, moreover, facilitate women's participation in the labor force (Organisation for Economic Co-operation and Development [OECD], 2014). Heckman (2000), the Nobel laureate in economics, asserts that the returns are much greater when investments are for young children because early learning leads to later learning, which in turn brings about improved human performance. Especially, the interventions in early childhood period equip children with motivation and success-oriented attitudes, which in turn provides teachers with better-qualified students at later stages of schooling and increases the productivity and quality of workplace and society in the long run (Heckman & Masterov, 2007).

The arguments above have been significant sources of reference to gain public's support for early childhood education. As a consequence of the recognized value of early education, many countries have devoted intensive efforts for expanding early childhood care and education services recently (OECD, 2014). Specifically, on average, in OECD countries, the enrolment rate of 3-year-olds increased from 52% to 72% and that of 4-year-olds rose from 69% to 85 % between 2005 and 2013, while the enrolment rate reached to 95% for five-year-old children by 2013 (OECD, 2014). The increase in the number of children who have access to early childhood care and education services is a remarkable development. However, the global interest in expanding access to early childhood education services should be coupled with the efforts for improving the quality of the programs (Britto, Yoshikawa, & Boller, 2011). For, the benefits of early childhood education for children, parents, and society are contingent on the quality of the services offered to young children (Bennett & Tayler, 2006). While children at greater risk are more likely to benefit from high quality child care in some domains, Peisner-Feinberg and Burchinal (1997) underlined that high quality education is good for all children regardless of their family background.

Above all, having access to education that makes a contribution to the full development of human personality is declared as a universal human right by the United Nations (1948). This right is violated in low quality centers where children are deprived of enriching learning activities and instead spent the largest proportion of their time with gross motor activities and considerably less time with creative language arts, didactic activities, and manipulatives (Tonyan & Howes, 2003). Moreover, the positive association between home environment quality and children's outcomes weaken when children receive a low quality preschool education (Pinto, Pessanha, & Aguiar, 2013). On the other side, educational quality is not only important for the academic development of children but also for their well-being. Vermeer et al. (2010) indicated that children produced an increased level of cortisol in day care centers with below median level of quality, while there was a decline in the level of cortisol they produced in above median quality centers. That is, low quality child care centers are more likely to arouse stressful situations for children, which can hinder their healthy development.

We should no longer be blind to that there are better outcomes for children when the quality is higher in early childhood education classrooms (Burchinal, Vandergrift, Pianta, & Mashburn, 2010). In a series of comprehensive studies that were conducted by the National Institute of Child Health and Human Development Early Child Care Research Network in the USA (NICHD 2001, 2002, 2004, 2005), child care quality, in addition to the quality of parenting context, significantly predicted children's developmental outcomes. In their review study, Love, Schochet, and Meckstroth (1996) also highlighted that the research over the past 20 years indicated clear positive associations between a range of quality measures and various dimensions of children's development and well-being. Keys et al. (2013) in their meta-analytic study likewise concluded that the quality of preschools was related to children's gains in language and mathematics skills. Effective Pre-school and Primary Education Project, a large-scale longitudinal study that was conducted in Britain with more than 3000 children from 141 preschool centers, demonstrated that the quality of the preschool programs that children attended at the age of four predicted their cognitive and behavioral outcomes at the age of eleven after

controlling for some key child and family factors (Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2011). Mashburn (2008) also noted that children in high quality social environments acquired better academic and literacy skills than children in low or medium quality social environments regardless of their social or economic characteristics. Consistently, Peisner-Feinberg et al. (2001) pointed to the effects of high quality preschool education over a 5-year period on a range of child development dimensions including receptive language ability, math ability, cognitive and attention skills, problem behaviors, and sociability, after controlling for some child and family characteristics.

Apparently, children are more likely to bloom in high quality early childhood education centers; however, what is high quality early childhood education? Although there are many ways to define quality in education, one aspect admittedly warrants attention is teacher effectiveness. Rutter and Maughan (2002) in the study where they reviewed the salient findings of school effectiveness research carried out between 1979 and 2002 figured out that one path to educational improvement is to foster the pedagogic qualities of teachers. Darling-Hammond (2000) also demonstrated that student achievement is closely tied to what teachers know and can do. As an emphasis on the role of teachers in educational effectiveness, Hanushek (2011), moreover, argued that eliminating low performing teachers and financially rewarding high performing practitioners and assigning good teachers to larger classrooms could make a remarkable difference in educational outcomes.

That teachers do make a significant difference in student outcomes have elicited intense efforts in educational research to identify the factors that make them effective. This concern is at the heart of the present study as well. Campbell, Kyriakides, Muijs, and Robinson (2003) noted that teacher effectiveness research over 70 years had been characterized by the studies that investigated how well teachers' psychological characteristics, teaching styles, behaviors, knowledge, and beliefs were related to students' learning. Among these variables, the present study focuses on the interplay between teacher beliefs and teacher effectiveness in early childhood education in the

public schooling context of Turkey. Pajares (1992) stated that *“Attention to the beliefs of teachers and teacher candidates can inform educational practice in ways that prevailing research agendas have not and cannot”* (p. 329). Correspondingly, the scholars have intensely examined the nature of teacher beliefs, the sources that influence teacher beliefs, and also the influence of teacher beliefs on teacher behaviors and educational outcomes thus far. The present study particularly aims to expand our knowledge on the interplay between teacher beliefs and practices, the strand of research which has been characterized by inconsistent findings.

1.2. Purpose of the Study

The present study is considered a strand of research on teacher effectiveness. The studies on this line of research have attempted to explain why some teachers contribute to student achievement more than some other teachers. Correspondingly, the present study regarded early childhood teachers as an influence on children’s learning and development and sought to identify some aspects that make them effective in their interaction with children in the classrooms. Bronfenbrenner (1993), in his ecological model, highlighted that the forms of interaction in the immediate environment of the persons (i.e., proximal process) have the most powerful effect on human development, and so called the primary engines of development. In this respect, this study was grounded on the assumption that the quality of teacher-child interactions would predict the outcomes for children.

This study adopted a presage-process model for the purpose of studying teacher effectiveness in early childhood education. As defined by Dunkin and Biddle (1974), presage variables include such teacher characteristics that may influence the process of teaching (e.g., teacher formative experiences, teacher training experiences, and teacher properties), whereas process variables consist of the actual activities of teachers. The presage variables addressed in this study included teacher beliefs (i.e., teacher self-efficacy, general teaching efficacy, beliefs about developmentally appropriate practice,

beliefs about developmentally inappropriate practice), and the process variable was the quality of teacher-child interaction observed in preschool classrooms. The study was primarily interested in the interplay between these presage variables and the process variable, and attempted to answer the following research questions via a mixed methods design:

1. What is the level of teacher-child interaction quality in observed classrooms?
2. What is the level of early childhood teachers' self-efficacy and general teaching efficacy in observed classrooms?
3. To what extent do early childhood teachers espouse beliefs about developmentally appropriate and inappropriate practices in observed classrooms?
4. Is there a significant correlation between the level of teacher-child interaction quality and teacher beliefs in observed classrooms?
5. Do teacher beliefs exert any direct or indirect influence on the level of teacher-child interaction quality in observed classrooms?
6. What are the core beliefs of teachers in classrooms with high and low quality about high quality early childhood education? Is there a convergence and difference between more and less effective early childhood teachers regarding their beliefs about good early childhood education?
7. What characterizes the classroom practices of early childhood teachers with higher efficacy and more developmentally appropriate beliefs and with lower efficacy and less developmentally appropriate beliefs? Is there a convergence and difference between teachers with more and less desirable beliefs regarding their classroom practices?

1.3. Significance of the Study

The 'age of quality' is now well and truly upon us, and not just in relation to early childhood institutions, but every conceivable type of product and service. No day goes by without the word appearing in countless places attached to countless activities and institutions, goods and services. It is what everyone wants to offer, and everyone wants to have (Dahlberg, Moss, & Pence, 1999, p. 11).

According to Clarke-Stewart (1988), the field of early childhood has evolved around three main discussions historically. In the 1960s, it was widely acknowledged that early childhood is a critical period for the education of children and a powerful tool to help children who are experiencing depriving conditions at home. In the 1970s, the joint attention shifted to finding effective but at the same time cheap ways to fulfill the promises of early education. By the 1980s, the field attempted but failed to determine the best approach to early childhood education amid debates on duration, intensity, comprehensiveness, focus, structure, and curricular emphasis of the programs. As the practice was not uniform, the quality and effect of this diversity in educational practice was intensely questioned in the 1980s. Since the first half of the nineteenth century, there has been an endless search for finding the best methods to care and educate young children (Tietze, Cryer, Bairrão, Palacios, & Wetzell, 1996).

This search for quality, the core of the present study, is imperative because, in addition to children's family characteristics, child care quality makes remarkable contributions to child development although this influence may be on different domains of development and be of varying magnitude (Kontos, 1991). If home environment constitutes the primary environment for children, classroom environment makes up the second most critical environment for them because classroom experiences hold a great potential to determine children's developmental trajectory longitudinally and even moderate the significant effects of home environment on them (Peisner-Feinberg et al., 2001). Considering the decisive role of teachers in classrooms, better teachers are, therefore, a must but nice to have for better preschools and better student achievement (Barnett,

2003). The present study overall seeks to expand our understanding of better early childhood teachers in the school context of Turkey.

Although there is a worldwide need for quality improvement in early childhood education (Wood, 2004), defining the standards for quality is a real challenge for the field mainly because there are multiple paths to educational quality based on various assumptions and methods (Moss, Dahlberg, & Pence, 2000). Amid continuing debates, understanding what constitutes teacher effectiveness is perceived critical for making right decisions about teacher preparation, recruitment, compensation, and also in-service professional development and evaluation of teachers (Stronge, Ward, & Grant, 2011). As Medley (1977) noticed, we cannot not delay making decisions in education because we do not have a perfect knowledge of teacher effectiveness. We need to rely on research to improve our knowledge on this domain. Today, we have a substantial body of available research on quality in early childhood education; however, the field is still starving for studies because of highly sophisticated nature of quality (Buell & Cassidy, 2001). Of note is that the studies on quality of early childhood education have been mostly conducted in the USA (Kamerman, 2005). The research outside American context can help the field identify some factors that determine preschool classroom quality universally. The present study is considered making a valuable contribution to the existing literature by the study of quality in Turkey, a country which has a centralized education system.

According to Correnti and Martínez (2010), the studies of teaching like the present study have the greatest utility because teachers in these studies are both the object of study and the target of change. As a result, they argued that the results of such studies not only provide implications for science but policy and can determine social goals and discussions about education. However, in Turkey, where there are 1209106 children who are attending early childhood education programs in 27793 schools by the 2015-2016 academic year (Ministry of National Education Strategy Development Presidency, 2016), there is a dearth of empirical studies on what children actually experience in these programs. As far as is known, only three studies (i.e., Baştürk & Işıkoğlu, 2008; Ertürk,

2013; Güçhan Özgül, 2011) have assessed the global quality in the classrooms, while two studies (i.e., Erbay & Ömeroğlu, 2009; Karaküçük, 2008) were confined to the quality of physical environment in classrooms. The studies that addressed early childhood teachers' classroom practices in Turkey were mostly based on teacher reports rather than classroom observation (e.g., Cobanoğlu & Capa-Aydin, 2015; Dilek, 2013; Düşek, 2008; Erden, 2010; Uzun, 2007; Kandır, Özbay, & İnal, 2009), while observation is a promising data collection tool to conduct scientific investigations for educational improvement despite some measurements challenges about psychometrics, efficiency, and costs (Pianta & Hamre, 2009). The present study expects to fill this gap to an extent and provide implications regarding the improvement of classroom practices in pre-primary classrooms particularly in the context of Turkey based on classroom observations.

Moreover, this study with its focus on teacher-child interaction addresses process quality rather than structural quality. That is, it is concerned about the actual experiences of children in classrooms rather than some structural variables such as teacher training, experience, wage, and class size. The reliance upon the structural variables may be easy to understand for parents as consumers and efficient for governments to administer, but may not be fair and objective for child care programs (Riley, Roach, Adams, & Edie, 2005). Given that the influence of process variables surpass the impact of structural variables on classroom quality, Dennis and O'Connor (2013) advocated that educational research and policy shift away attention from structural aspects to process aspects of quality in early childhood education. Howes et al. (2008) consistently contended that the quality of teacher-child interactions are tied to children's gains more strongly than the quality of structural features and should be the focus of efforts in quality improvement.

Last but not least, this study has an emphasis on the study of quality in relation to teacher beliefs. According to Feeney and Chun (1985), in addition to teachers' gender, education, experience, personal characteristics, and behaviors, and situational factors, teachers' values and beliefs constitute a significant part of who is an effective teacher for young children. As teachers exercise judgment, make decisions, and define appropriateness

based on their personal interpretation of experience, it is essential to study how they make sense of the world (Clark & Yinger, 1977). What is more, this line of research demonstrated that teachers' thinking may be inappropriate, invalid, illogical, or incongruent with effective practice (Floden & Klinzing, 1990). Gage and Needeles (1989) likewise proposed that teachers' thought process no longer be ignored in studies of teacher effectiveness; however, the review of literature in this study indicated that the scholars failed to fulfill this proposal to an extent. According to Smith (1992), less is known particularly about the beliefs of early childhood teachers despite their influence on educational practices. As Pajares (1992) argued, little will be accomplished if educational research fails to provide insights into the relationship between teacher beliefs and practices. The study of teacher beliefs can remarkably improve our understanding about how good teachers are made (Kagan, 1992).

1.4. Definition of the Terms

Below are the definitions of the variables at the heart of the present study:

Quality in this study defined from a top-down perspective (Katz, 1993a) in which an expert judges if classrooms meet pre-determined criteria or not. This is a modernist approach to the study of quality, which deems the presence of some universal objective quality standards (Logan & Sumsion, 2010).

Teacher-child interaction quality pertains to the observed effectiveness of teacher-child interactions in pre-k classrooms in the domains of emotional support, classroom organization, and instructional support as measured by Classroom Assessment Scoring System (CLASS) (Pianta, La Paro, & Hamre, 2008). Specifically, in the framework of CLASS, teacher-child interaction is considered high quality when classrooms are supporting children's social and emotional functioning and cognitive and language development, and well-managed regarding student behavior, time, and activities.

Belief refers to “an individual’s judgment of the truth or falsity of a proposition” according to Pajares (1992, p. 316). In this respect, they are subjective and evaluative unlike knowledge based on objective universal facts (Pajares, 1992).

Teacher beliefs about developmentally appropriate and inappropriate practices refer to early childhood teachers’ beliefs about the approach developed by National Association for the Education of Young Children (NAEYC) about effective early education. In this approach, classroom practices in early childhood education are judged effective when they are appropriate for children’ age and developmental status, and appropriate individually, and culturally (Copple, Bredekamp, Koralek, & Charner, 2013).

Teacher efficacy refers to early childhood teachers’ self-efficacy (personal teaching efficacy) and general teaching efficacy in the present study. *Teacher self-efficacy* pertains to early childhood teachers’ perception about their capabilities to carry out specific teaching tasks (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), and this is also known as personal teaching efficacy (Gibson & Dembo, 1984). *General teaching efficacy* as defined by Gibson and Dembo (1984) is the belief of a teacher about any teacher’s ability to influence student learning regardless of their home environment.

CHAPTER 2

LITERATURE REVIEW

This chapter presents an overview of the literature on the following constructs: educational quality, teacher-child interaction, and teacher beliefs.

2.1. Definition of Educational Quality

The notion of quality has roots traced back to the times of Greek philosophers and has been equated in organizations with “excellence,” “value,” “conformance to specifications,” and “meeting or exceeding customers’ expectations” (Reeves & Bednar, 1994). Some dictionary definitions of quality include “the degree of excellence of something” (Oxford Dictionaries), and “how good or bad something” (Merriam-Webster). In the context of educational organizations, according to Cheong Cheng and Ming Tam (1997), quality pertains to the following seven issues: (a) achievement of goals and conformance to given specifications (e.g., students’ achievement, attendance rate, professional qualifications of staff), (b) achievement of resources and input (e.g., qualifications of staff, class size ratio, financial support), (c) smooth and healthy internal processes (e.g., leadership, social interactions, teaching methods), (d) satisfaction of stakeholders’ expectations (e.g., students, teachers, management board, alumni), (e) achievement of a legitimate position or reputation (e.g., accountability, parental choice), (f) absence of problems and troubles, (g) achievement of continuous improvement and development of members, practices, and outcomes.

Educational reforms we underwent for quality assurance also manifest what has been valued in education so far. Cheong Cheng (2003) recognized three waves of reform, each of which is considered equally important for educational improvement. He informed that

in the first wave since the 1970s, the reform movements have centered on internal effectiveness that addresses the improvement of methods of teaching and learning in educational organizations for the purpose of fostering student outcomes. In the second wave since the 1990s, the attention has been directed to interface effectiveness that aims at meeting the needs and expectations of stakeholders and fulfilling public accountability. In the third wave that is likely to characterize the present status, the notion of quality is redefined considering the emerging needs of the new era of technology and information with an emphasis on globalization, localization, and individualization.

Lee and Walsh (2004) conceptualized the definitions of quality in early childhood education, driven by the analysis of 140 evaluation reports from the last three decades, as (a) outcome-determined quality, (b) standards-based quality, and (c) developmental appropriateness. That is, quality in early childhood education programs has been defined in relation to programs' contribution to children's achievement, compliance with an externally determined set of standards, or fulfillment of the NAEYC's (National Association for the Education of Young Children in the USA) guidelines for developmentally appropriate practice. According to Kagan (1999), early childhood enterprise attempts to attain five monumental tasks for quality assurance in the twenty-first century, defined as "A5". These goals include 100% universal *access* for all children, *affordability* for parents and also for staff to work in the field, age, individually, and culturally *appropriate pedagogy* for children that does not sweep away commitments to cognitive and literacy development, *innovation of assessments* that respect, protect and nourish young children for the purpose of accountability, and *advocacy for high quality programs* and system. Wearing the theoretical lenses, Raban, Ure, and Waniganayake (2003) also illustrated a range of top priorities in teaching young children. Accordingly, shifting from one theory to another changes the definition of quality in early education; for instance, from maturation to readiness, from active exploration to direct teaching, from learning independently to learning from others, and from personal needs and interests to societal expectations and roles.

The frameworks above illustrate that there are not definite criteria to judge educational quality. Rather, various definitions could be formed for delineating what is of high value for education. Broadly, one can make a definition of quality grounded on three main approaches including modernist, postmodernist, and reflexive perspectives. Logan and Sumsion (2010) introduced that top-down perspectives or the application of universal standards refer to modernist perspectives. Postmodernist perspective view quality as a value-laden and subjective construct. Reflexive perspective, on the other hand, is the combination of these two approaches and adopts both top-down and bottom-up approaches to defining and evaluating quality.

Holloway and Fuller (1992) argued that reforms in the field of child care have shifted the attention to modernist, also called bureaucratic approach since the 1970s and early 1980s. Correspondingly, the efforts have been directed to the identification of teacher behaviors which are associated with student success and inculcation of such behaviors in teacher training programs. However, this approach to educational quality sparked concerns because the opponents were afraid that the standardization of excellence in child care could silence local values about child-rearing practices. These worries were not completely wrong because several studies underlined variation in our understanding of educational quality. For example, Tobin, Hsueh, and Karasawa (2009) illustrated the influential role of culture in shaping professionals' beliefs and practices about the education of young children across countries, especially pointing to some differences in pre-primary education in the context of preschools from China, Japan, and the United States. The study by Yamamoto and Li (2012) also demonstrated that middle-class European American parents in their definitions of high quality preschool education referred more to self-directed learning, and responsiveness to individual and parent needs, while Chinese immigrant parents primarily laid stress on teacher qualifications. Furthermore, the child-centered notions of Western societies such as free play or some structural standards of the USA concerning class size or child-adult ratio are violated in some cultures (Boocock, 1995). The variation in our understanding about quality may reduce but does not completely disappear within culture. Albeit being united at some

core inspirations (i.e. happiness, confidence, being good at learning), Alexander (2010) showed that practitioners could espouse a range of beliefs regarding good early childhood education and successful children. The definition of quality can also vary if it is defined by a parent or a teacher (Barbarin et al., 2006). Hadley (2012), for instance, indicated that families valued a structured program where children follow the rules and a teacher is leading the classroom, while staff emphasized developing close relationships with children, giving children choices, and hearing their voice in programs.

Due to the variation in our understanding about educational quality, Dahlberg et al. (1999) suggested a reconceptualization of the discourse about quality so that it would consider complexity, plurality, and subjectivity instead of universal truths, standardization, objectivity, predictability, and control. Tobin (2005) as an anthropologist based on his work in different cultures also advocated for a definition of quality that responds to local conditions, beliefs, and values instead of imposing “one-size-fits-all” standards in early childhood education. Buell and Cassidy (2001) agreed with this postmodernist approach and argued that quality comprises a variety of ingredients at multiple levels; for instance, factors at the classroom and society level, and concluded that policy-makers should make systematic efforts to address diverse factors to ensure quality in early childhood education. Consistent with this view, Katz (1993a) proposed five approaches to the quality in the context of early childhood education that considers multiple perspectives. In her classification, multiple stakeholders including those of visiting adults and observers from above, participating children from below, parents from outside-inside, staff from inside, and finally society and its representatives from outside determine the criteria for judging the quality of early childhood programs (Katz, 1993b).

However, it is critical to mention that modernism is not wrong at all. As Dahlberg et al. (1999) stated, what is wrong is its use as the only true way to address quality issues. They, therefore, strongly recommend that researchers, practitioners, and all other stakeholders communicate with each other not to prove who is right but to develop a mutual understanding about the reasons for their educational choices and decisions. That is,

experts need to wrestle with the challenge of increasing layers of quality to integrate imperative voices from various stakeholders including child care owners and directors, parents, child caregivers, policy makers, and social service providers for a coherent system of early childhood care and education (Harrist, Thompson, & Norris, 2007). The critical and reflective dialogue concerning a range of values and beliefs about quality can indeed help making decisions about quality (Cottle & Alexander, 2012). Given the suggestion of Woodhead (1998), it is, therefore, better to ask the following questions before making any definition of quality: Who has a perspective on quality? Whom do these stakeholders perceive as beneficiaries from quality? What do they take to be indicators of quality? After then, he thought that the emerging perspectives could be discussed considering their relevance for early childhood education context. This is not impossible to practice. For instance, in Ireland, a national consortium was established to determine a national framework regarding the core aspects of quality in early childhood education and care. As Duignan (2005) reported, in this consultation group that involved 387 participants, multiple stakeholders such as teachers, students, parents, adult educators, and policy makers shared and discussed their perceptions, which eventually led to consensus on the core ideas regarding how to define, assess, and support quality in early childhood education and care in Ireland.

Apparently, there is no use of polarization between modernist and postmodernist approaches while defining quality in early childhood education. Sheridan (2009) asserted that we need to move beyond our perception of quality as either subjective or objective entity and perceive the relation between sustainable and dynamic parts and their interaction with each other. Although she acknowledges that a perfect definition of quality is neither possible nor desirable, making assumptions about the nature of quality is inevitably required for the purpose of research, assessment, and improvement. The use of only pluralist approaches makes it tough if not impossible to make decisions about quality, for instance, because a program could be rated excellent by a researcher from top-down but be considered poor by a child from below (Katz, 1994). The achievement of a universal understanding about quality is paramount to the objective judgment of

program quality, development of a basic framework for the studies, and practical judgment of the quality (Lee & Walsh, 2004).

Siraj- Blatchford and Wong (1999) also noticed that the polarization in objectivist and relativist approaches to defining quality is not helpful for educational practice. Rather, they proposed that these approaches should be both considered in making decisions because quality in early childhood education is not completely objective or subjective. For example, they viewed the content and goals of curriculum to be subjective but pedagogy to be much more objective. In other words, they put forward that what children learn and for which purpose they learn may vary; however, the practices and techniques that are selected to realize content and goals remain much same in different contexts. Therefore, it can be concluded that objectivist and relativist definitions of quality are both warranted and can co-exist in the system of early childhood education. Maybe, the official nationwide standards that are decided by experts or governments could set the stage for the discussions to arrive at definitions of quality (Tanner, Welsh, & Lewis, 2006). In this respect, the official nationwide standards are viewed as the beginning but not the ending of defining quality.

2.2. Components of High Quality Early Childhood Education

Despite the ambiguity in the interpretation of educational quality, we have reached some consensus on what constitutes high quality education for young learners. Cryer, Tietze, and Wessels (2002), for example, indicated that parents from Germany and the USA, the countries with different systems of early childhood education, did not only agree with the professionals regarding the important aspects of quality in early childhood education but also had a shared view of quality in early childhood education. Yamamoto and Li (2012) as well showed that several universal opinions are shared by parents about high quality preschool education regardless of their culture and socio-economic backgrounds. Apparently, among parents in this study, of significance were teachers, curriculum, and environment for high quality preschool education. Oberhuemer (2005) also pointed to

the existence of some shared values about quality in early childhood education on the basis of the analysis of early childhood curricula in a range of countries including Denmark, France, Sweden, Australia/Queensland, Chile, China, New Zealand, and Nigeria. This study, for instance, underlined that play and a holistic approach to learning were considered significant in early years education internationally.

Despite the differences in details, Cryer (1999), moreover, emphasized that early childhood education professionals have reached a widespread agreement on high quality programs in the United States and beyond. This study set forth that safe and healthful care, developmentally appropriate stimulation, positive interactions with adults, encouragement of individual emotional growth, and promotion of positive relationships with other children are the benchmarks of good early childhood education currently. According to Dodge (1995), high quality programs have a developmentally appropriate curriculum that considers the developmental trajectory of children in a given age and respond to their individual needs. Especially, a high quality curriculum in early childhood education requires that children learn through play and social interactions and construct their knowledge and it is ensured that children's basic needs are met, and they are safe and secure before any learning to occur. Dodge (1995), moreover, explained that a good curriculum includes goals for all areas of development and requires a physical environment that offers a variety of opportunities for children to learn and develop under the facilitation of supportive staff who form healthy relationships with both children and their families in high quality programs.

The United Nations Children's Fund (UNICEF) in 2000 proposed a broad model to define quality in education on the basis of the robust findings in the literature about educational effectiveness. The definition of quality that UNICEF proposed is open to change but in essence, comprises five dimensions regarding learners, content, processes, environments, and outcomes. *The quality learners* pertain to health and psychosocial development of learners (e.g., good health and nutrition status, learner confidence and self-esteem, regular attendance for learning, early assessment of disabilities) and relevant home

characteristics (e.g., home/school/community partnerships, family support for learning, positive early childhood experiences). *The quality content* addresses issues with respect to materials (e.g., comprehensible, gender-sensitive, relevant to schooling), curriculum (e.g., based on defined learning outcomes, non-discriminatory and student-centered, unique local and national content, includes Literacy, Numeracy, Life skills, includes relevant knowledge on gender equity, HIV/AIDS, health, nutrition and peace), and standards. *The quality processes* concern factors that are linked to the effectiveness of learning experiences of students (e.g., professional and ongoing development of teachers, access to language used at school, student-centered methods, positive and gender-sensitive teacher/student relationships, teacher belief that all students can learn and commitment to student learning, frequent monitoring and assessment by teachers that leads to further learning, administrative support and leadership). *The quality environments* deal with physical elements (e.g., access to school facilities, class size), psycho-social elements (e.g., peaceful and safe environments especially for girls, effective school discipline, inclusive environments), and service delivery (e.g., provision of health services). *The quality outcomes* encompass knowledge, skills, and attitudes that students are expected to acquire as a result of their educational process (e.g., achievement in literacy and numeracy, healthy, well-nourished, aware of rights, able to participate in decisions, able to respect diversity).

The European Union (EU) also proposes a common schema to guide policies regarding the provision of high quality early childhood care and education services in member countries. The basic characteristics that are emphasized for high quality early childhood education and care in Europe are listed as follows: (a) a safe yet stimulating environment, (b) supportive and encouraging staff, (c) opportunities for intensive verbal and social interactions, (d) appropriate experiences to promote children's cognitive, physical, and social and emotional development (European Commission, 2014).

NAEYC (2008) also proposed ten standards for quality assurance in early childhood education programs in the USA. Specifically, NAEYC echoes that high quality programs for young children

- 1) promote positive relationships among children and adults,
- 2) implement a curriculum that fosters children's learning in all areas of development and that offers children time and materials for play, self-initiated learning, and creative expression, and also individual and group activities consistent with their developmental needs and interests,
- 3) teach children with a range of culturally, developmentally and linguistically appropriate instructional approaches from structured to unstructured and from adult-directed to child-directed,
- 4) assess children continuously and regularly and with formal and informal methods to provide information about children's development and learning,
- 5) promote the health of children and protect the health and safety of children and staff,
- 6) employ teachers who have specialized training in child development or early childhood education and participate in ongoing professional development activities,
- 7) form partnerships with families based on mutual trust and respect and support their involvement in the education of their children,
- 8) cooperate with community agencies and institutions and take advantage of community resources to maximize the development and learning of children,
- 9) provide healthful, safe, and well-equipped and organized indoor and outdoor environments to foster children's development and learning, and
- 10) implement regulations and develop and act policies to ensure staff stability, continuous program and staff improvement, and fiscal soundness.

Jalongo et al. (2004) established the international hallmarks of high quality early childhood education programs on the basis of their expertise in early childhood education and diverse cultural experience in Africa, Europe, India, and the United States. The

important aspects of their definition of good early childhood education are like the following: (a) sound philosophies and goals, (b) high quality environments, (c) developmentally appropriate and effective curriculum and pedagogy, (d) responsiveness to children's core and special needs, (e) respect for families and communities, (f) professional teachers and staff, and (g) rigorous program evaluation. In this model of quality, Jango et al. (2004) specifically advocated that nations set goals to facilitate the optimal development of all children and provide safe, socially supportive and intellectually stimulating environments for children. Additionally, they established that high quality curriculum and pedagogy are age, culturally, and individually appropriate and respect children's playful learning style instead of adapting rigid approaches to imposing academic skills. They further suggested that high quality preschool programs support and cooperate with families and communities to improve programs and make a contribution to care and education of children. From their point of view, as important as the initial and ongoing training of teachers is the improvement of teacher salaries and the image of the profession, which can cause competent and committed individuals to select and remain in the early childhood education profession. The last but not least essential part of high quality preschool pragmas is ongoing, comprehensive, and longitudinal assessments to learn about programs' contribution to each child, family, community, and nation.

Ceglowski (2004) also depicted the key facets of "which is good for children" on the basis of the interviews with multiple stakeholders including family child care providers, center-based providers, administrators, child care resource and referral staff, licensers for family child care and center-based child care programs, legislators, employers, researchers, teacher educators, staff from Department of Children and Families, and Learning, and staff from community organizations. In this study, high quality programs are characterized with providers who (a) enjoy children, (b) are caring, stable and responsive to the individual needs of children, (c) have a professional attitude and benefit from training opportunities, and (d) form good relationships with parents. Moreover, programs are perceived right when they (a) are structured and offer children

developmentally appropriate learning activities and culturally sensitive care, (b) have ideal groups sizes and adult-child ratios, and low a rate of staff turnover, (c) are equipped with materials and comply with safety and health guidelines, (d) are parent friendly, (e) comply with licensing standards and are accredited, and (f) offer benefits and reasonable level of wages for the staff. The expectation from high quality preschool programs is also that children become happy and ready for school.

In the study by Mooney and Munton (1998), the qualitative data from local authority officers, private day nursery proprietors, day nursery staff, childminders, and parents indicated that the ideas about quality in early childhood education assembled around such themes as (a) affordability and accessibility to centers, (b) continuity of care, (c) settling children into day care settings, (d) training and qualifications of staff, (e) working conditions of staff, (f) social status of child care, (g) education and curriculum of programs, and (h) relationship between parents and staff. Lee and Walsh (2005) portrayed the core aspects of quality from the perspective of American Educators. The quality early childhood education and care were mostly determined concerning safety and health, independence of children, self-exploratory, individualized and active learning, and developmental appropriateness. In the study of Colker (2008), the most important characteristics for effective teaching in early childhood education identified by teachers as follows: passion, perseverance, risk-taking, pragmatism, patience, flexibility, respect, creativity, authenticity, love of learning, high energy, and sense of humor (Colker, 2008). From the standpoint of children, teachers' respectful relationships with children (e.g., being kind, not shouting at children) and good management of inappropriate behaviors (Harcourt & Mazzoni, 2012), and having healthy relationships with other children, choosing what to do, and playing (Einarsdottir, 2005) are the important aspects of good education.

2.3. Research on Quality in Early Childhood Education

Traditionally, quality has been defined on the basis of outcome, structural, and process, criteria in research in the field of early childhood education and care (Dahlberg et al., 1999). Dahlberg et al. (1999) explained that outcome criteria defined quality mostly on the basis of children's developmental gains and rarely on parents' satisfaction with services. Structural criteria refer to inputs or resources and also some organizational aspects of institutions such as group size, levels of staff training, adult to child ratios, and the presence and content of a curriculum. Process dimension of quality entails what happens in educational organizations such as children's activities and teacher-child or child-child interactions. Cassidy et al. (2005) similarly pointed to this framework for the study of quality and explained that structural quality denotes factors that state regulatory or licensing processes can easily control (e.g., teacher education, class size), while process quality pertains to factors that require an adult's involvement with materials, activities, or children and also all sorts of interactions among individuals that include child-child, teacher-child, teacher-teacher, and teacher-parent interactions. Moreover, according to Dunn's (1993) categorization of day care quality assessments in research, structural criteria refer to the distal quality, while process criteria refer to proximal quality in child care and education centers.

Observation tools have constituted an important place in research on quality in early childhood education. To date, a variety of observation measures has been used to determine the quality of early childhood care and education centers. Some of the rating scales in the literature focus on measuring quality in specific subject areas. Kilday and Kinzie (2009), for instance, introduced the scales that were developed for the purpose of measuring quality in mathematics in early childhood education (e.g., Classroom Observation of Early Mathematics-Environment and Teaching, the Inside the Classroom Observation Protocol, Reformed Teaching Observation Protocol). Early Language and Literacy Classroom Observation (ELLCO) by Smith, Brady, and Anastasopoulos (2008) especially targets at measuring the quality of pre-k programs concerning language and

literacy development of children. However, some other scales were developed to assess global/overall quality in early childhood education and care settings. Ishimine and Tayler (2014) identified 11 measures that were widely used in research to assess the overall/global quality in early childhood education centers that served children for three years and above. As described by Ishimine and Tayler (2014), these scales have both strengths and weaknesses and in general (a) address structural or process aspects of quality or both of them at various weight, (b) assess quality mostly via observations and sometimes incorporates interviews into their design, (c) are designed on a continuous scale to mirror a range of variability rather than on a dichotomous scale, (d) are for center-based centers rather than family or home-based centers, (e) relies on criterion validity and inter-rater reliability for psychometric evidence, and (f) are more likely to reflect the American way of understanding about education. Table 1 summarizes the key features of these 11 scales.

Table 1
Characteristics of Quality Measures in Early Childhood Education

Scale	Target group	Focus	Level	Dimensions	Data collection method
1. Assessment Profile for Early Childhood Programs (APECP; Abbott-Shim & Sibley, 1992)	Infant, toddler, preschoolers.	Structural > Process	Classroom	Learning environment, scheduling, curriculum, interacting, individualizing.	20 minutes observation in an hour for 3 hours with review of records and teacher interview
2. Child Caregiver Interaction Scale (CCIS; Carl, 2007)	Infant, toddler, preschoolers.	Process > Structural	Classroom	Emotional domain, cognitive/physical domain, social domain.	3 hours
3. Caregiver Interaction Scale (CIS; Arnett, 1989)	Infant, toddler, preschoolers.	Process	Classroom	Sensitivity, harshness, detachment, permissiveness.	45 minutes or more observation per caregiver
4. Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008)	Early childhood and also early elementary grades.	Process	Classroom	Emotional support, classroom organization, instructional support.	15-20 minutes observation for 4-6 cycles
5. Classroom Practices Inventory (CPI; Hyson, Hirsh-Pasek, & Rescorla, 1990)	4 and 5 years old children.	Structural < Process	Classroom	Part 1: Program/activity focus. Part 2: Emotional climate.	2.5 hours observation
6. Emerging Academic Snapshot (EAS; Ritchie, Howes, Kraft-Sayer, & Weiser, 2001)	Children 10 months to 8 years	Process Curriculum	Individual child	Setting, activity, teaching interactions.	A 20-second observation periods and a 40-second coding period in five cycles. Rotation for four children. An average of five minutes to observe the entire classroom. Half-day observation

Table 1 cont.

Scale	Target group	Focus	Level	Dimensions	Data collection method
7. Early Childhood Classroom Observation Measure (ECCOM; Stipek & Byler, 2004)	Children from the age of 4-7 years	Structural < Process	Classroom	Didactic and constructivist subscales on instruction, management, social climate.	3 hours observation
8. Early Childhood Environmental Rating Scale Revision (ECERS-R; Harms, Clifford, & Cryer, 2005)	Children aged from 2 and a half to 5 years	Structural > Process	Classroom	Space and furniture, personal routine, language-reasoning activities, interaction, program structure, parents and staff.	3 hours observation
9. The Leuven Involvement Scale for Young Children (LIS-YC; Laevers, 1994)	Center-based childcare, preschool, and early childhood education.	Process	Individual child or Classroom	Children's involvement.	For an individual child, every 15 minutes and less than 3 minutes intervals. For the classroom, observation of same children more than once.
10. The Observation Record of the Caregiving Environment (ORCE; NICHD, 2000)	For 6, 15, 24, 36, and 54 months old children.	Process	Individual child	Frequencies of specific behaviors and make qualitative ratings of caregivers' behaviors	44-minute cycles broken into four 10-minute observation periods
11. Program Quality Assessment (PQA Preschool version; High/Scope Educational Research Foundation, 2003)	Centre-based preschool or childcare settings.	Structural > Process Curriculum	Classroom	Learning environment, daily routine, adult-child interaction, curriculum planning and assessment. Interview items: parent involvement and family services. Staff qualifications and development, program management.	A full day (A half-day for observation and a half-day for interview)

Note: Adapted from Ishimine & Taylor (2014)

Based on the structural-process-outcome based conceptualization of quality and mostly through observation tools, the scholars so far have sought to determine the level of quality in early childhood education classrooms and the factors that predict the quality in the classrooms. Next sections summarize the key findings of the literature on these two lines of research.

2.3.1. Status of quality in early childhood education

A significant number of researchers has shown that high quality early childhood care and education is not a norm currently. Even some early childhood education and care centers that were accredited by NAEYC did not meet the criteria for high quality curriculum (Zan, 2005). In their review study, Dunn and Kontos (1997) figured out that developmentally appropriate practices that have been especially linked with reduced levels of stress and increased levels of motivation in children and also higher levels of cognitive functioning are not common in today's early childhood education programs because of parents' preference for academics-oriented programs and teachers' struggles with implementation. While McMullen, Alat, Buldu, and Lash (2004) remained optimistic about the quality of preschool education given the results of their survey which indicated that early childhood education professionals mostly had four years college education, were specialized in working with young children, were satisfied with their jobs, and reported to have good relationships with their colleagues and parents of their students, they underlined that this group of participants were NAEYC members and may not represent the general population of early childhood teachers in the USA.

In a sample of centers from the USA, Howes and Smith (1995) reported that quality was on average minimally adequate. In their sample, 22% of the infant-toddler classrooms and 15% of the preschool classrooms were considered inadequate and potentially harmful to children's development. In a sample of 103 kindergartens, Bryant, Clifford, and Peisner (1991) observed that only 20% met or exceed the criterion for developmentally appropriate practices, while 60% were below the criterion. They noted that low quality

was in part due to little focus on small group or individualized instruction, and hands-on and child-initiated activities. Tonyan and Howes (2003), moreover, demonstrated that a high proportion of preschool children in the centers in the USA did not experience activities that were likely to enrich their development. Goelman et al. (2006) similarly underlined that the quality of child care centers was in general low in both the USA and Canada. They noted that the majority of the centers met only minimum level of quality, whereas a scarcity of them reached good to excellent threshold. Scarr, Eisenberg, and Deater-Deckard (1994) paid attention to extreme diversity in the quality of child care centers in the USA and depicted this variability “like the range of intelligence from profoundly retarded to very superior” (p. 149).

The cases outside the USA do not appear to be different regarding the status of quality in early childhood education classrooms. Tayler, Ishimine, Cloney, Cleveland, and Thorpe (2013) reported that the level of quality in a sample of preschool classrooms from Australia was medium on average. It was remarkable that 87% of 250 preschool classrooms scored in the low range of quality regarding instructional support and there were not any centers in the high quality range for this domain in this study. It is alarming that Pessanha, Aguiar, and Bairrao (2007) also did not find a good quality toddler care center in a sample in a metropolitan city from Portugal. In another study in Portugal, Barros and Aguiar (2010) confirmed these findings and concluded that toddler care programs were poor and even had lower quality compared to several other countries including the Netherlands, Germany, UK, Greece, and the USA. The level of quality was mediocre in Chile as well (Herrera, Mathiesen, Merino, & Recart, 2005). The range of quality was large in this study, which indicates that there are centers that are good and still many others that have poor quality. In another study in Chile, consistently, of 120 early childhood education centers, only 7% offered good quality service, while a higher proportion of the settings were in the inadequate range of quality, similar to the findings from Spain, Germany, and Austria (Villalón, Suzuki, Herrera, & Mathiesen, 2002). This study, moreover, indicated that the distribution of the centers regarding their level of

quality was not random but varied by the type of the program they embraced and their geographical location.

In a cross-cultural study, the class quality was moderately high in Sweden, but it was at a moderately low level in South Korea (Sheridan, Giota, Han, & Kwon, 2009). In the Netherlands, the analysis of the studies between 1995 and 2005 indicated that the global quality of centers for children from zero to four years old declined over ten years (Vermeer et al., 2008). Vermeer et al. (2008) noted that there were not any low-quality centers in the study in 1995, while the percent of low-quality settings increased to 6% in 2001 and to 36% in 2005. Further, the proportion of the centers that were ranked as high quality declined significantly; namely, it was 37% in 1995, 18% in 2001 and zero in 2005. They also highlighted that the level of quality declined so much that the Dutch child care centers today currently lag behind of some countries such as Canada, Germany, the United Kingdom, and the United States in terms of their quality. In a cross-cultural study that involved samples from five industrialized countries, namely Austria, Germany, Portugal, Spain, and the USA, Tietze et al. (1996) indicated that the level of global quality in all countries met only minimal standards on average, and the variations in the quality of the centers were particularly large in the sample from the USA.

It is noteworthy to mention that quality does not manifest in early childhood care and education settings in an all-or-nothing fashion, which is highly reasonable because of its multidimensional nature. Early childhood education classrooms might be judged to have high quality in some aspects and still low quality in other aspects. The centers, for instance, may have a range of profiles in terms of the quality of emotional and instructional support they offer to preschool children. LoCasale-Crouch et al. (2007), for example, identified that the highest quality profile that was characterized by consistent emotional and instructional support to children was prevalent only in 14.5% of the prekindergarten programs from the USA that involved in their study. On the other hand, 18.8% of the centers had the poorest quality profile that lacked almost any emotional and instructional support. Further, the centers that offered a moderate to high level of

emotional support and a low to mediocre level of instructional support made up 49.9% of the participating settings. In 16.9% of the prekindergarten programs, there was nearly an average level of emotional support but a high level of instructional support.

Peisner-Feinberg and Burchinal (1997) pointed out that early childhood education and care centers were more likely to meet routine care needs of children, but they were poor regarding learning activities, individualized attention, and language stimulation. Bracken and Fischel (2006) found out that teachers characterized their classrooms with the activities that focused on promoting children's social-emotional development more than their cognitive development. Denny, Hallam, and Homer (2012) in a large scale demonstrated that preschool classrooms were almost good in terms of emotional support and student engagement, whereas they offered minimal quality in the areas of instruction and curriculum. The classrooms did not meet high quality criteria regarding supporting children's learning in mathematics, science, and diversity, and literacy. Furthermore, they were not excellent concerning instructional feedback and language modeling to children. La Paro et al. (2009) even revealed that the low level of instructional quality was consistent through preschool to kindergarten.

Justice, Mashburn, Hamre, and Pianta (2008) showed that the quality of language and literacy instruction was on average low in 135 preschool classrooms they observed. They noticed that only a few teachers used evidence-based strategies that are associated with improved language development such as asking open-ended questions, repeating and extending children's utterances, and modeling advanced vocabulary. The literacy instructions were not also explicit, systematic, and purposeful in the most of the classrooms. These results are not surprising because, Early et al. (2010) in their study based on classroom observations in 652 pre-k programs from 11 states from the USA depicted that children spent a considerable portion of their time in preschool classrooms, namely 44% of their entire time, in being unoccupied with any learning activity.

Doherty, Forer, Lero, Goelman, and LaGrange (2006) similarly noted that quality was almost confined to ensuring physical and emotional safety of children but excluded opportunities for their language and cognitive development in the most of the situations in the context of family child care. The study by La Paro, Rimm-Kaufman, and Pianta (2006) illustrated that it was rarely or never that kindergarten children were exposed to higher level instructional discussions that involve brainstorming, prediction, or expansion of learning opportunities. The same pattern, namely moderately high level of emotional support but low level of assistance for concept development and feedback, emerged in a national sample of prekindergarten classrooms from six states in the USA (La Paro, Pianta, & Stuhlman, 2004). Chen and de Groot (2014) identified that teachers' talk mostly lacked cognitive challenge for children and mostly required children to give short responses or factual information.

Consistently, Rentzou and Sakellariou (2011) showed that early childhood teachers in Greece were not harsh, threatening, hostile or judicial but not satisfactorily effective while interacting with children because they focused on giving instructions and controlling behaviors more than eliciting children's ideas and interests. Moreover, Rentzou (2010) showed that the quality of care and education was low in Greece especially because of the issues concerning physical environment, curriculum, family and community engagement, and recognition of diversity. In Jordan, the level of quality was overall average considering adherence to NAEYC's guidelines, while in most of the settings the classrooms were crowded, lacked appropriate equipment and materials for play, and offered teacher-directed and academically-based programs (Ahu Taleb, 2013). Pan, Liu, and Lau (2010) demonstrated that a sample of kindergarten classrooms from China was overall poor in quality because there were insufficient materials for children to explore, and a low level of parent involvement in most of the cases. Also, this study indicated that teacher-child interactions were mostly one-way, teacher-initiated, and occurred in whole-group activities and the activities were mostly teacher-directed group activities and only rarely there were free play and outdoor activities. The toddler classrooms in the study by Hallam, Fouts, Bargreen, and Caudle (2009) were rated good

to excellent considering space and furnishing; however, inadequate to minimal regarding listening and talking, personal care routines, and interaction.

In a sample of classrooms in Portugal, Pessanha et al. (2007) reported that the programs for toddlers did not meet basic safety and health requirements and also were considerably insufficient in the provision of materials, positive interaction, planning, and personalized care. In their comparative study, Sheridan and Schuster (2001) noted that child care centers in Sweden were more qualified compared to those in Germany. The sample schools from Germany were judged to be lower quality mostly because of the problems in physical conditions and lack of efforts to respond to individual needs and interests of preschool children. In Spain, Sandstrom (2012) demonstrated that the quality on average was poor concerning space and materials, personal care routines, developmentally appropriate activities and instruction, and instructional support, while the classrooms received higher scores concerning the quality of classroom climate, productivity, and relationship with families. Though these findings are likely to point out that achieving high quality early childhood education and care is challenging in many countries in the world, fortunately, there are a few exceptions. Niikko and Havu- Nuutinen (2009), for instance, reported that children, parents, and teachers were satisfied with the activities, organization and environment of preschool education in Finland. The parents from Germany and the USA also viewed the classes that their children attended as having quite good quality in the study of Cryer et al. (2002).

2.3.2. Predictors of quality in early childhood education

The majority of research has examined the factors that account for the variation in classroom quality in early childhood education. Thus far, a myriad of factors has been associated with quality in early childhood education and care settings. Research primarily stressed the influence of class size, teacher-child ratio, size and equipment of the classroom, teachers' behaviors and qualification, and teacher-parent relationship on quality (Textor, 1998). The review of Love et al. (1996) that involved the studies between

years 1979 and 1995 demonstrated that the research community addressed the relation of four main groups of quality variables to child outcomes. These entailed indicators concerning (a) classroom structure (e.g., child-staff ratio, group size, classroom scheduling), (b) classroom dynamics (e.g., caregiver-child interaction, caregiver-child relationship, caregiver guidance, caregivers' use of materials and objects), (c) staff characteristics (e.g., caregiver's level of formal education, caregivers' experience, staff turnover), and (d) family and child characteristics (e.g., household income, mother's education, family stress, child's age, child's ethnicity).

Following section includes results on the structural and process variables that have been linked with quality in early childhood education:

Goelman et al. (2006) indicated that successful child care and education centers hired more and better-trained staff. This study also pointed out that staff was satisfied and better paid, and financial resources were used and administered carefully in high quality preschool education centers. Pessanha et al. (2007) showed that toddler care was higher quality when the practitioners were better paid and younger. Barros and Aguiar (2010) found that the child-adult ratio predicted the overall quality in toddler care classrooms. The toddlers in this study experienced developmentally appropriate practices when the ratio of children to adults was smaller. O'Kane (2005) provided evidence for that regulations about structural features of quality such as group size and adult-child ratio were linked with improvements in the quality of child-adult interactions. Thomason and La Paro (2009) noticed that the quality of teacher-child interactions was higher in toddler classrooms when there were fewer children, and lower teacher-child ratio, and with teachers who had higher levels of education, specialized in early childhood education, and had membership in a professional early childhood organization. Moreover, they figured out that these significant relations that were observed for class size, teacher-child ratio, teacher education and the quality of teacher-child interaction were stronger for toddler classrooms than for preschool classes. Phillips, Mekos, Scarr, McCartney, and Abbott-Shim (2001) showed that the structural features such as adult-child ratio, teacher

training, group size, teacher training, teacher wage, and parents' fee were the significant predictors of quality. Scarr et al. (1994) revealed that the highest wage paid to a teacher was the best structural factor that were correlated with the process quality ($r = .51$), whereas other structural features such as child-caregiver ratio, group size, teacher training in child development or care, teacher education, and staff turnover did not explain a considerable variation in the process quality of centers. Phillipsen, Burchinal, Howes, and Cryer (1997) also predicted the process quality of child care from structural features both for infant-toddler and preschool classrooms. Namely, in this study, they indicated that process quality was higher in preschool classrooms when teachers were moderately experienced and had higher wages. In infant and toddler classrooms, in addition to teachers' experience, education and wage, the director's experience was a predictor of process quality. For all centers, process quality was higher when they were located in states with stringent regulations. In contrast to the advocates for mixed-age classes in early childhood education, Moller, Forbes-Jones, and Hightower (2008) revealed that preschool classrooms posed threats to social, motor, and cognitive development of children when there included children of various ages.

de Schipper, Riksen-Walraven, and Geurts (2007) hypothesized that the multiple factors that pertained to caregivers, children, and caregiving context determined the quality of caregiving. In this study, while caregivers' mood, caregiver-child ratio, group size, and support from colleagues and directors were non-significant, age of children and caregivers, and caregivers' report of their physical workloads were tied to the quality of caregiving. Especially, younger children received lower quality caring, and the quality was lower when caregivers were younger and reported higher levels of physical workload. Although there was not a significant relationship between workplace support (i.e., professional supports, physical/material resources, the absence of work overload) and classroom quality in this model, they found out that highly qualified professionals were employed in programs that offered higher quality care and better compensation.

Mims, Scott-Little, Lower, Cassidy, and Hestenes (2008) found that children received higher quality education when their teachers had higher levels of education and worked with the same group consistently. According to Torquati, Raikes, and Huddleston-Casas (2007), not teachers' years of education but having a Child Development Associate degree was a significant predictor of classroom quality. Pianta et al. (2005) demonstrated that quality was lower when teachers did not have formal training or degree in early childhood education. In the study by Denny et al. (2012), teacher education and experience were significantly related to classroom quality but in relation to different domains. Teachers' level of education and years of experience positively influenced the quality of instructional support, while a degree in early childhood education was positively associated with quality of student engagement. Wilcox-Herzog (2002) also uncovered that when preschool teachers had a certification in early childhood education, they were more involved with children and used more verbalizations during their interactions with children. More experienced teachers were less sensitive compared to less experienced teachers in this study. Wilcox-Herzog and Ward (2004) demonstrated that teachers with most education and training were most likely to report having involved and sensitive interactions with their students. In their meta-review including the studies that were published between 1980 and 2005, Fukkink and Lont (2007) concluded that specialized training with a focus on teacher-child interaction significantly contributed to caregivers' knowledge, attitudes, and skills, which in response positively affected children's behaviors. Ahu Taleb (2013) revealed that class quality was higher when teachers had bachelor's degrees rather than associate degrees, and were specialized in early childhood education; nonetheless, there was not any significant association between teachers' years of experience and class quality in a sample of kindergartens from Jordan. The secondary analysis of seven large-scale early care and education studies did not yield robust results considering the effect of teachers' degree of education and major on classroom quality or children's outcomes (Early et al., 2007). Teacher education was positively and significantly related to classroom quality in two studies, while there were no associations in four studies and a significant but negative correlation was found in one study.

Hughes-Belding, Hegland, Stein, Sideris, and Bryant (2012) showed that family care quality was higher when the providers had higher years of experience and participated in more professional development activities. For family child care setting, professional development activities that were closely aligned with program quality indicators better predicted the quality in comparison to caregivers' education alone (Hallam, Bargreen, & Ridgley, 2013). Claire Son, Kwon, Jeon, and Hong (2013) provided evidence that early childhood teachers' educational background and professional development in the form of coaching support influenced the classroom environment quality and so children's school readiness. This study specifically indicated that teachers who majored in early childhood education or in child development via higher quality social-emotional practices contributed to children's gains in early math skills, social skills, and learning behaviors. The coaching support influenced children's gains in receptive vocabulary and social skills and their development of positive approach to learning by means of high quality parent involvement activities. The teachers' level of education was positively and directly linked with early reading skills of children, while teachers' experience and credentials were significant predictors for neither the quality of classroom environment nor children's school readiness.

Of five general mood traits, caregivers' positivity and optimism rather than unhappiness, self-confidence, joyfulness were related to the quality of their behaviors in the study by de Schipper, Riksen-Walraven, Geurts, and Derksen (2008). de Schipper, Riksen-Walraven, Geurts, and De Weerth (2009) figured out that there was an association between the stress level of caregivers and the quality of their practices. An increased level of caregiver stress as reflected in higher levels of cortisol was linked with lower quality caregiving behavior. Doherty et al. (2006) unveiled the significance of commitment to the occupation with a professional approach for quality in family care centers. This study confirmed that family care centers offered higher quality services when providers had a college degree or credential in early childhood education or related fields, showed intentionality (i.e., being concerned with meeting standards and/or to be more professional, choosing family child care as a career again, citing working with children

and/or contributing to their development as among the three most positive aspects of their occupation) and used some support services. Thomason and La Paro (2013) demonstrated that teachers' commitment to the field that addressed their professional organization membership, the perception of career as long-term, and job satisfaction was positively tied to quality, in addition to their years of experience and education.

Pianta, Barnett, Burchinal, and Thornburg (2009) asserted that not all type of educational programs was effective in early childhood education. They contended that children's gains are especially larger in educationally focused and well-defined programs, which are evidently characterized with warm and sensitive interactions, explicit instruction, verbal stimulation, and responsive feedback. Slot, Leseman, Verhagen, and Mulder (2015) also pointed out that the group size and teacher-child ratio were not related to emotional and educational process quality in infant classrooms in the Netherlands; however, the use of an educational program and professional development activities were the significant predictors of process quality. Domitrovich et al. (2009) in an experimental study indicated that teaching quality considerably improved when there was an enriched curriculum for children's language, emergent literacy, and socio-emotional development and teachers were trained about it with professional development activities including workshops and in-class mentor support. Salminen et al. (2012) indicated that high quality classrooms were characterized by teaching practices that were predominantly child-centered and literacy-oriented in comparison to low-quality classrooms. In family child care, Zuniga and Howes (2009) found that the time a provider spend on scaffolding children's activities, and the providers' level of education were positively correlated with the global quality of the programs. Also, the increase in the amount of providers' scaffolding was positively related to children's engagement with pre-academic literacy activities, while it was responsive caring that predicted children's engagement with math and science activities. Slot et al. (2015) noticed the relationship between the type of activities implemented in infant classrooms and the process quality observed in them. This study especially put forward that process quality was higher in classrooms when children engaged in creative and educational activities but lower when it was time for free play.

Effective Provision of Pre-School Education (EPPE) Project was carried out between 1997 and 2003 in the UK to determine the characteristics of effective preschool programs and their influence on the development of children. This was a large scale study and utilized mixed methodology in its design. The quantitative study that involved more than three thousand children and their families from 141 pre-school centers were followed with the in-depth qualitative inquiry of 14 cases that were considered effective. The findings overall demonstrated that children benefited most from preschool programs where (a) practitioners used open-ended questioning, offered differentiated learning opportunities, promoted sustained shared thinking (i.e., interacting with a child on the basis of his or her interests to develop an idea or skill), and encouraged children to be assertive and also to rationalize and talk through their conflicts (b) free play and teacher-led activities were balanced, (c) educational and social development of children were perceived complementary, (d) parents were involved, especially for the establishment of shared goals, and (e) there were strong leadership, little staff turnover, and qualified staff (i.e., a good understanding of pedagogical content knowledge, training) (Siraj- Blatchford, Taggart, Sylva, Sammons, & Melhuish, 2008).

Bulotsky-Shearer, Wen, Faria, Hahs-Vaughn, and Korfmacher, (2012) demonstrated that children exhibited lower academic and social gains when their parents involved at a low rate, and the quality of their classrooms was low relative to children with either higher degrees of parent involvement or classroom quality. As parent involvement in this study determined children's outcomes at the same level of classroom quality, it needs to be considered an essential element of high quality early childhood education. Xu and Gulosino (2006) showed that parent-teacher interactions were a positive predictor of students' performance in mathematics, reading, and general knowledge tests, while there was not any influence of the credentials a teacher has in the quality of educational practices and student gains.

Moreover, a host of research indicated that developmentally appropriate practices predicted children's gains in academic, social, and behavioral domains (Huffman & Speer,

2000). Clarke-Stewart, Lee, Allhusen, Kim, and McDowell (2006) revealed that children in classrooms that were characterized with developmentally appropriate practices (e.g., talking to a child, playing with a child, and close relationship with a child) had higher levels of social competence and lower levels of problem behaviors. On the other hand, children in classrooms where there were large child ratio, and traditional teacher attitudes and educational practices had lower levels of social competence and higher levels of internalizing and externalizing behaviors. Burts et al. (1993) indicated that children who attended developmentally appropriate kindergarten programs performed better on reading in primary grades compared to their peers from developmentally inappropriate kindergarten programs, in contrast to common assumption that children would perform better in academics in teacher-directed classrooms with an emphasis on direct reading instruction. Furthermore, in this study, developmentally appropriate programs were more likely to meet the needs of children from low socio-economic parents in reading than programs with formal academics instruction. Especially, Burts et al. (1992) revealed that children overall exhibited lower levels of stress in developmentally appropriate programs than did children in inappropriate classrooms, while boys and black students were more vulnerable to stress in developmentally inappropriate classrooms.

Preprimary Project by the International Association for Evaluation of Educational Achievement (Bracey, Montie, Xiang, & Schweinhart, 2007) investigated the link between structural and process characteristics of care and education settings that children attended at the age of four and their cognitive and language performance at the age of seven. In this longitudinal study, the sample was drawn from ten countries that represented North America, Europe, and Asia and both developed and developing nations. Across all countries, children's achievement at the age of 7 were better when children had more free choice activities and less whole group activities at the age of 4. There was also a significant positive correlation between the level of teacher education and the number and variety of materials in the settings and children's language and cognitive development three years later.

O'Connor and McCartney (2007) indicated that high quality teacher-child relationships positively influenced children's development and additionally protected children from the adverse effects of insecure maternal attachment on their achievement. Likewise, a close teacher-child relationship acted as a protective factor for children who may be at risk because of their family characteristics that involved maternal education, parenting beliefs, and parents' caregiving practices (Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002). In the study by White (2013), teacher-child relationship predicted the writing quality of children. This finding implied that children are likely to miss some available learning opportunities when they feel that they experience conflicts in their relationship with their teachers. Schmitt, Pentimonti, and Justice (2012) revealed that preschool children from low socio-economic backgrounds had higher gains in grammar when they had a higher quality relationship with their teachers. Moreover, within highly conflicted teacher-child relationships, children's grammar gains were greater when they exhibited strong behavior regulation. The low behavior regulation along with low-quality teacher-child relationship was considered a hurdle for optimal language development of children.

The type of center can also explain the variation in the quality of early childhood education and care settings. Bigras et al. (2010), for instance, noted that both the structural and process quality was higher in center-based child care settings than family-based centers. Sosinsky, Lord, and Zigler (2007) revealed the unique effect of sector on the quality of child care centers. This study unveiled that nonprofit child care centers had higher quality than for-profit centers considering such indicators as staff wages, staff turnover, staff-child ratio, staff education and professionalism, and positive caregiving. Also, there were some differences in center quality considering their subsectors such as for-profit independent or chain centers and nonprofit religiously affiliated or non-religiously affiliated centers. Cleveland and Krashinsky (2009) demonstrated that nonprofit child care organizations were more likely to seek out high quality service for children. However, this nonprofit advantage was stronger in thick market (i.e., markets with at least 25,000 preschool children) than thin markets (i.e., markets with fewer than 15,000 preschool children). In thick markets, nonprofit organizations are more likely to

hire more and better-educated staff and pay higher salaries, and in response produce higher quality service.

Roach, Kim, and Riley (2006) demonstrated that ongoing funding required to maintain quality in early childhood care and education programs. Otherwise, some of the improvements in quality reduced when funding was declined. Rigby, Ryan, and Brooks-Gunn (2007) indicated that increased subsidies and strict but not stricter regulations influenced child care quality positively; nonetheless, this effect was moderate. Leana, Appelbaum, and Shevchuk (2009) found out that not individual but collaborative job crafting that corresponded to the joint efforts of teachers to shape their work practice for shared objectives significantly contributed to the quality of care especially when they were less experienced. Dennis and O'Connor (2013) showed that the classroom quality was higher when preschool centers were evaluated more positively concerning the overall organizational climate which corresponded to collegiality, professional growth, supervisor support, clarity, reward system, decision-making, goal consensus, task orientation, physical setting, and innovativeness, and also relational organizational climate which included teachers' relationships with their colleagues and leadership. The teachers' sense of community that denoted to the type and level of collaboration among teachers and teacher influence in administrative decision making in schools, along with teachers' high quality language and literacy instruction, positively influenced children's literacy-related outcomes (Guo, Kaderavek, Piasta, Justice, & McGinty, 2011).

LoCasale-Crouch et al. (2007) demonstrated that the poorest quality was observed in prekindergarten classrooms that involved higher numbers of disadvantaged children who are poor, non-Caucasian, and also with lower levels of maternal education, whilst the highest and the poorest quality classrooms were not significantly different from each other with respect to some structural features of programs like teacher training/certification, class size, child/adult ratio, and location in a public school. The level of observed quality was lower in programs with higher proportions of children from families with low income and low level of education (Torquati, Raikes, Huddleston-

Casas, Bovaird, & Harris, 2011). The programs had lower quality when 60% of children were from homes below the poverty line (Pianta et al., 2005). De Marco and Vernon-Feagans (2013) indicated that child care quality was higher in neighborhoods that were characterized by higher levels of safety, which in response exerted effects on the receptive language development of children. The low-quality classrooms were considerably more likely to be non-accredited and serving children from minority groups and low-income families, and with teachers with less formal training (Gerber, Whitebook, & Weinstein, 2007). Although children who are not poor are not always exposed to high quality care, there is more likelihood that children from socioeconomically disadvantaged families receive low-quality care (Hynes & Habasevich-Brooks, 2008).

Overall, these results offer diverse answers about quality in early childhood education and even sometimes contradict each other. In this respect, it may seem that existing research is not adequately competent in providing answers about what constitutes quality in early years education, but actually, it does. Considering the tremendous complexity of doing daycare research, Shpancer (2006, p. 234) says:

Extensive research has documented all manner of small, often contradictory effects that ultimately do not cohere into an acceptable scientific ‘message’ or directive, but rather leave the decision in the hands of people and culture, to depend upon parental and societal values, aspirations, temperament, judgments, and finances—the personal and subjective calculus that defines the seam between ‘social’ and ‘science.’ In other words, the inconsistent results obtained by four decades of research do not constitute a failure to find the hidden answer. They are the answer.

This implies that it is not the research that does not give accurate answers. We are the ones who cannot make sense of the accumulated body of knowledge. To find the answers that we are looking for, Shpancer (2006) argued that how the phenomena are defined, measured, and analyzed in a particular study needs to be considered in the interpretation of research findings. This also means asking multiple questions rather than one big question.

2.4. Teacher-Child Interaction in Early Childhood Education

Kontos and Wilcox-Herzog (1997) in their review study categorized research on teacher-child interaction into the following four main themes: (a) frequency of interactions teachers have with children, (b) kinds of interactions teachers have with children, (c) factors influencing teacher-child interactions, and (d) relation of teacher interactions to child development. They set forth four key findings as a result of the synthesis of this stream of research. First, the frequency of teachers' interactions with children may vary in early childhood education classes on the basis of children's behaviors and characteristics and accordingly, teachers need to be aware of the distribution of their attention on individual children and pay attention to the quality of their interactions with children to compensate for low-frequency interactions. Second, there are a number of ways a teacher can interact with children, but teachers' roles (e.g., socializing, playing, encouraging, monitoring, managing), sensitivity (e.g., warmth, attentiveness, responsiveness, harshness), involvement (e.g., ignoring, providing comfort, engaged in prolonged talk), and talk (e.g., how often, what type) constitute more frequently studied aspects of teacher-child interaction. Third, child characteristics (e.g., ethnicity, socio-economic status), teachers' educational background, child-adult ratio and group size, and curriculum can influence the ways in which teachers interact with children in their classrooms. Fourth and last, teacher-child interactions are at the heart of early childhood education because research has captured that teachers' positive interactions with children are related to their enhanced development.

As regards the nature of teacher-child interaction in early childhood education, de Kruif, McWilliam, Maher Ridley, and Wakely (2000) identified that teachers' interaction behaviors with children manifested on a range of dimensions including redirecting, introducing, elaborating, informing, acknowledging, and praising. Wen, Elicker, and McMullen (2011) observed that teacher-child interactions were more frequently characterized by giving directions to children, responding to children's initiations, and engaging in non-interactive classroom management activities in early childhood

classrooms. They noted that they appeared to be highly directive. Early et al. (2010) similarly revealed that teacher interactions in preschool classrooms were three times more didactic than scaffolded. Although they stated that implementing a variety of teaching approaches is part of good teaching and so didactic instruction is considered appropriate in some cases, they highlighted that scaffolded interactions that are responsive to the needs of children and facilitate children to think and construct their knowledge would be commonplace in high quality preschool education. In a sample of inclusive classrooms, File (1994) revealed that teachers interacted with children both typically developing and with disabilities in free play time more frequently to support their cognitive development rather than social development. However, Pianta, La Paro, Payne, Cox, and Bradley (2002) mentioned that the purpose was teaching academics in only 21% of the observed interactions.

Teacher-child interaction constitutes an important aspect of quality in early childhood education because it has been linked to a variety of child outcomes in literature thus far. For example, McCartney (1984) demonstrated that teacher-child verbal interaction (e.g., the number of conversations children have with their caregiver, the number of functional utterances a caregiver direct to children) predicted children's outcomes in language development. McCartney et al. (1997) showed that toddlers and preschoolers engaged in social bids (i.e., a child's initiation of social exchange) more frequently in classrooms that had a higher level of quality in teacher-child interactions. In the study of Holloway and Reichhart-Erickson (1988), children who had higher quality interactions with their teachers provided more prosocial responses for social problem-solving tasks. Howes and Smith (1995) demonstrated that children regardless of their ethnicity and social class were cognitively more active in the classrooms that were characterized by positive teacher-child interactions.

The positive teacher-child interaction that was marked by a high level of teacher engagement was associated with a higher level of children's positive affect, while a low level of teacher engagement in teachers' interactions with children predicted the

intensity of their negative affect (Hestenes, Kontos, & Bryan, 1993). In this study, Hestenes et al. concluded that teachers' interactions and involvement with children are a stronger predictor of their emotional experience in child care centers than the quality of physical settings and some structural characteristics as teacher-child ratio and group size. Burchinal et al. (2008) in a comprehensive study that involved a randomly selected sample of 240 pre-kindergarten programs from six states in the USA demonstrated that sensitive and also stimulating interactions with teachers were associated with children's language, pre-academic, and social skills at the end of the kindergarten year. Especially, this study stressed that coherency and clarity were as much important as sensitivity and responsiveness in teacher-child interactions. In another study that involved a sample of kindergarten children from low-income families, teacher-child interaction quality predicted such outcomes as children's level of social competence, the level of behavior problems, and also their language, reading, and math skills (Burchinal et al. 2010).

Howes et al. (2008) specially figured out that in classrooms where teachers' interactions with children were sensitive and responsive and where these interactions encouraged children for communication, reasoning, and learning, children were more likely to engage in higher order thinking and creative activities, receive relevant feedback, and showed larger gains in language and literacy and social domains. Vitiello, Moas, Henderson, Greenfield, and Munis (2012) noted that the temperament of children moderated the outcomes linked with positive teacher-child interactions. They demonstrated that over controlled children who were defined as being shy or hesitant in classrooms performed better in math in comparison to resilient children who were defined as being engaged, generally happy, and socially competent when they were provided with higher levels of instructional support. Compared to resilient children, under controlled children who were defined as being aggressive achieved fewer gains in math when there was a lower level of emotional support in their classrooms. The resilient children displayed higher gains in language and literacy when there was higher emotional support for them in comparison to over controlled children.

2.5. Quality in Early Childhood Education in Turkey

According to Fundamental Law for National Education (2014), early childhood education in Turkey constitutes the education of children who are not at the age of compulsory elementary education. In this law, general aims of early childhood education are depicted like the following:

1. To ensure the development of children physically, mentally, and emotionally and to equip them with healthy habits,
2. To prepare children for elementary education,
3. To provide a common learning environment for children who have deprived home conditions,
4. To ensure that children speak Turkish accurately and fluently.

The radical changes in the structure of education system as part of 4 + 4 + 4 education reform in 2012 changed the starting age for early childhood education in Turkey as compulsory elementary education was extended to the schooling of 66-month-old children. Specifically, as stated in the Regulation on Early Childhood and Elementary Education Institutions (2014), children when they turn 36 months and have not turned 66 months by the date of school registration periods are eligible to be enrolled in independent pre-primary schools (anaokulu) or practical pre-primary classes (uygulama sınıfları) or children who turn 48 months and have not turned 66 months by the date of school registration periods can be enrolled in pre-primary classes in elementary schools (anasınıfı). If there is a written parental request, children between 60 months and 66 months may start compulsory elementary education instead of having early childhood education.

The centralized early childhood curriculum is a remarkable source to grasp the basic principles that guide the current practice in early childhood education in Turkey. The national curriculum updated in 2013 expects a child-centered early childhood education that mainly supports children to plan and implement their own learning activities and to

question, explore, discuss, and produce. In the program booklet, it is highlighted that children learn primarily via play and exploration. While implementing this curriculum, it is required that early childhood teachers adjust their program to the needs of community, parents, and children, and involve parents in the education of their children. The curriculum aims children's development in all areas, while specifically at the center of early childhood education are helping children to be creative, cooperative, responsible, tolerable, confident, autonomous, empathetic, and to have self-respect, self-regulation, and critical thinking and communication skills.

As a remarkable progress, Ministry of National Education (MoNE) in collaboration with UNICEF established quality standards for early childhood and elementary education institutions in 2015. As stated in the guidebook prepared by MoNE (2015), the standards are developed as a tool to help intuitions to engage in internal evaluation for the purpose of continuous quality improvement but not to reward or punish schools. Evaluation results are mainly expected to be used in developing school development plans. In general, it is intended that the standards are responsive to children's rights, sensitive to societal gender roles and children with special needs, and consistent with general aims of elementary education in Turkey. In this quality improvement model, to determine to what extent early childhood education institutions meet the standards, data are gathered from teachers, parents, and school administrators, and also from school records and documents. There are overall nine standards and 39 sub-standards on three domains including educational administration, learning and teaching processes, and support services. These standards are also used to calculate a quality score for each school on some hidden dimensions defined as democratic school climate, psychological guidance and counseling services, sensitiveness for societal gender roles, and education of children with special needs. For early childhood intuitions, the quality standards in Turkey are as follows (MoNE, 2015):

In the domain of educational administration: Having a school development plan and implementing it, having qualified and adequate number of support staff, having professional development activities, providing orientation activities for new students, parents, and staff, organizing activities for improving student, staff, and parent motivation, involving children, parents, and teachers in school administration, involving parents in the educational processes, ensuring confidentiality of private information about children, parents, and staff, detecting and registering children for school who do not have an official civil registry, and ensuring children's school attendance.

In the domain of teaching and learning processes: Identifying children's characteristics, needs for learning, and interests, providing in-class activities compatible with the needs and characteristics of children and curriculum, using educational materials to support children's learning and encourage their participation in activities, supporting the education of children with special needs, planning assessment and evaluation activities considering the aims of curriculum and children's individual characteristics, and using the results to support children's development, increasing opportunities for social, art and culture activities in schools and encourage children's participation in these activities, providing guidance and counseling services for children, enriching physical space to support children's learning and development, having equipment compatible with the standards of General Directorate of Basic Education, improving education via cooperation with community, sharing the resources of school and integrating with community to help its improvement.

In the domain of support services: Having a safe environment in school and community, having plans for emergency situations, providing psychological and social support for children, taking precautions for risk factors in school and nearby community, providing preventive health services, providing healthy food for children in schools, and providing healthy cleaning services.

As part of the quality standards, MoNE (2008) also determined the professional qualifications for early childhood teachers. Early childhood teacher qualifications in Turkey involve the following seven domains: (a) developmental areas, (b) communication with parents, (c) parent involvement and parent education, (d) evaluation, (e) communication, (f) creativity and aesthetics, (g) cooperation with school and community, and (h) professional development. Considering the performance indicators in these areas, a good early childhood teacher in Turkey, as defined by the Ministry, can plan, organize classroom environment, select and use materials, and practice activities to support the development of children. Especially, in learning process, it is expected that early childhood teachers can create a positive and democratic classroom climate, adjust their teaching to the needs and interests of children, and provide children with opportunities through which they learn by doing as they search, explore, solve problems, critically think, and make decisions. Correspondingly, it is expected that early childhood teachers have skills in the following domains: active listening, empathy, self-expression, using information technologies, creativity, problem-solving, cooperation, and self-evaluation.

Regarding the status of quality in early childhood education in Turkey, there are pieces of evidence that indicate the contribution of programs to child development. For example, Turkish Enrichment Project that was carried out between 1982-1986 by Kagitcibasi, Sunar, and Bekman examined the influence of different type of care settings (i.e., educational, custodial, home) and mother training on children's development in the context of Turkey longitudinally. One key finding of this project was that children from deprived backgrounds benefited most from educational care settings rather than custodial or home settings (Kagitcibasi, 1991). Thus, Kagitcibasi argued that the existence of institutions is inadequate to deliver the promises of early childhood education in closing the gap of inequalities if they adapt a custodial orientation in dealing with children. When children whose mothers were trained and not trained compared in this study, the enrichment of home environments had far-reaching impacts on the development of children especially at custodial or home care setting in Turkey. This finding implies that

it may be much more important for children from low-income families in Turkey to have access to educational care settings if their home environments are not enriched via the training of their mothers.

In a more recent study, Erkan and Kırca (2010) showed that first-grade children who had preschool education had higher scores from school readiness test compared to their peers who did not have any preschool experience. It was also indicated that children who attended preschool classes had better mathematics skills (Polat Unutkan, 2007), and also creative thinking skills (Can Yaşar & Aral, 2009) than children without any preschool experience. Kılıç (2008) studied the impact of preschool education on children's development based on the reports of first-grade teachers. The first-grade teachers in this study reported that children who had preschool attendance were significantly different from their peers who did not in a range of different domains including reading and writing, mathematics, self-care, motor development, social and emotional development, and language development. In the study by Özbek (2003), according to first grade teachers, children who had preschool education were socially more successful; for example, in relation to maintaining a new relation, working in a group, coping with stress, solving problems, and maintaining self-control than children who did not have any preschool education experience.

The aforementioned outcome-based evidence are considered encouraging for making positive judgments about the quality of early childhood education in Turkey. However, there are much more studies that identify the issues that need to be resolved for quality improvement in early childhood education services. Indeed, early childhood education is a developing field in Turkey, according to Gören Niron (2013). She stated that despite improvements in having access to early childhood education and care centers, the rate of schooling in early childhood is still low and the opportunities for access are unequal across socio-economic backgrounds in Turkey. According to Eurydice and Eurostat Report (2014), Turkey, the country with the largest population of children under the age of 6 relative to its total population (9.9%; approximately 7.5 million) among the European

Union (EU) countries by 2013, had the lowest participation rate in early education for children between the age of 4 and the starting age of compulsory schooling by 2011, namely overall 43% and specifically 4.2% for 3 year-old children, 19.2% for 4 year-old children, and 67.3% for 5 year-old children. This is considered a low level of school attainment considering that it is on average 93% in EU-28. What is more, children from well-educated parents are approximately 20% more likely to participate in early childhood education and care services than those from poorly educated families in Turkey. This gap is 7% on average in EU-28. Furthermore, according to this report, it is remarkable that early childhood education at least for the last pre-primary year is compulsory in most European countries except seven countries, one of which is Turkey. These discouraging statistics about early childhood education in Turkey may be explained by the fact that it has the lowest level of direct public investment per child in Europe, similar to four other countries including Bulgaria, the Czech Republic, Romania, and Slovakia.

The World Bank (2013) depicted the current state of early childhood education and care policies in Turkey and outlined the directions for the expansion of services and their improvement. Interestingly, this report noticed that the public spending on education, health, and social protection is much more for citizens older than 45 years old than children from birth to 5 years old in Turkey, in contrast to a bulk of research that points out the profits of investing in young children. As a solution for some of the deficiencies that were captured in the national system, this report recommended that (a) funds should be targeted at provinces with low enrollment rates and disadvantaged groups, (b) the government should enforce national quality standards and form a system for monitoring their fulfillment, for instance, through school self-evaluations and school external evaluations and should assess children's gains as a result of early year services, (c) private sector and non-governmental organizations should share the responsibility for early childhood care and education services, and (d) the government should increase its funding for early childhood care and education services.

According to Kıldan (2010), Turkey has neglected quality in early childhood education recently. He noted that MoNE has compromised on quality for the purpose of increasing schooling rate in early childhood education. Baştürk and Işıkoğlu (2008) empirically investigated the level quality in a sample of twelve classrooms that served 5-6 years-old children via Early Childhood Environment Rating Scale (ECERS) and concluded that the level of quality was below the desirable threshold. They also indicated that the status of quality varied based on the type of school as classrooms in private schools had higher quality compared to classrooms in public schools. Güçhan Özgül (2011) also evaluated the quality via observations with ECERS in Balıkesir in 15 early childhood classrooms. This study similarly indicated that the level of quality in the observed classrooms was, in general, minimal. Especially, the classes scored lower in areas regarding furniture and display of works and motor activities in this study. Erbay and Ömeroğlu (2009) examined the quality of 86 classrooms in Konya regarding classroom space and furniture. This study showed that the quality of the physical environment was significantly lower in classrooms in public elementary schools than in classrooms in private schools and independent public preschools, while the physical environment was significantly better in preschool classes in private elementary schools. In relation to the quality of physical environment, Karaküçük (2008) also pointed to the differences among different type of classrooms in Sivas and demonstrated that the preschool classrooms in public elementary schools had lower quality physical environment compared to independent schools and daycare centers.

Sevimli-Celik, Kirazci, and Ince (2011) addressed the inadequacy of indoor and outdoor spaces and infrastructure in preschool classes in Turkey for movement activities. Olgan (2015) pointed to the problems that pertained to science teaching practices in Turkish early childhood education context. Her study revealed that scarce time was allocated for science teaching in early childhood education classrooms and when allocated, it was mostly limited to topics that pertained to life and health sciences. The interviews with teachers unmasked that they did not feel confident and prepared for teaching science in their classrooms. Kaya (2012) observed that there were problems in the implementation

of child-centered education in classrooms although early childhood teachers in this study reported that their practices were child-centered to a high degree. Erden (2010) demonstrated that there were problems related to curriculum implementation in early childhood education classrooms regarding student evaluation, physical facilities, planning science and mathematics activities, organizing field trips, and inclusion of children with special needs. Unlike many studies that focused on teacher perceptions about classroom practices, Koçyiğit (2014) delved into the perceptions of 6-year old children about their education. His study underlined that children were more likely to refer to art activities and never talked about outdoor activities. Also, children in his study reported that their teachers decided all types of activities in their classrooms.

From the perspective of faculty in the field of early childhood education in Turkey, to improve the quality of early childhood education in Turkey, the budget for early childhood education needs to be increased, and the efforts should be directed to improving the quality of early childhood teacher training programs (Gürkan, 2005). This study pointed out that the most considerable problems in early childhood teacher training programs in Turkey include faculty shortage in programs and high course load of faculty. According to early childhood teachers in Turkey, teacher education programs were remarkably weak in providing opportunities for teacher candidates to practice (Gülmez-Dağ, 2012). Erdiller and McMullen (2003) revealed that physical conditions and resources, teacher-parent involvement, and status of teaching profession in society are the barriers to effective classroom practice in Turkey as perceived by the early childhood educators. According to Dilek (2013), preschool teachers perceived that it was partially feasible for them to practice the activities in curriculum and reported that they encountered problems in the implementation of activities because of the deficiencies in physical environment and class size.

The report of Mother Child Education Foundation and Education Reform Initiative (AÇEV, 2013) evaluated the quality of early childhood education on physical

environment, teachers, school administrators, and curriculum. The key findings of this report are summarized below:

1. The average teacher-child ratio is above the average ratio of OECD countries.
2. The average space available per child in classrooms and outdoor environments is lower than that of OECD countries.
3. Some teachers did not obtain their degrees in early childhood education from the faculties of education.
4. Based on the results of national teacher appointment exam (KPSS), early childhood teachers had lower scores on language, mathematics, and general knowledge compared to teachers in other areas.
5. Professional development activities did not respond well to the educational needs of in-service early childhood teachers such as teaching children whose mother language is not Turkish and preparing children for elementary education.
6. Some school administrators lack qualifications to monitor and lead early childhood education and view early childhood education as the income channel for their school.
7. There are concerns that curriculum goals are more appropriate for schools with a good physical environment.

This report also sheds light on the influence of 4 + 4 + 4 education reform on the quality of early childhood education in Turkey. Based on the data gathered from 23 teachers via focus group interviews and from 37 teachers via telephone interviews, it was concluded that physical environment of early childhood classrooms and classroom sizes need to be improved considering the needs of children as current children are younger than the children in previous years. Early childhood teachers stated that there were huge differences in children's development, and they encountered problems in responding to their various needs because early childhood classrooms are more likely to be mixed-age after the change. These teachers also noticed that the competencies defined in the curriculum on preparing children for elementary education seemed to be more appropriate to achieve for 60-72-month-old children rather than for 48-60-month-old children.

Strengthening Pre-School Education Project was launched by MoNE with the cooperation of UNICEF and EU for the improvement of national capacities for high quality care and education services in 2015 in Turkey. As part of this project, a comprehensive situational analysis report was published in 2011 on quality standards in preschool education in Turkey. This report indicated that legislations, national educational program, and general and specific competencies that were established for teachers prescribe several standards for early childhood care and education services in Turkey; nonetheless, they are considered inadequate to ensure quality in practice. This report recognized that the salient limitations of the current system of preschool education in Turkey regarding quality are the prime focus on structural aspects of quality, differences in standards amongst institutions, and lack of an effective audit system.

2.6. Teacher Beliefs

The study of teacher beliefs gained momentum in 1980s as a result of the shift of interest in educational research from the study of teacher behaviors to teacher cognition and constitutes an important aspect of research on teacher thinking (Fang, 1996). The dictionary definitions of belief are as follows: “a feeling that something is good, right, or valuable” (Merriam-Webster), “an acceptance that something exists or is true, especially one without proof” (Oxford Dictionary). As these definitions also imply, beliefs include affective and evaluative components and heavily rely on personal experience unlike knowledge (Nespor, 1987). Based on the synthesis of research, Pajares (1992) depicted the salient nature of beliefs as follows:

1. Individuals develop a belief system to hold different type of beliefs.
2. In a belief system, beliefs are connected to each other, and some beliefs called central beliefs are prioritized considering their connection to other beliefs.
3. Individuals tend to protect their beliefs. Some beliefs are less prone to change such as the beliefs that are integrated into the belief system earlier.

In this cognitive-oriented approach to teaching, teachers are no longer viewed as technicians to be programmed with necessary skills but considered as competent

professionals who make decisions (Borko, Cone, Russo, & Shavelson, 1979) as it is assumed teachers' thinking affects the way they behave (Clark & Yinger, 1979). Beliefs are the cognitive filters through which teachers make meaning (Smith, 1997) and guide teachers how to do things and how to see and interpret events in relation to their actions (Fenstermacher, 1994). Friesen and Butera (2012) showed that teachers' professional knowledge had limited role in their instructional decisions, while their personal and practical beliefs they formed on the job and through their cultural and individual experiences were more influential in their classroom practices. Consistently, Kagan (1992) underlined the influence of teacher beliefs on educational practice considering that teachers need their pedagogical beliefs to cope with the uncertainty and ambiguity embedded in teaching profession. She even claimed that the most of teachers' knowledge are their beliefs because there are not definite answers to various issues about teaching. Vartuli (1999) also noted that beliefs rather than professional knowledge of child development and learning are at the heart of interactive decisions that teachers make in times of stress, uncertainty, and classroom tensions.

Yet in their model on teacher's thought processes and actions, Clark and Peterson (1984) noted that teachers' actions may not always be consistent with their beliefs because of the constraints by physical setting or some external influences related to school, administrator, community, or curriculum. That is, teachers may not behave as they intend to do because they are deprived of the opportunities, or they may constrain their own thinking and believe that they do not have any power to make decisions for their actions. As Shavelson and Stern (1981) stated, teacher behaviors are a function of their cognitive processes, and also some antecedent conditions such as information about students, nature of instructional task, classroom/school environment can also determine their behaviors.

Pajares (1992) underlined that teachers hold different types of educational beliefs such as beliefs about teacher's capabilities to affect students' learning (teacher efficacy), about the nature of knowledge (epistemological beliefs), about the reasons of student and teacher

success (attributions, locus of control), or about specific subjects and disciplines (reading instruction, whole language). The present study focuses on teachers' beliefs about teaching and also their efficacy beliefs. Following sections introduce a review of literature on these two domains of teacher beliefs.

2.6.1. Beliefs about teaching

Bird, Anderson, Sullivan, and Swidler (1993) stated that beliefs about schooling and teaching pertain to the aspects perceived to be important for teaching, empirical claims about teaching and learning, prescriptive guidelines for teaching, or educational values. Bruner (1996) introduced to the notion of folk pedagogy to refer to a variety of beliefs about children and children's learning about the world. Calderhead and Robson (1991) conceptualized the beliefs about teaching as a part of teacher knowledge about teaching, while Weinstein (1990) used the term conceptions to refer to pre-service teachers' beliefs about being a good teacher. Feiman-Nemser and Floden (1984) introduced the notion of cultures of teaching that manifests teacher beliefs about appropriate ways of action on job, rewarding aspects of teaching, practical knowledge of teaching, and the norms of interaction with students, other teachers, school administrators, and parents.

Beliefs, the propositions pre-service and in-service teachers accept to be true, come from their personal experiences, schooling experiences, and also experiences with formal knowledge (Richardson, 1996). As teachers value a variety of beliefs about teaching, these beliefs need to be known and considered in planning instruction in teacher education programs and professional development experiences (Fives & Buehl, 2008). For example, Nespor (1987) warned about teaching teachers with different orientations using same methods and expecting similar results from them. Bruner (1996) stated that teachers' beliefs need to be taken into account while introducing innovation in education because new pedagogies may compete with existing theories of teachers that guide their behaviors. As teacher candidates form and maintain strong beliefs about the role of education, students' potential for academic achievement, and about rights and wrongs in

a classroom, it is warranted that teacher educators address any beliefs that intervene in teacher candidates' learning of new ideas about teaching (Raths, 2001). Joram and Gabriele (1998), however, noted that changing the beliefs about learning and teaching are challenging because everyday experiences such as observing other teachers, personal experience of teaching, or media presentations of teaching frequently reinforce them and moreover, it is hard to provide convincing corrective feedback in the context of education.

2.6.1.1. Nature of beliefs about teaching in early childhood education

According to Cassidy and Lawrence (2000), it is a component of professional practice that early childhood teachers form a coherent set of beliefs about their way of education and articulate rationales for them. Even before starting teaching, Lin, Gorrell, and Silvern (2001) illustrated that pre-service early childhood teachers develop a range of beliefs about their roles as teachers, classroom practices, children's learning, reasons for schooling, children's needs, and the relationship between teachers and children. Researchers have examined early childhood teachers' beliefs in a variety of areas including children's literacy development (Lim & Torr, 2007; Lynch, 2009; McLachlan, Carvalho, de Lautour, & Kumar, 2006; Yoo, 2005), working with children with cultural and linguistic diversity (Han, 2009; Lee, Butler, & Tippins, 2007), inclusion (Smith & Smith, 2000; Zoniou- Sideri & Vlachou, 2006), family involvement (Baum & McMurray-Schwarz, 2004), gender roles (Cahill & Adams, 1997), early math teaching (Chen, McCray, Adams, & Leow, 2014), singing and musicality (Swain & Bodkin-Allen, 2014), the role of preschool education in society (Hsueh & Barton, 2005), pedagogical uses of information communication technologies in early childhood classrooms (Angeli, 2004), facilitating creativity in children (Cheung, 2012), multiage grouping (Edwards, Blaise, & Hammer, 2009), and readiness (Hatcher, Nuner, & Paulsel, 2012).

One specific area that has been extensively studied is and to what extent early childhood teachers agree with two contrasting views about learning of young children, namely

teacher beliefs about child-centered orientation and behaviorist academics/basic skills-based orientation (Smith, 1992; Stipek & Byler, 1997). As Stipek and Byler mentioned, in child-centered approaches, the underpinning belief is that children learn better when they confront and solve problems via first-hand experiences and using concrete materials. On the other side, in basic skills orientation, repetition, reinforcement, sequence, and structured teacher activities are considered essential elements of children's learning. Hatch and Freeman (1988) indicated that the majority of kindergarten teachers did not believe that highly structured and academics and skills-oriented programs based on direct instruction model are good for children although they work in such behavioristic programs. In this study, 66.7% of the teachers reported beliefs that was aligned with maturationist and interactionist views, which underlined the significance of biological change and first-hand interaction with environment for children's learning rather than behaviorism. Rusher, McGrevin, and Lambiotte (1992) also revealed that kindergarten teachers were more likely to disagree with an academic focus in early childhood education, but they tended to favor child-centered practices. Early childhood teachers endorsed that preschool children should be allowed to choose their activities and direct their play and learn on their own, as reported by Lee (2006). In this study, teachers also stated that preschool education should be fun and engaging for children, focus on nurturing social, emotional, and physical wellbeing of children instead of academic learning, and be based on children's interests and everyday lives. In the context of Israel, kindergarten teachers similarly believed that programs should focus on promoting social-emotional wellbeing of children and general learning skills, rather than academic achievement; however, they thought that parents and decision-makers did not agree with this orientation (Sverdlov, Aram, & Levin, 2014).

Piotrkowski, Botsko, and Matthews (2001) also demonstrated that kindergarten teachers reported that being interested and engaged is considerably more important than having basic knowledge (e.g., knowing basic body parts, and some colors) to be ready for school. Very similarly, a sample of kindergarten teachers in the study by Lin, Lawrence, and Gorrell (2003) considered the social aspects of learning related to self-regulation such as

telling wants and thoughts, following instructions, nondestructive behaviors, and taking turns and shares more important than academic skills development for readiness for the school. In another study, both parents and teachers reported that preschools should give priority to social connections, problem-solving, and self-regulation (Hatcher et al., 2012). Kowalski, Pretti-Frontczak, and Johnson (2001) also found out that preschool teachers valued children's mastery of social-emotional skills and abilities more important than their mastery of traditional academic content such as writing letters or numbers. Although this finding might be interpreted to be compatible with developmentally appropriate approach, Kowalski et al. (2001) were doubtful that preschool teachers might have missed opportunities for children's development of emergent math and literacy skills, essential for their later learning of math and reading because of their primer focus on social-emotional aspects of child development.

As part of this discussion, while talking about early childhood teachers' beliefs about teaching, it is noteworthy to mention teachers' beliefs about developmentally appropriate practices with young children that are defined by NAEYC in the light of research on child development and learning and our knowledge about educational effectiveness. The overemphasis on rote learning and whole group instruction of academics and the undervaluation of play and child-initiated activities and projects in early childhood programs pulled the trigger for this movement (Bredekamp, 1997). In essence, Copple and Bredekamp (2009) posited that practices in early childhood education are developmentally appropriate if they are suited to children's age and development status, individual interests and needs, and their social and cultural context. In this approach, they underlined that practices are not easy rather challenging to enable children to make progress. As a response to the misinterpretation of the guideline for developmentally appropriate practices as a fixed answer, Bredekamp (1997) calls the field to move from either/or thinking to both/and thinking and to make decisions about the appropriateness of practices considering multiple perspectives and specifics of each context and individual. Developmentally appropriate practices mainly support child-initiated and

hands-on activities and also even teacher-directed instruction if it will meet the individual needs of children (Buchanan, Burts, Bidner, White, & Charlesworth, 1998).

There is an accumulated body of knowledge in literature regarding early childhood educators' beliefs about the notion of developmentally appropriate practices. Kim (2011) demonstrated that pre-service early childhood teachers in a university in the USA possess strong beliefs about developmentally appropriate practices. Charlesworth et al. (1993) also noted that most kindergarten teachers agreed with the importance of developmentally appropriate practices to an extent though they might not always practice activities consistent with these beliefs. McMullen et al. (2005) showed that early childhood teachers from five different countries including China, Korea, Taiwan, Turkey, and the USA similarly agreed with the importance of developmentally appropriate practices such as integration across curriculum, focus on social-emotional development, learning with concrete and hands-on materials, and provision of play/choice. Hegde and Cassidy (2009) also demonstrated that early childhood teachers tended to support developmentally appropriate beliefs in India. Hegde, Sugita, Crane-Mitchell, and Averett (2014) also noted that teachers' beliefs espoused developmentally appropriate practices in Japan. In this qualitative inquiry, Japanese teachers underlined that play is learning for children and physical and social development of children are of greatest significance. They viewed their roles as teachers to be observers, facilitators and role models. In the context of Jordan, Abu-Jaber, Al-Shawareb, and Gheith, (2010) documented that kindergarten teachers' beliefs were more likely to lean toward developmentally appropriate practices; however, their beliefs were less developmentally appropriate in the domains of reciprocal relationships with families and teaching to enhance development and learning.

2.6.1.2. Sources of beliefs about teaching in early childhood education

Literature has pointed to several factors that may influence what teachers believe to be important in early childhood education. For example, whether teachers work in a nursery

school or in a kindergarten (Hegde et al., 2014) and the age of children (Lim, 2010) may have a role in shaping the beliefs of early childhood teachers. Being a parent or a teacher, and being a preschool teacher or a kindergarten teacher explained the variation in the beliefs about readiness in the study by Piotrkowski et al. (2001). Lin et al. (2003) reported that teachers from West regions compared to teachers from South regions of the USA valued academic orientation less in kindergarten for school readiness. Rusher et al. (1992) showed that kindergarten teachers and school principals in suburban school districts, in comparison to educators employed in urban and rural districts, disagreed more with academic orientation in early childhood education, and teachers' beliefs were different from male principals' beliefs in some aspects concerning what constitutes the best practice in early childhood education. Teachers who work with children from economically disadvantaged backgrounds valued basic skills acquisition more than teachers who work with middle-class children (Stipek & Byler, 1997). Sverdlov et al. (2014) noted that working in either religious or state sector and either high or low socioeconomic schools did not influence the beliefs of kindergarten teachers; however, a pre-determined curriculum that was imposed on them appeared to transform their former beliefs partly.

In the study by Lim and Torr (2007), Singaporean early childhood teachers identified professional courses as the most significant source that shaped their beliefs about literacy development in early childhood. Cassidy, Buell, Pugh-Hoese, and Russell (1995) demonstrated that education could change the beliefs of teachers. In this study, early childhood teachers with high school degrees who completed at least 12 to 20 credit hour of a community college coursework that was based on methods and child-related courses reported significantly more developmentally beliefs at the end of their education than their colleagues who did not attend college classes. Yoo (2005) recognized that teachers' education level and also their experience with whole language approach in their programs influenced their beliefs about children's literacy development. Angeli (2004) showed that pre-service early childhood teachers formed more positive beliefs about the integration of information communication technologies into classroom practices partly

as a result of their participation in a course that was based on case-based learning. Trepanier-Street, Adler, and Taylor (2007) noticed that the beliefs of pre-service teachers became more child-centered and constructivist and less skills-based as a result of their participation in a yearlong specific mentoring training that had constructivist underpinnings and ongoing support for their weekly field experience. However, schools are often viewed as places shifting liberal progressive beliefs of pre-service teachers to undesirable traditional perspectives, Zeichner and Tabachnick (1981) noted that it might be wrong to assume that teacher education programs cultivate progressive and liberal beliefs in the minds of pre-service teachers.

Heisner and Lederberg (2011) indicated early childhood educators who completed Child Development Associate training obtained higher scores on developmentally appropriate beliefs and practices scale. Pre-service teacher education rather than teacher candidates' institutional socialization process via student teaching placement appeared to shape the beliefs of early childhood teachers, according to Smith (1997). In the study by Vartuli (1999), having a certification in early childhood education and being less experienced were associated with having developmentally appropriate beliefs. McMullen and Alat (2002) indicated that teachers' endorsement of developmentally appropriate beliefs increased as their level of education increased, regardless of their area of specialization. In the study by Brownlee and Chak (2007), in a teacher education program, teacher candidates changed their beliefs about children's learning as a result of their field experience and adopted active understanding in children's learning more strongly.

Cassidy and Lawrence (2000) noticed that the effect of experience was much important to preschool teachers' beliefs than the effect of their formal education. In this study, 62.5% of the influences teachers reported were related to either their experience as teachers or personal experience with their children and family; nonetheless, only two out of 32 cited influences were about what they have learned about teaching in formal educational settings. Kim (2011) showed that pre-service teachers' beliefs became more developmentally appropriate as they moved along a teacher education program and had

more field experiences. Gilbert (2009) noted that pre-service early childhood teachers who favored constructivist science education abandoned their beliefs for a more traditional approach to science education after their field experience. Early childhood teachers' years of experience were associated with their beliefs about language and literacy instruction in the study by Hindman and Wasik (2008). In this study, more experienced teachers reported higher agreement with evidence-based ideas about language development. In the study by Lin and Bates (2010), teachers modified their beliefs about teaching and diversity in part due to the home visits they made. After home visits, preschool teachers reported more positive views about children and their parents.

Teacher beliefs may also vary by culture. Clarke-Stewart et al. (2006) figured out that Korean preschool teachers, consistent with Asian values, had more traditional beliefs toward educational practices than their American counterparts. In the study by McMullen et al. (2005), early childhood teachers from the USA had a stronger endorsement of developmentally appropriate beliefs and practices than did teachers from China, Korea, Taiwan, and Turkey. Rothbaum, Nagaoka, and Ponte (2006) also figured out the difference in the beliefs of early childhood teachers from the USA and Japan with respect to the notion of sensitiveness. This study showed that American teachers valued children's self-expression of their needs and children's depending on themselves, while Japanese teachers emphasized children's dependence on their teachers and teachers' role in anticipating children's needs.

2.6.1.3. Relationship between beliefs about teaching and classroom practices in early childhood education

Abbott-Shim, Lambert, and McCarty (2000) revealed that educational level of caregivers had a direct influence on inappropriate beliefs that influenced the level of classroom quality in Head Start programs via instructional practices. Notably, they concluded that educational experiences for pre-service or in-service teachers should attempt to make their beliefs more appropriate to enhance the quality of educational practices in early

childhood care and education classes. Bryant et al. (1991) showed that quality was not linked with the location of centers, school size, expenditure per pupil, and teacher or principal education and experience; however, teachers' and principals' developmentally appropriate beliefs significantly predicted the level of global quality in kindergartens as measured by Early Childhood Environment Rating Scale. Zinsler, Shewark, Denham, and Curby (2014) unveiled the link between teacher beliefs and the quality of emotional support in classrooms. This study provided evidence that teachers who provided high quality emotional support in their classrooms were different from teachers who provided a moderate level of emotional support in their beliefs about social-emotional learning and socialization practices and strategies and their role as teachers in supporting children's socialization. Highly supportive teachers tended to value social-emotional learning more and viewed it as an essential part of their daily curriculum.

Marcon (1999) examined if preschool children's outcomes varied in classrooms with teachers who endorse with child-initiated beliefs, academically directed beliefs, and beliefs that fell in between these two approaches. The comparisons between three models indicated that children's measured gains were better in classrooms where teachers had a coherent theory about children's learning and development, either child-initiated or academically directed beliefs, than those in classrooms with teachers with mixed beliefs about two approaches. Notably, children in classes of teachers with child-initiated beliefs mastered more basic skills than did children whose teachers endorsed academically directed beliefs in this study. Moreover, there were no evidence that academically directed beliefs hinder children's development although preschool children in these classrooms had lower scores than expected in receptive and expressive language skills, personal and interpersonal relationship skills, and gross motor skills. Marcon (2000) also showed that the benefits of child-initiated early childhood education models lasted to middle childhood grades, while children who had didactic academically focused early learning experiences demonstrated the greatest decline in their scores on standardized measures especially between the third and six grades. Marcon (2002), moreover, noted that children with early learning experiences that combined academically oriented and

child-initiated models caught up their peers from either of these two approaches by the end of their fifth year in school.

Salminen, Hännikäinen, Poikonen, and Rasku-Puttonen (2013) showed that early childhood teachers' educational goals that influenced what they did in their classrooms were associated with the level of quality in their classroom in Finland. For instance, the teacher with the lowest level of quality for instructional support rated educational goals for factual knowledge, language, and conceptual skills less valuable, while the teacher with the highest score for quality of concept development reported practicing counting numbers and operations with numbers ten times more frequently compared to their counterparts. Shivers, Howes, Wishard, and Ritchie (2004) examined how early childhood teachers' beliefs about families influence their practices. This study illustrated that teachers who viewed parents as deficient were more likely to establish positive interactions with children in their classrooms. However, the teachers who viewed parents as partners practiced more language play with children and creative activities. Shivers et al. (2004) argued that these differences might be because that teachers attempted to compensate for what they felt to be missing at children's homes as a reflection of their beliefs about parents. In Korea, Kwon (2004) argued that the discrepancy found between the cultural beliefs and the beliefs embedded in the national curriculum largely explained why the new curriculum was not implemented in classrooms. Li, Wang, and Wong (2011) similarly revealed that early childhood curriculum reform in China that is based on progressive Western ideology was not practiced in classrooms as expected because it is at odds with core beliefs that characterize Chinese culture and society.

Moreover, after controlling for the effect of some key structural indicators such as education, ratio, and experience, Hughes-Belding et al. (2012) indicated that providers' beliefs predicted the quality of family child care. Specifically, family care providers who adhered to modern child-centered beliefs about child rearing more than traditional authoritarian beliefs provided children with higher quality care, similar to the findings

of Pianta et al. (2005) who demonstrated that classroom quality was lower when teachers have more traditional views about adult-child interactions. In the study by Justice et al. (2008), while preschool teachers' field of study, years of experience, and also characteristics of children in their classrooms and the type of curriculum they implement did not count for the quality of their language instruction, the quality of their literacy instruction improved when they had a higher sense of self-efficacy and had more adult-centered ideas about child rearing. Barbarin, Downer, Odom, and Head (2010) showed that child-centered beliefs of teachers, in addition to the promotion of child autonomy and demonstration of warmth and support at school, were associated with children's higher scores on some school readiness indicators. In this study, the match of beliefs between preschool teachers and parents predicted positive outcomes only when they were child-centered but not authoritarian beliefs. Furthermore, the influence of parents' beliefs, either child-centered or authoritarian, was stronger than the impact of preschool teachers' beliefs on children's gains.

Wing (1989) depicted how teacher beliefs in the domain of reading and writing varied in a Montessori and Constructivist school and acted in practice. In this study, preschool teachers' beliefs that reflected the philosophical orientation they adapted influenced their instructional decisions and what they did in their classrooms. Perhaps more importantly, these practices made an impact on the conceptions of children about reading and writing. Ihmeideh (2009) found a moderate relationship between kindergarten teachers' beliefs about the use of computer technology and their self-reported practices, while this relationship was especially stronger in the case of kindergarten teachers employed in private schools. Wilcox-Herzog and Ward (2004) also pointed to the consistency between teacher beliefs and stated practices. This study specifically indicated that teachers who believed more strongly in the importance of sensitive and involved interactions with children were at the same time more likely to report that they intended to form such interactions with their students in the classrooms.

Stipek and Byler (1997) as well revealed that beliefs of early childhood teachers were significantly related to what they did in their classrooms. In this study, it was observed that preschool and kindergarten teachers' practices were less basic-skills oriented when they embraced child-centered beliefs. Stipek and Byler (2004) in another study also showed that early childhood teachers in child-centered classrooms valued higher order thinking more and basic skills less as a goal; in contrast, developing basic skills was a more important goal for teachers in didactic classrooms. Moreover, consistent with their practices, teachers in teacher-directed classrooms perceived children as incapable of directing their own learning. McMullen et al. (2006) showed the relationship between teacher beliefs and practices by examining data from survey instruments, classroom observations, curriculum materials, and program artifacts. The findings in their study indicated that early childhood teachers had a higher endorsement of developmentally appropriate practices when their classroom activities emphasized child-directed choice/play time, emergent literacy and language development. However, teacher beliefs were more traditional when teacher practices were characterized with consistent routines, organized classrooms, preplanned curriculum, and teacher-directed learning.

Charlesworth et al. (1993), moreover, found out that kindergarten teachers' developmentally appropriate beliefs were moderately associated with their self-reported developmentally appropriate practices (.53), while this relationship was somehow stronger between developmentally inappropriate beliefs and stated developmentally inappropriate practices (.66). McMullen et al. (2005) revealed that there were small to moderate correlations between developmentally appropriate beliefs and self-reported practices of early childhood teachers from China, Korea, Taiwan, Turkey, and the USA. These significant positive correlations were .69 for the USA, .61 for Taiwan, .47 for Korea, .41 for Turkey, and .31 for China. Heisner and Lederberg (2011) reported a stronger correlation between developmentally appropriate beliefs and self-reported practices ranging from .64 to .87. Vartuli (1999) found out a moderate relationship between self-reported developmentally appropriate beliefs and practices. In this study, classroom observations validated the congruence between self-reported beliefs and practices.

Nonetheless, it was evident that beliefs were more appropriate than self-reported and observed practices at preschools, kindergartens, and primary grade levels. Teachers' beliefs about developmentally appropriate and inappropriate practices explained 11% of the variance in the observed practices of teachers after controlling for the effect of some key classroom and teacher characteristics (e.g., grade, class size, education level, years of experience) in the study by Maxwell, McWilliam, Hemmeter, Ault, and Schuster (2002). McMullen (1999) also indicated that teachers' developmentally appropriate beliefs predicted observed developmentally practices in their classrooms in a sample of 20 educators including both preschool and primary grade teachers and this was a strong relationship (.79).

Teachers are likely to practice what they believe to be important in early childhood education, albeit not always (Blay & Ireson, 2009). In this qualitative inquiry, all four preschool teachers valued that children take the ownership of their activity and teachers promote the independent learning of children. However, the observations of their cooking activities revealed that some preschool teachers' actual practices were in contradiction with these stated beliefs. Wilcox-Herzog (2002) also uncovered that there was not a relationship between teacher beliefs about teacher-child interaction and their observed practices. Wen et al. (2011) similarly found a weak or non-existing relationship between early childhood teachers' curriculum beliefs and their observed practices. In this study, it was observed that teacher-child interactions were dominantly teacher-directed; however, the teachers reported a strong endorsement of child-initiated learning beliefs. Kim, Kim, and Maslak (2005) also showed that there was a discrepancy between developmentally beliefs and practices of Korean early childhood teachers. In this study, 45 of 211 (21.3%) kindergarten teachers and 26 of 208 (12.5%) child care teachers reported practices that were consistent with developmentally appropriate belief. McCarty, Abbott-Shim, and Lambert (2001) showed that there was not any significant difference among teachers in low, medium and high quality classrooms as regards their support for appropriate beliefs and practices although teachers in low-quality Head Start programs espoused inappropriate beliefs and practices more strongly.

McMullen et al. (2006) reported that when there is a congruence between teacher beliefs and observed practices, teacher beliefs are usually more appropriate or progressive than their actions. In the study by Hegde and Cassidy (2009), although there was a relatively strong correlation (.51) between Indian early childhood teachers' developmentally appropriate beliefs and their stated practices, their beliefs were not significantly related to their observed practices (.29). They concluded that teacher beliefs were the most developmentally appropriate variable, which was followed by teachers' stated practices and observed practices. Cheung (2012) similarly pointed out the discrepancy between what Hong Kong early childhood teachers believed to be important about facilitating creative development in children and what they actually did in their classrooms. In this study, it was observed that teachers were at the center and provided explanations and instructions and emphasized factual knowledge and control more than creativity; however, they advocated that children needed inspiring environments to explore, express, and interact, and be exposed to open-ended questions to nurture creativity in them.

Foote, Smith, and Ellis (2004) argued that the inconsistency observed between preschool teachers' beliefs about literacy instruction and their practices might be because their prior learning experiences as children rather than their professional knowledge have shaped their views. Gilbert (2009) figured out that prospective teachers were more likely to act on the basis of traditional approach to teaching although they adopted inquiry-based approaches because they were worried about control, time, and national standards. In the study by Wilcox-Herzog (2002), preschool teachers were not able to act on the basis of their beliefs mostly because of parents, directors, state regulations, and sometimes because of children and themselves. That is, the discrepancy between teacher beliefs and actions may not be necessarily because of an internal mismatch between thinking behaving. It might be due to external constraints or measurement errors or because teachers may not feel free to practice them.

Also, Cheung (2012) argued that there were more misalignments than alignments between early childhood teachers' beliefs about good creative practice and actual practices in the context of Hong Kong because they have to cover planned activities in a short period and have not experienced how those beliefs are transformed to practice in their former schooling years as students and in their teacher education programs as pre-service teachers. Wen et al. (2011), moreover, noticed that teacher beliefs and practices were more congruent when teachers were more experienced and had more professional training. Thus, they concluded that "a refined and more important question to ask might be when, how, for whom, and under what conditions are teachers' beliefs and practices consistent?" (p. 962). Wilcox-Herzog (2002), for example, highlighted that teacher behaviors would be consistent with their beliefs if their beliefs were in-depth and embedded in a strong theoretical background. The study by Nelson (2000) similarly showed that teachers could overcome barriers in their environment and act consistent with their beliefs if these beliefs were adequately strong.

2.6.2. Efficacy beliefs

According to Bandura (1977), a self-efficacy expectancy is "the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 193). As they are the judgments about capability, they are about "can do" but not necessarily "will do" (Bandura, 2006). Bandura (2006) noted that an individual could not be efficacious in all things. That is, the system of self-efficacy beliefs is not a global trait rather a set of beliefs that are related to different aspects of functioning. Thus, it is important to address the particular domains of functioning while making a judgment about one's level of self-efficacy. Maddux and Volkmann (2010) asserted that self-efficacy beliefs are not considered as a personal trait because they are not decontextualized from situations. Instead, they are the beliefs about what we can do with our competencies under certain contexts and conditions and can be tailored to different type of behaviors. Also, self-efficacy beliefs are distinct from some related constructs such as self-concept, perceived control, and outcome expectancies because these cognitive self-beliefs address

performance capabilities of individuals in a more task-specific way, and thus more likely to be influenced by experience and task and situation context (Zimmerman, 2000). Moreover, Woolfolk Hoy and Spero (2005) pointed out that self-efficacy beliefs are about perceived capabilities but not actual competence, rooted in the assumption that underestimation or overestimation of actual abilities would determine the consequences by influencing individuals' actions and efforts. In this respect, they are considered self-fulfilling prophecies that validate perceptions about capability or incapability (Tschannen-Moran & Woolfolk Hoy, 2007).

Bandura (1977) distinguished expectations for personal efficacy from outcome expectancies, highlighting that individuals may believe that a particular type of behavior would lead to certain outcomes; however, they may still be doubtful of their capability to perform necessary behaviors for this end. In other words, the difference is that they may not engage in an activity because they believe that they cannot execute required behaviors or because they believe that the behaviors they can perform will not produce any positive outcome or not influence the environment. Thus, improving the competencies and expectancies for personal effectiveness will enhance efficacy-based beliefs, whereas improving the instrumental value of personal competencies will alter outcome-based beliefs. Figure 1 illustrates the difference between efficacy expectancy and outcome expectancy.

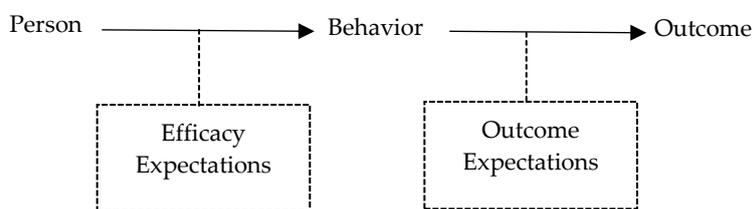


Figure 1. Difference between efficacy and outcome expectations (Bandura, 1977).

Bandura (1993) introduced four major processes through which perceived self-efficacy exerts its influence on human feelings, thinking, motivation, and actions. These are cognitive, motivational, affective, and selection processes. First, self-efficacy beliefs affect

cognitive processes via personal goal setting. Individuals with a high sense of efficacy often visualize success scenarios rather than fight with self-doubt. They set challenging goals for themselves instead of avoiding difficult tasks. Second, perceived self-efficacy influences cognitive motivation by mechanisms of casual attributions, outcome expectancies, and cognized goals. Individuals with high self-efficacy attribute their failures to insufficient effort rather than low ability. These goals are valued on the expectation that they will produce certain outcomes. Efficacious individuals give direction to their behaviors to fulfill these aims and persist in their efforts until they achieve self-satisfaction from fulfilling valued goals. As strong perseverance usually brings about success, individuals with high self-efficacy set higher goals to be mastered in future. Third, self-efficacy beliefs influence human functioning by their influence on affective processes. Individuals with low self-efficacy feel that they cannot exercise control over threats and inevitably experience high anxiety arousal. As they concentrate on their coping deficiencies, many aspects of the environment are considered threatening, a leading cause of distress and depression, which is followed by a low level of performance even if they have required knowledge and skills. Fourth and last, beliefs of personal efficacy affect the selective processes by shaping the choices of individuals. Individuals select activities and situations that they believe that they can handle. These choices indeed give direction to personal development of individuals and determine their life course. Individuals with high self-efficacy tend to consider more career options and better prepare themselves to be powerful and successful in their occupational pursuits. Bandura (1977), furthermore, argued that personal efficacy beliefs significantly predict an individual's choice of activities, coping behavior, efforts, and persistence when confronted with obstacles and adverse situations. He asserted that persons are likely to avoid a situation if they have a belief that it exceeds their coping skills, the condition of low self-efficacy. In contrast, they will be active in their efforts if they have a high level of personal efficacy. Indeed, self-efficacy perceptions, accurate or wrong, mediate the relationship between knowledge and action by influencing individuals' behaviors and motivation (Bandura, 1982). Even if people know what to do, if they have a low level of self-efficacy, they can behave ineffectively. The causal tests confirmed that self-efficacy

beliefs were positively associated with performance accomplishment and negatively related to emotional arousal (Bandura, 1982).

2.6.2.1. Teacher efficacy beliefs

“Teacher efficacy is the teacher’s belief in his or her ability to organize and execute courses of action required to accomplish a specific teaching task in a particular context” (Tschannen-Moran et al., 1998, p. 233). Tschannen-Moran et al. (1998) depicted that individuals judge their personal strengths such as skills, knowledge, strategies or personal traits against their personal weaknesses in the context of a particular teaching task while assessing their self-beliefs about their competence in teaching. The same term was used to define and measure different aspects efficacy such as a sense of political power within a school, the feelings of responsibility for student successes or failures, sense of academic futility, general educational philosophy, and beliefs regarding the power to influence students (Woolfolk & Hoy, 1990).

As our knowledge about the role of teachers and teaching capabilities have changed over years, there have been shifts in the definition of teacher self-efficacy, which led to the need to develop new measures to assess teacher self-efficacy beliefs more effectively (Chan, 2008). As documented by Tschannen-Moran and Woolfolk Hoy (2001), these measures were mainly distinguished from each other with their focus on locus of control, outcome expectancy or personal efficacy, and also with their way of conceptualizing teacher self-efficacy for specific areas or for general tasks that pertain to good teaching across contexts, levels, and subjects. Apart from measuring self-efficacy for teaching as a whole, some specific domains for the study of teacher self-efficacy included but not limited to teachers’ science teaching efficacy (e.g., Riggs & Enochs, 1990), efficacy for teaching science as inquiry (e.g., Smolleck, Zembal-Saul, & Yoder, 2006), teachers’ computer self-efficacy (e.g., Teo, 2009), self-efficacy for teaching fundamental motor skills (e.g., Callea, Spittle, O’Meara, & Casey, 2008), self-efficacy to teach statistics (e.g., Harrell-Williams, Sorto, Pierce, Lesser, & Murphy, 2014), teaching engineering efficacy

(e.g., Yoon Yoon, Evans, & Strobel, 2014), efficacy for inclusive practices (e.g., Malinen, Savolainen, & Xu, 2012; Sharma, Loreman, & Forlin, 2011), efficacy beliefs for technology integration (e.g., Wang, Ertmer, & Newby, 2004), efficacy in deaf and blindness education (e.g., Hartmann, 2012), culturally responsive teaching self-efficacy (e.g., Siwatu, 2007), teachers' sense of efficacy for literacy instruction (e.g., Tschannen-Moran & Johnson, 2011), teachers' internet self-efficacy (e.g., Kao & Tsai, 2009), teacher efficacy beliefs for asthma care (e.g., Gau, & Hung, 2014), efficacy for web-based professional development (e.g., Kao, Tsai, & Shih, 2014), Web 2.0 tools integration self-efficacy (e.g., Pan, & Franklin, 2011) and teacher interpersonal self-efficacy (e.g., Brouwers & Tomic, 2001).

In the pioneering Rand Study, teacher self-efficacy beliefs were addressed with the following two items with a focus on teacher influence on students: "When it comes right down to it, a teacher really can't do much because most of the student's motivation and performance depends on his or her home environment" and "If I really try hard, I can get through to even the most difficult or unmotivated students" (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977). Guskey (1981) addressed the efficacy beliefs of teachers with a focus on the responsibility teachers assume for student achievement on the basis of the notion of locus of control. Specifically, the Responsibility for Student Achievement Questionnaire he developed assesses teacher beliefs on two dimensions, entitled *responsibility for student success* (e.g., If your students learn an idea quickly, is it (a) because you were successful in encouraging their learning efforts or (b) because your students are basically intelligent?) and *responsibility for student failure* (e.g., If a child does not do well in your class, would it probably be (a) because he did not work very hard or (b) because you did not provide the proper motivation for him?).

On the other side, Ashton, Buhr, and Crocker (1984) defined teacher self-efficacy beliefs in the domains of motivation, discipline, academic instruction, planning, evaluation, and work with parents. They provided teachers with vignettes to judge their capabilities (e.g., "You have prepared an important lesson that requires the use of a slide projector. Just after you have begun the lesson the projector breaks down. Because this is a short school

week with a full calendar, you cannot postpone this lesson. You must continue without the instructional aide. How effective would you be in presenting a worthwhile lesson in this situation?”), and required them to rate their level of efficacy in comparison to the performance of others (e.g., 1: much less effective than others; 4: as effective as other teachers; 7: much more effective than most teachers). Their analysis indicated that this norm-referenced measure of self-efficacy is a better measure of self-efficacy because self-referenced measures are considerably influenced by social desirability bias.

Bandura (2006) conceptualized teacher self-efficacy beliefs comprising of six domains including *efficacy to influence decision making* (e.g., “Express my views freely on important school matters”), *instructional self-efficacy* (e.g., “Get students to work well together”), *disciplinary self-efficacy* (e.g., “Control disruptive behavior in the classroom”), *efficacy to enlist parental involvement* (e.g., “Assist parents in helping their children do well in school”), *efficacy to enlist community involvement* (e.g., “Get businesses involved in working with the school”), *efficacy to create a positive school climate* (e.g., “Make students enjoy coming to school”). Moreover, given the limitations of previous scales, Tschannen-Moran and Woolfolk Hoy (2001) offered three new dimensions to define teacher self-efficacy beliefs. These are *efficacy for student engagement* (e.g., “How much can you do to help your students value learning?”), *efficacy for instructional strategies* (e.g., “How well can you implement alternative strategies in your classroom?”), and *efficacy for classroom management* (e.g., “How much can you do to get children to follow classroom rules?”).

Friedman and Kass (2002) captured that the scope of teachers’ self-efficacy beliefs in most of the studies have been limited to their perceived capabilities in the context of a classroom. They argued that this conceptualization needs to be expanded to include the organizational aspects of teaching profession given that a school is an organization, and a teacher is an organizational person. In this regard, the new measure they validated emphasized two domains of efficacy: classroom context and school context. In this new way of looking at efficacy, *classroom context* deals with the sense of professional efficacy

concerning teaching, educating, and motivating and interacting with students, while *school context* addresses teachers' efficacy beliefs about involving in school activities, participation in decision-making, and influencing school politics.

In the measurement model proposed by Gibson and Dembo (1984), teacher efficacy is defined by *personal teaching efficacy* and *general teaching efficacy*. Personal teaching efficacy refers to a teacher's belief that he or she has the skills and abilities to contribute to student learning (e.g., "If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him quickly."), while general teaching efficacy pertains to a teacher's belief about any teachers' ability to bring about student learning despite some external factors such as home environment and parental background (e.g., "The amount that a student can learn is primarily related to family background."). Guskey and Passaro (1994), however, contended that this personal teaching versus general teaching efficacy distinction indeed manifest internal versus external locus of control attribution of teachers. After revising items on the scale, for example, shifting from "When I really try, I can get through to most difficult students" to "Even when I really try, it is hard to get through to the difficult students"; or from "When teachers really try, they can get through to most difficult students" to "Even when they really try, it is hard for teachers to get through to the difficult students.", they found out that the construct was not anymore about teachers' perceptions of their abilities but referred to the beliefs about the influence of self and any teacher has or does not have on student learning even if they are not motivated or difficult.

Soodak and Podell (1996) also highlighted the difference between personal and general teaching efficacy as they maintained that "the belief that I can teach" is distinct from "the belief that student outcomes are due to my actions." These beliefs can influence teachers distinctly, for instance, in this study, experienced teachers had higher levels of personal efficacy than novice teachers; however, there was not any significant difference between them in the domain of outcome efficacy. Considering this difference and other likely differences, Soodak and Podell (1996) asserted that in enhancing efficacy beliefs of

teachers, any efforts should take into account if low self-efficacy is due to teacher beliefs about their capabilities or beliefs about the futility of their actions. Wertheim and Leyser (2002) consistently indicated the distinction between personal and general efficacy as personal teaching efficacy beliefs but not general teaching efficacy predicted student teachers' choices for differentiated instruction in their study. Additionally, Ghaith and Yaghi (1997) indicated that there was not a significant relationship between teachers' perception of their personal abilities and their perception about the impact of teaching profession to influence student learning. They, therefore, suggested that personal teaching efficacy and general teaching efficacy are two distinct dimensions of professional efficacy and be measured separately in studies. Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) contended that the current view of outcome expectancies limits the analysis of teaching tasks just to some adverse external circumstances such as uncooperative home environment or unmotivated students although one makes judgements about their capabilities in teaching in the light of their analysis of teaching tasks and resources and constraints in a particular teaching context (e.g., difficulty of the task, student motivation and ability, managerial issues, availability of materials, physical conditions of teaching environment). In this respect, they maintained that general teaching efficacy beliefs are not a good predictor of teacher self-efficacy beliefs, and what is more they do not fit into Bandura's definition of outcome expectancy (Woolfolk & Hoy, 1990).

2.6.2.2. Sources of teacher efficacy beliefs

Given the compelling evidence that teacher self-efficacy beliefs are associated with positive teacher behaviors and positive student outcomes, it is noteworthy to reveal the sources of these beliefs. Bandura (1977) postulated that individuals determine their level of self-efficacy based on diverse information. Performance/mastery accomplishments, vicarious experience, verbal persuasion, and physiological stress are the four principle sources of information that are likely to influence the cognitive processing of expectancies of personal efficacy as proposed by Bandura. Based on this postulation, it

can be hypothesized that individuals' sense of efficacy are likely to be enhanced if they experience personal successes, observe others successfully perform uneasy activities, hear others' suggestions that they can cope with those situations, and also do not experience high levels of negative emotional arousal such as fear, anxiety, and stress. Yet Bandura (1997) pointed out that performance/mastery accomplishments are the strongest source of personal efficacy as they provide an authentic experiential reference point for individuals to judge their competencies.

Building on Bandura's sources for self-efficacy, Gist and Mitchell (1992) offered a more complex model to explain the processes that account for self-efficacy beliefs of persons. According to Gist and Mitchell (1992), individuals determine their self-efficacy beliefs on the basis of three main processes, which involve the analysis of task requirements, attributional analysis of experiences, and analysis of personal and situational resources and constraints. They argued that people make judgments about their efficacy almost automatically for the tasks they are familiar with. However, they engage in more detailed analysis of the tasks and the personal and environmental resources when they confront with novel situations and also with situations important to them. Recalling on their past performance or other experiences such as modeling and persuasion, they make causal attributions with respect to ability, effort, luck, and task difficulty and make judgments about their future performance. During this process, individuals make use of a variety of internal and external clues. External determinants are not under the control of persons and pertain to the attributes of a task, complexity of tasks, and task environment, while individually controllable internal determinants refer to knowledge, skills, physical condition, personality, strategies, goals, interest, priorities, and mood. In this respect, this model underlines that there are multiple reasons for low and high self-efficacy. Especially, understanding of the reasons for low self-efficacy provides a direction to interventions in improving them.

In the light of Bronfenbrenner's ecological theory, Ashton, Webb, and Doda (1983) identified the sources that have a potential to influence self-efficacy perceptions of

teachers. In this model, at microsystem level, teacher self-efficacy beliefs can vary due to student type, class size, teachers' role definitions, and activity structure. At mesosystem level, school norms, collegial relations, decision-making structures, and the relationship with principals are considered potentially influential variables on the level of teacher self-efficacy, while the nature of school district and district level legislations are significant to self-efficacy beliefs at exosystem level. At the top layer of the ecology, cultural expectations regarding the role of education in society, and cultural beliefs about the nature of learner and the role of learners are considered having significant implications for teacher self-efficacy beliefs.

Ashton (1984) highlighted that teachers were not able to maintain a high level of efficacy because of isolation in schools, lack of collegial and administrative support, sense of powerlessness to influence decisions, and difficulty in assessing one's effectiveness as teachers. Meristo and Eisenschmidt (2014) similarly highlighted the significance of a positive and supportive school climate that was characterized by "We" spirit, a trusting relationship with students, a responsive environment to teachers' feelings and ideas for enhancing self-efficacy beliefs of novice teachers. Ross (1994) identified the major antecedents of teacher self-efficacy beliefs as personal attributes (e.g., gender, experience, causal attributions) and organizational characteristics (e.g., stress level in schools, school culture, school leadership). Namely, this review study demonstrated that higher personal efficacy was associated with being female, and attributing student success and failure to the factors within teacher control. Ross (1994) additionally noted that personal efficacy tends to increase by gaining professional experience, while years of experience negatively correlates with general teaching efficacy. Apart from these personal attributes, the review demonstrated that teacher efficacy was higher in elementary than middle and high schools and in schools that were characterized by students who were highly orderly, of high ability, and with a collaborative culture and responsive leadership. Guskey (1987) pointed to the influence of three context variables on teacher self-efficacy. These included performance outcome, student ability, and scope. Guskey (1987) mainly demonstrated that teachers expressed greater efficacy when the student outcome was

positive and when students involved were of high ability. Furthermore, teachers expressed significantly higher levels of personal efficacy when the results were about the group rather than a single student.

Teacher education constitutes one of the important sources of teacher self-efficacy beliefs. Studies have shown the enhancing influence of courses on teacher self-efficacy beliefs so far (e.g., Bergman & Morpew, 2015; Fahlman, Hall, & Gutuskey, 2013), and especially the impact of some special methods used in teacher education courses such as case-based instruction (Yoon et al., 2006), inquiry-based science teaching (Avery & Meyer, 2012), course with service-learning (Bernadowski, Perry, & Del Greco, 2013), and modeling of strategies (Gado, Ferguson, & van't Hooft, 2006) on teacher efficacy. Field experiences are one of several mechanisms through which teacher education programs exert its influence on self-efficacy perceptions of pre-service teachers. Knoblauch and Woolfolk Hoy (2008) revealed that pre-service teachers' efficacy beliefs significantly increased following student teaching experience. Moreover, this increase was valid for student teachers placed in both urban and rural schools. Additionally, this study indicated that there was a positive association between student teachers' sense of efficacy and their perception of the efficacy of their cooperating teachers. The contribution of cooperative teachers' efficacy beliefs to self-efficacy beliefs of student teachers underlined the significance of vicarious experiences and verbal persuasion for improving self-efficacy of pre-service teachers (Knoblauch & Woolfolk Hoy, 2008). In the study by Hamman et al. (2006), pre-service teachers reported higher levels of self-efficacy when they considered that their cooperating teachers offered higher levels of guidance to them during their field experience.

Moreover, experience in teaching has been associated with teacher self-efficacy beliefs in numerous studies in literature. Chan (2008) found out that among a group of pre-service and in-service teachers, more experienced teachers reported the highest level of self-efficacy for teaching; in contrast to the common expectation that pre-service or novice teachers would be more optimistic about their capabilities for teaching. Woolfolk Hoy

and Burke Spero (2005) indicated that pre-service teachers' level efficacy for teaching increased during teacher education programs and student teaching; however, it declined as they started the actual experience as teachers. Tschannen-Moran and Woolfook Hoy (2007) showed that novice teachers with 3 or fewer years of experience in teaching had lower self-efficacy in instructional strategies and classroom management compared to more experienced teaching. Moreover, they figured out that the sources that influenced their sense of efficacy were different for novice and experienced teachers. Namely, the contextual factors such as available resources and interpersonal support were more important for the self-efficacy beliefs of novice teachers than experienced teachers. Yeo, Ang, Chong, Huan, and Quek (2008) as well indicated the influence of experience on teacher efficacy beliefs as Singapore teachers who had more than fifteen years' experience in teaching were more confident in their abilities for instruction and student engagement compared to teachers with five years of experience and less. In the study of Klassen and Chiu (2010) with a sample of 1430 teachers from Canada, teachers' years of experience was an influential factor; however, unlike previous studies, it showed a non-linear correlation with teacher efficacy. The findings, namely, underlined that teachers' sense of efficacy for student engagement, instructional strategies, and classroom management increased from 0 to 23 years of experience but declined afterward.

Participation in professional development activities are also important for teacher efficacy beliefs. Sandholtz and Ringstaff (2014) reported that elementary teachers who participated in a 3-year long professional development program enhanced their self-efficacy beliefs for teaching science, and perhaps more important, the improvement in perceived efficacy beliefs was considerably associated with changes in the use of student-centered instructional practices as reported by teachers. A professional development program proposed by Posnanski (2002) also had a positive influence on improving participating teachers' personal efficacy for constructivist-based science teaching. The analysis of qualitative data revealed that these changes would be likely to modify teachers' future instruction in the expected direction. Duran, Ballone-Duran, Haney, and Beltyukova (2009) reported that a professional development program on inquiry-based

science teaching positively influenced the self-efficacy beliefs of K-3 teachers for inquiry-based science teaching. In an experimental study, the professional development program on standardized mathematics teaching developed by Ross and Bruce (2007) similarly improved the efficacy of six grade teachers significantly in the domain of classroom management. The study by Tschannen- Moran and McMaster (2009); however, indicated that the format of professional development programs influenced teacher self-efficacy beliefs distinctly. In this study, the professional development program that incorporated information and mastery experiences with follow-up coaching had the strongest effects on teacher self-efficacy beliefs for reading instruction, in comparison to other three formats including only information, information with modeling, and information with modeling and practice.

Culture may also influence how teachers evaluate their efficacy beliefs. Çakiroğlu, Çakiroğlu, and Boone (2005) indicated that there was a significant difference between self-efficacy beliefs of pre-service elementary teachers from Turkey and the USA for science teaching. The teacher candidates from the USA were more confident in their abilities to teach science than their peers from Turkey in this study. In another study, Cakiroglu (2008) also indicated that Turkish pre-service teachers had a stronger sense of belief that teaching can influence student learning compared to teacher candidates from the USA, while there was not any significant difference between them considering their level of personal mathematics teaching efficacy. Çakiroğlu et al. (2005) argued that this result might be in part due to differences in teacher education programs in two countries, and also pre-service teachers' conception of their future workplace. Vieluf, Kunter, and van de Vijver (2013) based on their analysis of data from 23 countries, moreover, demonstrated that teachers in each country form a set of beliefs about their capabilities; however, cross-cultural comparison of their self-efficacy scores could be misleading because cultural norms are likely to influence their self-presentation. For instance, moderation while judging capabilities was likely to be valued in cultures with a Confucian tradition. Therefore, their lower scores on self-efficacy measures could not

manifest that they felt less efficacious compared to their colleagues in more individualistic cultures but manifested the effect of cultural norms on self-presentation.

Student characteristics also matter in teachers' evaluation of their self-efficacy beliefs. Chong, Klassen, Huan, Wong, and Kates (2010) in the context of Asian middle schools, for instance, noted that students' prior achievement at the point of entry boosted self-efficacy beliefs of their teachers. They argued that teachers in high track schools were less likely to face problems with student engagement and classroom engagement. As they have better chance to focus on instruction, they set higher expectations for effective teaching, which reinforces their sense of efficacy. Yeo et al. (2008), moreover, demonstrated that Singapore teachers from secondary schools had higher levels of efficacy for classroom management and instructional strategies when they reported less conflict in their relationships with their low achieving students. Stipek (2012) pointed out that teachers reported a higher level of personal efficacy when their classrooms were composed of minority students to a greater extent independent of the support from parents and administrators, and poverty and achievement status of students. As Stipek (2012) argued, this result might indicate that teachers set lower expectations for students of minority backgrounds and may have perceived their influence as teachers on them to a greater extent.

2.6.2.3. Relationship between teacher efficacy beliefs and educational outcomes

“Teachers' self-efficacy is a little idea with big impact” (Tschannen-Moran & Woolfolk Hoy, 2007, p. 954). According to Ashton (1984), no other variable but teacher self-efficacy has shown a consistent relationship with student achievement. Berman et al. (1977) likewise put forward that teacher self-efficacy is a powerful variable as it influenced the achievement of project goals, student performance, teacher change, and the continuation of project methods and materials. These findings are not surprising because teacher self-efficacy beliefs affect teachers' persistence, efforts in teaching, their goals, level of aspiration, and resilience (Tschannen-Moran & Woolfolk Hoy, 2001).

Correspondingly, several studies have shown the differences between teachers with a high and low sense of efficacy in terms of their classroom practices. For example, in a study by Ashton et al. (1983), teachers with high efficacy beliefs were more likely to set high academic standards, focus on academic instruction, monitor students' on-task behavior, and establish a warm and supportive classroom environment than teachers with low self-efficacy beliefs about their capabilities. The teachers with low efficacy tended to use harsh control tactics and show bias toward high ability students. The review study of Ross (1994) based on the analysis of 88 studies published between 1973 and 1993 also indicated that teachers with a sense of high efficacy employed more challenging and arduous techniques in their teaching, were more willing to implement educational innovations, practiced more humanistic classroom management strategies to a greater extent, and tended to be more successful in students' mastery of educational goals. Gibson and Dembo (1984), moreover, observed that teachers with high efficacy were different from teachers with low efficacy in some aspects of teaching in their classroom practices that can yield variations in student achievement. In this study, they pointed out that efficacious teachers spent more time in small group instruction and for monitoring and seatwork. They were also less likely to provide feedback in the form of criticism when their students gave incorrect answers to their questions and supported them more persistently to reach correct answers, unlike low efficacy teachers. Based on data from OECD's Teaching and Learning International Survey, Vieluf, Kaplan, Klieme, and Bayer (2012), moreover, indicated that lower secondary education teachers with a higher level of self-efficacy for teaching had higher means on the self-reported practice of structured, enhancing, and student-oriented activities compared to teachers with a lower sense of self-efficacy. Chong et al. (2010) figured out that when teachers possessed a high sense of self- and collective efficacy for promoting student learning and instruction, the academic climate was more strongly characterized by high expectations, standards, and press from school administration, parents, and students for effective teaching and academic success.

Teacher efficacy beliefs that are likely determine how teachers act in their classrooms have been associated with a variety of student outcomes in literature. In a sample from

Kenya, Bagaka's (2011), for instance, indicated that mathematics teachers' perceptions of their abilities and competence positively influenced students' interest in mathematics. Also, in this study, teachers' efficacy beliefs had a negative relationship with gender gap with respect to students' confidence in mathematics. In the context of vocational education in the Netherlands, van Uden, Ritzen, and Pieters (2013) showed that self-efficacy beliefs of teachers predicted students' emotional and behavioral engagement reported by the teachers. This finding may imply that teachers with higher levels of efficacy felt more strongly that they could influence their students, and so reported higher levels of student engagement. Guo, Connor, Yang, Roehrig, and Morrison (2012) demonstrated that teacher self-efficacy beliefs were directly related to fifth-grade students' literacy achievement. In addition, they showed that teacher self-efficacy perceptions influenced student outcomes indirectly via their influence on teacher practices. Specifically, teachers with higher levels of self-efficacy provided better support for their students to learn than teachers with low self-efficacy as they were more responsive and warmer while interacting with their students. Ross (1992) reported that student achievement was higher in classrooms with history teachers who had a higher sense of personal teaching efficacy but not general teaching efficacy. In the context of a curriculum innovation, Pan (2014) illustrated that physical education teachers' self-efficacy beliefs considerably determined the learning process of their students by its direct positive effects on students' learning motivation and satisfaction, and learning atmosphere. In addition to these direct effects, a high sense of self-efficacy boosted student satisfaction from learning through its effects on learning motivation and learning atmosphere.

In addition to these influences on students, teacher self-efficacy beliefs have been linked to several outcomes that pertain to teachers. Montgomery and Miranda (2014) shed light into the association between teacher self-efficacy and teacher attitudes toward inclusive practices. Their findings indicated that teachers who had higher levels of self-efficacy for collaboration reported more positive sentiments, attitudes, and fewer concerns about the inclusion of students with developmental disabilities. Woolfolk and Hoy (1990) showed

that more efficacious prospective teachers possessed more humanistic beliefs about the control of students and felt more comfortable with their own control by bureaucracy, which is likely to manifest an optimistic and idealist view of teaching. In the study by Coladarci (1992), teachers with higher levels of personal and general efficacy reported higher levels of commitment to teaching profession. Teacher self-efficacy beliefs was the strongest predictor in this study in comparison to some key school-level characteristics including teacher-student ratio, climate, teacher salary, and teacher experience and sex.

Moreover, Vieluf et al. (2013) revealed that there was a positive correlation between teachers' level of self-efficacy and their level of job satisfaction independent of their culture. Skaalvik and Skaalvik (2010) with a sample of 2249 Norwegian teachers in elementary school and middle schools similarly showed that teachers with a higher level of self-efficacy had more job satisfaction in addition to having more positive relationships with parents and a lower level of burnout. Martin, Sass, and Schmitt (2012) revealed that self-efficacy beliefs of teachers for student engagement were related to their intent to stay in the profession. Specifically, they proposed that when teachers had lower levels of efficacy for student engagement, they showed more efforts to control instruction. This produced a lower sense of personal accomplishment and a higher level of emotional exhaustion, which led to lessened job satisfaction, and a stronger intent to leave the profession. Klassen and Chiu (2010) also showed that teacher efficacy beliefs had a positive relationship with job satisfaction. Teachers in this study had on average 3% more job satisfaction when they reported 10% more efficacy for classroom management and 10% more efficacy for instructional strategies. They also reported that high teacher efficacy was associated with lower levels of classroom stress. Schwarzer and Hallum (2008) noted that teacher self-efficacy predicted job stress, which in turn explained teacher burnout; however, this effect of teacher self-efficacy on teacher burnout was true for teachers below the age of 40. They concluded that teacher self-efficacy is a protective resource factor for teachers. With a sample of 1127 German teacher candidates, Dicke et al. (2014) demonstrated that self-efficacy beliefs predicted emotional exhaustion. In this study, prospective teachers with a low level of efficacy for classroom management were

more vulnerable to emotional exhaustion partly because the stressor classroom disturbances were more salient to the low efficacious teacher candidates.

Ghaith and Yaghi (1997) showed the link between teacher self-efficacy beliefs of teachers and their attitudes toward the implementation of a new instructional innovation. They indicated that teachers with higher levels of personal teaching efficacy indicated more positive attitudes toward the innovation as they perceived the new practice, namely cooperative learning model, to be more congruent with their practices, and more important and less difficult to implement than their less self-efficacious counterparts. Thus, Ghaith and Yaghi (1997) concluded that high self-efficacy is essential for the implementation of new instructional practices. Guskey (1988) similarly indicated that more efficacious teachers did not only like teaching more and expressed greater confidence in their teaching. They also believed more strongly that the new instructional tool, mastery learning in this case, was important, congruent with their practices, and easy to implement than less efficacious teachers. Wertheim and Leyser (2002) showed that a sample of Israeli pre-service teachers with a sense of higher personal efficacy showed a preference for a variety of instructional approaches which are responsive to the diverse needs of students to a greater extent, in addition to perceiving them to be more effective. In this manner, efficacious teachers could be more likely to foster the achievement of students in diverse and inclusive classrooms.

Enhancing teachers' self-efficacy beliefs, thus, constitutes one of the paths to educational improvement. However, assuming that improving teacher self-efficacy beliefs will improve educational practice may be misleading under some circumstances. Jamil, Downer, and Pianta (2012), for example, showed that there was not any significant relationship between observed quality of pre-service teachers' student teaching and their sense of self-efficacy for teaching. Tekkaya, Cakiroglu, and Ozkan (2004) reported that pre-service teachers from Turkey had high levels of efficacy for teaching science; however, the majority of these teachers held misconceptions about fundamental science concepts. Holzberger, Philipp, and Kunter (2014), moreover, indicated that high teacher

self-efficacy beliefs positively contributed to teachers' adoption of effective strategies in teacher-student relationship and classroom management only when there was a positive school environment that met their needs for autonomy, social relatedness, and a feeling of competence.

Maddux and Volkmann (2010), moreover, posited that if self-efficacy beliefs are too high and too strong, they can negatively influence human performance because individuals with unrealistically high self-efficacy beliefs may select unattainable goals and put their efforts in situations that do not pay off. Moreover, they argued that if strong self-efficacy beliefs are developed without effort and struggle rather than hard work, individuals may become satisfied with lower performance standards and diminish their efforts, which is a peril for efficient functioning. Wheatley (2002) also challenged the widespread assumption that high self-efficacy beliefs are important for educational effectiveness. Instead, he argued that efficacy doubts are beneficial for progressive educational reforms. According to Wheatley (2002), self-efficacy doubts can foster disequilibrium and generate change, lead to teacher reflection and motivation to learn, and can promote productive collaboration to cope with uncertainty embedded in the nature of democratic teaching. Also, it needs to be considered that teachers may not be effective because of their self-efficacy beliefs but become more efficacious due to their performance. For example, the longitudinal findings of Holzberger, Philipp, and Kunter (2013) pointed out that teachers' beliefs of about their capabilities changed over the course of school year. Especially, teachers who provided high quality instruction reported higher levels of self-efficacy in the subsequent school year.

While interpreting the weak or lack of correlation between teachers' self-efficacy beliefs and their performance, a caution is warranted because it is not always because that theory was wrong. Gist and Mitchell (1992) noted that self-efficacy beliefs might not predict performance because it is not measured appropriately and individuals may not judge their self-efficacy beliefs accurately. Klassen, Tze, Betts, and Gordon (2011) also argued that despite increased productivity in this strand of research, teacher efficacy studies have not

been able to fulfill its promises fully because of continuing problems in measurement and conceptualization of teacher self-efficacy and the dearth of diverse methodological approaches such as longitudinal, qualitative, and mixed methods design research. As part of the limitation of previous research, they also noted that studies have dominantly focused on the links between teacher self-efficacy and some other teacher or school-related factors instead of student outcomes. As studies have been mostly conducted with samples from the USA, it is important that teacher efficacy be explored in a wider cultural and national settings (Klassen et al., 2011).

2.6.2.4. Teacher efficacy beliefs in early childhood education

Kim and Kim (2010) noted that little is known about the self-efficacy beliefs of early childhood teachers because studies have focused on understanding kindergarten and upper-grade teachers' self-efficacy beliefs thus far. Vartuli (2005) similarly pointed to this gap in the literature; however, underlined that the existing body of information regarding the influence of teacher self-efficacy beliefs on elementary and middle school students' learning offers implications for early childhood education. Following section introduces the main findings of research on early childhood teacher efficacy beliefs.

Wertheim and Leyser (2002) showed that pre-service early childhood teachers had lower personal efficacy scores than students majoring in high school education. However, their scores on general teaching efficacy were greater, which indicated that they were more optimistic about the influence of teaching on children's development than their personal capabilities to teach them. Garvis and Pendergast (2011) especially delved into early childhood teachers' self-efficacy for arts education in a small sample from Austria. This study showed that early childhood teachers reported higher levels of efficacy in teaching English and Mathematics compared to teaching arts in the strands of dance, drama, music, and visual arts and media. Garvis (2012) further indicated that the low level of teacher efficacy for arts education was partly attributable to the negative experiences early

childhood teachers had in their practicum because of inadequate modeling of supervisor teachers.

Dunst and Bruder (2013) investigated the self-efficacy beliefs of early intervention and preschool teachers for inclusion. In this study, teachers were more positive about the influence of their practices than their abilities to perform specific tasks. Moreover, the findings pointed out that there was a positive association between teacher self-efficacy beliefs and the belief that their teacher education programs prepared them better to work with young children and their families. Derscheid, Kim, Zittel, Umoren, and Henry (2014) examined the self-efficacy beliefs of early childhood professionals toward healthy nutrition and physical activity practices in preschool classrooms considering teachers' critical role in fighting with obesity in early childhood. Although early childhood teachers overall reported relatively high levels of efficacy in this area, they felt less confident in the domain of community involvement such as educating parents about nutritious foods and physical activity, making health materials available to parents, and posting written menus for parents. Furthermore, their level of efficacy was higher when they reported higher levels of knowledge about nutrition and physical activity.

Bates, Latham, and Kim (2011) examined pre-service early childhood teachers' efficacy beliefs for teaching mathematics. Bates et al. (2011) indicated that pre-service teachers are generally confident in their mathematics ability and also their ability to teach mathematics. Moreover, there was a positive relationship between their mathematics self-efficacy and mathematics personal teaching efficacy. That is, prospective early childhood teachers who were more confident in their own mathematics abilities reported higher levels of efficacy in their capacity to teach mathematics although they were more not more confident in their ability to affect student outcomes. Uludag Bautista (2011) reported the results regarding the effect of a science methods course on self-efficacy beliefs of pre-service early childhood teachers. This course that offered pre-service teachers with enactive and vicarious experiences considerably improved their personal and general teaching efficacy in the domain of science.

In relation to the association between teacher self-efficacy beliefs to outcomes, Guo, Piasta, Justice and Kaderavek (2010) indicated that preschool teachers' self-efficacy beliefs were positive predictors of children's gains in print awareness. However, they also noticed that higher levels of teacher self-efficacy became a significant predictor of educational outcomes when there were higher levels of classroom quality. The authors argued that a high level of teacher self-efficacy might cause harm to children's achievements possibly because high expectations that efficacious teachers set could be perceived to be oppressive by children in the absence of classroom quality for emotional support. Chung, Marvin, and Churchill (2005), moreover, indicated that high preschool teacher efficacy boosted teacher-child relationships, a critical variable for children's outcomes. However, this study pointed that preschool teachers had lower levels of efficacy when they reported at least one child with special needs in their classrooms. This highlights that early childhood teachers feel less confident in meeting the needs of children with special developmental needs. Kim and Kim (2010) examined the self-efficacy of early childhood educators in South Korea in the four domains including efficacy to create positive social contexts and parental involvement, instructional efficacy, efficacy to enlist community involvement, and efficacy to influence decision-making. In this study, experience in teaching was positively associated with the instructional efficacy of early childhood teachers, while the age of children had a negative relationship with the efficacy for community involvement. Teachers' self-efficacy in all domains decreased when the adult-child ratio increased in the classrooms. Given the influence of self-efficacy on teacher behaviors and teaching, in this study, the climate was more positive in centers and teachers reported lower levels of depression when they reported a higher sense of self-efficacy.

Moreover, Guo, Justice, Sawyer, and Tompkins (2011) scrutinized the link between children's engagement and preschool teachers' self-efficacy beliefs in the U.S. This study indicated that in classrooms with preschool teachers with a higher level of self-efficacy, there was a greater level of observed child engagement in centers when the centers were characterized with high levels of staff collaboration. In this study, there was not any

significant influence of teaching experience and perceived influence in decision making on teachers' level of self-efficacy. Guo et al. (2011) especially concluded that working in supportive and autonomous environments, and teachers' mastery experiences via children's engagement boosted teachers' sense of efficacy. Cobanoglu and Capa-Aydin (2015) also highlighted the significance of teacher self-efficacy beliefs for educational practice. In this study, early childhood teachers reported a higher level of fidelity to a mandated constructivist curriculum when they reported a higher level of efficacy for student engagement and instructional strategies. This positive influence of teacher self-efficacy beliefs on the level of stated curriculum implementation was valid after controlling for the effect of class size, age of children, length and type of program, and the existence/nonexistence of a teacher aide in classrooms, experience in teaching, degree of education, and beliefs about teaching.

Literature also offers contradictory results considering the contribution of self-efficacy beliefs to educational processes and outcomes in early childhood education. Engstrand and Roll- Pettersson (2014) also did not find out a significant relationship between preschool teachers' attitude towards the inclusion of children with autism in regular classrooms and their level of self-efficacy. Guo, Dynia, Pelatti, and Justice (2014) also indicated that teacher self-efficacy beliefs of early childhood special education teachers' were not directly related to children's language and literacy gains. Perhaps more important, children exhibited greater gains when they were in classrooms with teachers who provided higher quality instructional support and had lower levels of self-efficacy. In this study, children's outcomes were lessened when teachers reported a high level of self-efficacy even if their classrooms were characterized with high quality for instructional support. Guo et al. (2014) argued that this unexpected result might be in part because early childhood special education teachers' who perceived themselves less capable were more motivated to improve their skills and knowledge compared to teachers with a high level of self-efficacy, in addition to some limitations that pertained to the measurement of teacher self-efficacy in this study.

2.6.3. Relationship between teachers' beliefs about teaching and teacher efficacy beliefs

Although the large-scale international study of OECD (2009) showed that there was not a relationship between teachers' beliefs about student learning and their level of self-efficacy, Ashton (1984) emphasized that teacher self-efficacy beliefs are related to the beliefs about learners and being a teacher. According to Ashton, some teacher beliefs, namely that intelligence and ability are stable traits or that teachers are not adequately powerful and so not responsible for student learning are serious barriers to increasing a sense of self-efficacy. Woolfolk, Rosoff, and Hoy (1990) studied the relationship between teacher self-efficacy beliefs and their beliefs about classroom management, student control, and student motivation. Teachers who were more confident in their instructional competence were less likely to support custodial pupil control. Also, higher levels of efficacy for overcoming the negative influence of home environment was associated less with the beliefs about custodial pupil control and more with the beliefs about encouraging student autonomy in problem-solving. Gencer and Cakiroglu (2007) showed that pre-service science teachers with high self-efficacy beliefs for science teaching were likely to adopt a less controlling orientation toward classroom management, while their beliefs about the management of instruction were more interventionist.

Jamil et al. (2012) examined the association between pre-service teachers' childrearing beliefs and their self-efficacy beliefs for teaching. They found out that more traditional and adult-directed beliefs had a negative relationship with their self-efficacy beliefs. In contrast, pre-service teachers who had more democratic and progressive ideas about children's learning were more confident in their abilities to be successful in their classrooms. In a sample of primary teachers, Muijs and Reynolds (2002) demonstrated that teacher self-efficacy beliefs had a significant relationship with connectionist beliefs about numeracy rather than transmission-oriented beliefs, which in turn affected student achievement. This finding implied that primary teachers with a higher level of teacher self-efficacy were more constructivist in their beliefs and supported that their students

should make connections to their prior knowledge and other areas of curriculum and apply their knowledge to new situations.

Ilgaz, Bülbül, and Çuhadar (2013) indicated that there was a significant association between personal teaching efficacy beliefs and educational philosophies of teacher candidates in Turkey. In this study, prospective teachers who more strongly endorsed modern philosophies based on the core assumption that knowledge is subjective and changing such as progressive, reconstructionist, and existentialism reported higher levels of personal teaching efficacy. However, the correlation was negative between general teaching efficacy and traditional educational philosophies such as perennialism and essentialism. Given the relation between beliefs about teaching and self-efficacy beliefs, Gürbüzürk and Şad (2009) demonstrated that constructivist beliefs had a positive relationship with efficacy for student engagement but not with efficacy for classroom management and instructional strategies, and not with the overall efficacy scale. On the other hand, traditional beliefs were positively associated with efficacy for classroom management and instructional strategies and with overall scale, albeit weakly. Cobanoğlu and Capa-Aydin (2012) indicated that early childhood teachers' self-efficacy beliefs were positively correlated with both traditional and constructivist beliefs about teaching. Cobanoğlu and Capa-Aydin (2015) also revealed that teacher self-efficacy beliefs moderate the relationship between teachers' beliefs about teaching and classroom practice. Specifically, this study indicated that the influence of early childhood teachers' endorsement of constructivist beliefs on the implementation of curriculum became non-significant when early childhood teachers reported a high sense of self-efficacy for instructional strategies.

2.7. Early Childhood Teacher Beliefs in Turkey

Erdiller (2013) found out that Turkish pre-service early childhood teachers from five universities in Ankara ($n = 507$) endorsed child-centered beliefs more than teacher-directed beliefs regardless of their grade level, type of high school they graduated from,

family income, and their parents' level of education. In this study, Turkish pre-service preschool teachers more strongly embraced the importance of observing children, responding to children's needs and interest, active learning, interacting positively with individual children, and children's planning and free choice of their work and play in early childhood education, while they agreed less with the use of worksheets and workbooks with children, teaching isolated subjects, teaching in whole groups activities, and children's doing and learning same things at the same time. In-service early childhood teachers also reported beliefs that were compatible with the notion of developmentally appropriate practices (Erdiller & McMullen, 2003). In-depth interviews with twelve preschool teachers in this study demonstrated that they viewed their roles as a guide and valued active learning of children in a supportive and stimulating environment, and shared decision making with children.

Demircan and Tantekin Erden (2015) also studied the beliefs of early childhood teachers about the notion of developmentally appropriate practice (DAP) in Turkey. The results of this study overall indicated that teachers were aware of the importance of DAP for children. The most important aspect of DAP for this sample of teachers was that teacher-child interaction support the development of self-esteem and positive attitudes toward learning. However, the teachers valued some developmentally inappropriate practices including using workbooks and ditto sheets in the educational process, talking to whole group, and doing same things at the same time. Demircan and Tantekin Erden (2015) argued that the teachers' support for these inappropriate practices might be a consequence of the academic pressure on students in Turkey.

Isikoglu, Basturk, and Karaca (2009) with a sample of 400 teachers from Denizli indicated that Turkish K-8 in-service teachers mainly espoused student-centered education. In this group of teachers from different subject areas, of note was that early childhood teachers had more positive ideas about student-centered teaching strategies in comparison to Turkish, Math, and Social Studies teachers. Polat, Kaya, and Akdag (2013) similarly found out that Turkish early childhood pre-service teachers' beliefs about discipline were more

humanistic than the beliefs of their counterparts in other programs. In this study, the rules and consequences orientation to discipline that is based on high teacher control and behaviorism was valued least by early childhood teachers. In the cross-cultural study by McMullen et al. (2005), 99% of the participating Turkish early childhood teachers reported that it is very/extremely important for teacher-pupil interactions in the classrooms to help develop children's self-esteem. However, they had lower scores than their American, Chinese, Korean, and Taiwanese colleagues in the following domains of developmentally appropriate beliefs: Teaching health/safety via a variety of activities throughout the school year (74.8%), learning through interaction with other children (71.7%), and integrating math with other curriculum areas (71.3%).

On the other side, the research in Turkey delved into different aspects of teacher self-efficacy including computer self-efficacy (e.g., Gulten, Yaman, Deringol, & Ozsari, 2011; Pamuk & Peker, 2009; Topkaya, 2010), efficacy perceptions for computer assisted education (e.g., Kutluca & Ekici, 2010), mathematical self-efficacy beliefs (e.g., Çakıroğlu & Işıksal, 2009; Isıksal, 2005), general self-efficacy (e.g., Şenel, Adiloğulları, & Ulucan, 2014), self-efficacy beliefs in science teaching (e.g., Akbaş & Çelikkaleli, 2006; Aydın & Boz, 2010; Berkant & Ekici, 2007; Gencer & Cakiroglu, 2007; Önen & Muşlu Kaygısız, 2013; Saracaloğlu & Yenice, 2009; Yaman & Yalçın, 2005), self-efficacy toward alternative assessment methods (e.g., Şaşmaz Oren, Ormancı, & Evrekli, 2011; Tatar & Buldur, 2013), self-efficacy beliefs towards the use of expository text as an instructional tool (e.g., Yildirim & Ates, 2012), efficacy for history teaching (e.g., Yilmaz, 2009), self-efficacy perceptions for teaching English (e.g., Yilmaz, 2011), efficacy for the use of information communication technologies (e.g., Bozdoğan & Özen, 2014), chemistry self-efficacy (e.g., Uzuntiryaki & Çapa Aydın, 2009), physical activity self-efficacy (e.g., Gencay, 2009), in addition to self-efficacy beliefs for teaching (e.g., Demirtaş, Cömert, & Özer, 2011; Gürbütürk & Şad, 2009; Ilgaz et al., 2013; Özdemir, 2008; Sandıkçı & Öncü, 2013; Tarkın & Uzuntiryaki, 2012; Topkaya & Yavu, 2011; Yenice, 2012). Yet it appears that research in Turkey have dominantly focused on the beliefs of pre-service elementary and secondary education teachers rather than early childhood teachers. Moreover, the

studies have mostly examined the nature and sources of teacher efficacy beliefs rather than the relationship between teacher efficacy beliefs and educational outcomes.

Among the studies with a focus on early childhood education, Kesicioğlu and Güven (2014) examined the relationship between pre-service early childhood teachers' self-efficacy beliefs for teaching and their problem solving, communication, and empathy skills. In this study, as pre-service early childhood teachers' efficacy for classroom management, student engagement, and instructional strategies increased, their skills in problem-solving, empathy and communication improved. Vural and Hamurcu (2008) studied the self-efficacy beliefs of pre-service early childhood teachers for science teaching. In this study, pre-service early childhood teachers reported moderately positive ideas about their abilities to teach science and about the influence of teaching on students' learning. However, the beliefs of junior teacher candidates were more positive compared to the freshmen. The qualitative data in this study, moreover, indicated that teachers' prior knowledge in science and relevant courses in teacher education programs were significant contributors to a high sense of self-efficacy for science teaching in early childhood education. Olgan, Güner Alpaslan, and Öztekin (2014) also examined pre-service teachers' efficacy beliefs regarding science teaching. The pre-service early childhood teachers in their study on average reported a moderate level of self-efficacy and outcome expectancy for science teaching. Moreover, early childhood teacher candidates' epistemological beliefs in the domain of justification of knowledge and self-efficacy beliefs for science teaching significantly predicted their beliefs about the influence of science teaching on science learning of children. Alaçam (2015) scrutinized pre-service early childhood teachers' general self-efficacy beliefs and their parent involvement efficacy beliefs. In her study, pre-service early childhood teachers' level of general self-efficacy beliefs were moderate, while they had a high sense of self-efficacy for parent involvement. Although there was not any significant influence of courses taken about parent involvement on teacher candidates' level of parent involvement self-efficacy, general self-efficacy beliefs significantly predicted their sense of self-efficacy for parent involvement.

Early childhood teachers in the study of Gmleksiz and Serhatlıođlu (2013) reported high levels of self-efficacy for teaching, and the level of teacher efficacy did not vary in terms of gender, experience, type of the school they work in, and the socio-economic status of students. Kotaman (2010) investigated the self-efficacy beliefs of both pre-service and in-service early childhood teachers for student engagement, classroom management, and instructional strategies. This study indicated that teachers and teacher candidates had reasonably a high sense of self-efficacy in all domains. Yet in-service early childhood teacher were more confident in their abilities than pre-service early childhood teachers. Kotaman (2010) argued that this points out the significance of experience in teaching for developing a higher sense of self-efficacy. Sarı, elikz, and Seer (2009) similarly showed that pre-service and in-service teachers had a high sense of efficacy for teaching in the domains of classroom management, student engagement, and instructional strategies, although in-service teachers were more confident in their teaching capabilities compared to teacher candidates. Also, there was a positive association between teachers' level of self-efficacy and their attitude towards inclusive education in this study. This relationship was not significant for the sample of pre-service early childhood teachers. Őenol and Ergn (2015) also compared the level of self-efficacy beliefs of pre-service and in-service early childhood teachers and indicated that teachers had a higher level of self-efficacy than teacher candidates in all domains of teaching (i.e., learning/teaching process, communication skills, arrangement of learning environment, classroom management) except parent involvement. Also, both early childhood teachers and teacher candidates had high levels of self-efficacy as their scores on average were beyond 4 on the 5-point response scale in this study. Moreover, early childhood teachers had higher levels of self-efficacy when they obtained an Associate degree rather than B.S. degree and had at least 16 years of experience in teaching in the study.

2.8. Summary of Literature Review

Quality in educational organizations can be defined in various ways depending on the percepts of various stakeholders including researchers, policy makers, teachers, parents,

and students. Although scholars with postmodernist perspectives have celebrated the diversity in the beliefs about what is good for young children, ones with modernist approaches have sought to set some standards for quality assurance in early childhood education programs mostly for research and evaluation purposes. Today, there are some guidelines on what constitutes high quality early childhood education based on the findings of quantitative and qualitative studies. Some of the components of good early childhood education, for instance, entail health and safety, positive relationships, stimulating learning environment, culturally, individually and age appropriate practices, educational and enriching activities, family and community involvement, affordability of and accessibility to services, staff training, teacher commitment, a reasonable level of wage for staff, development of children in all domains of development, and student and program assessment and evaluation. Teacher-child interaction, at the heart of the present study, is also among these indicators of educational quality because it has been linked to various child outcomes in literature thus far.

In judging classroom quality, researchers have mainly considered inputs or resources (structural criteria), children's actual experiences in classrooms (process criteria), and their gains (outcome criteria). Classroom observation has been the main medium of data collection in such studies and literature correspondingly offers many observation tools that can help researchers collect data about different aspects of classroom quality. So far, this line of research has contributed to our understanding about the level of quality in early childhood classrooms and the factors that were associated with classroom quality. Literature generally highlights that early childhood education programs are not of high quality in various countries and especially weak regarding teachers' instructional support. In addition to the problems that pertain to educational activities and processes, some studies have pointed to the issues regarding physical environment, materials, and parent involvement.

The review also reveals that there are many factors that can explain the variation in the level of quality across classrooms. Some of the predictors of classroom quality include

teacher wage, child-teacher ratio, class size, teachers' educational degree and specialization, age of children, teacher workload, experience in teaching, participation in professional development activities, teachers' level of stress, developmentally appropriate practices, goals of the programs, instructional methods of teachers, parent involvement, relationship between teachers and children, type of centers, and socio-economic status of parents. The present study especially investigates the interplay between teacher beliefs (i.e., beliefs about teaching, teacher efficacy beliefs) and classroom quality in early childhood education classrooms.

Literature on teacher beliefs has mainly informed us about the nature and sources of teacher beliefs, while it is worthy to mention that early childhood teacher beliefs have been studied relatively less and even there is not an available scale specifically designed to measure early childhood teachers' beliefs about their capabilities in the literature. In the field of early childhood education, studies on beliefs about teaching have mostly addressed to what extent early childhood teachers adopt child-centered and academics/basic skills oriented approaches to teaching, and also have examined their endorsement of the notion of developmentally appropriate practice. On the other side, studies on teacher self-efficacy beliefs have either investigated early childhood teachers' perceptions about their capabilities in specific areas such as art, inclusion, nutrition and physical activity, and mathematics or generally in teaching. In relation to the sources of early childhood teacher beliefs, literature has identified such influential factors as educational degree, courses, field experience, age of children, socio-economic status of parents, and culture. Of note is the studies that delve into the relationship between teacher beliefs and educational outcomes in this strand of research. This line of research can indeed expand our knowledge about effective teachers because research on teacher thinking has set forth that teachers' beliefs constitute an important aspect of professional identity of teachers and can guide their decisions and actions in classrooms. Consistent with this claim, several studies indicated that teachers' beliefs about teaching and their perceptions regarding their capabilities influenced their behaviors and results in educational practice. Still, some other studies figured out the incongruences between

teacher beliefs and educational practices and outcomes. Further studies are, thereby, considered highly critical to make sense of these contradicting results and to reach a more coherent understanding regarding the role of teacher beliefs in teacher effectiveness in literature.

CHAPTER 3

METHOD

This chapter presents the research design, sampling and participants, data collection tools, and the data analyses used in the study. A discussion on the limitations are also introduced at the end of this chapter.

3.1. Design

This is a mixed methods research, which was defined by Johnson, Onwuegbuzie, and Turner (2007) as the third major research paradigm that refers to the intellectual and practical synthesis based on quantitative and qualitative approaches. Although some scholars posit that quantitative and qualitative paradigms cannot be mixed because of their distinct way of defining science; however, mixed methods researchers adopt a pragmatic stance and attempt to take advantage of both methods to generate more complete answers for their research questions (Johnson & Onwuegbuzie, 2004). For mixed methods researchers, quantitative and qualitative methods are both useful, even when they appear to present contradictory results because it is assumed that the inconsistencies represent different perspectives that will enable one to fully gain insight into a phenomenon studied (Onwuegbuzie & Johnson, 2006). Mixed methods research can offset some limitations of quantitative and qualitative methods, produce more comprehensive and satisfactory evidence, and be a remedy for the adversarial polarization between quantitative and qualitative researchers by representing multiple worldviews (Creswell & Plano Clark, 2007).

An embedded mixed methods design was employed in the present study to address the interplay between teacher beliefs (i.e., teacher self-efficacy, general teaching efficacy,

beliefs about developmentally appropriate and inappropriate practices) and teacher practices. In embedded designs, one data set has a supplemental or secondary role within a design based on the other data type (Creswell & Plano Clark, 2007), which constitutes the core distinction between an embedded and triangulation design in mixed methods research (Yıldırım & Şimşek, 2013). In the current study, a qualitative component was embedded within a quantitative design to help explain the relationship between early childhood teachers' beliefs and their classroom practices. Given the framework of Greene, Caracelli, and Graham (1989), the qualitative data primarily have a complementarity purpose that seeks to elaborate, enhance, illustrate, and clarify some aspects of the quantitative results obtained in the study.

Specifically, the quantitative part of this study is a strand of associational research that examines the relationships between two or more variables without any manipulation (Fraenkel, Wallen, & Hyun, 2014). Both concurrent and predictive correlational designs were applied to examine the relationships between different dimensions of teacher beliefs and teacher-child interaction quality. On the other side, the qualitative study has a phenomenological design that seeks to understand the lived experiences of people about a phenomenon (Creswell, Hanson, Plano Clark, & Morales, 2007) and also an ethnographic design that attempts to portray the culture of a group (Creswell, 2013). Particularly, teachers with high and low classroom quality were interviewed to explore their beliefs about high quality early childhood education. Unstructured classroom observations were also carried out to describe classroom behaviors that characterize the teachers with different beliefs. Thereby, some comparisons were made among the teachers in relation to their beliefs and practices. Figure 2 displays the design of this study along with research methods and questions.

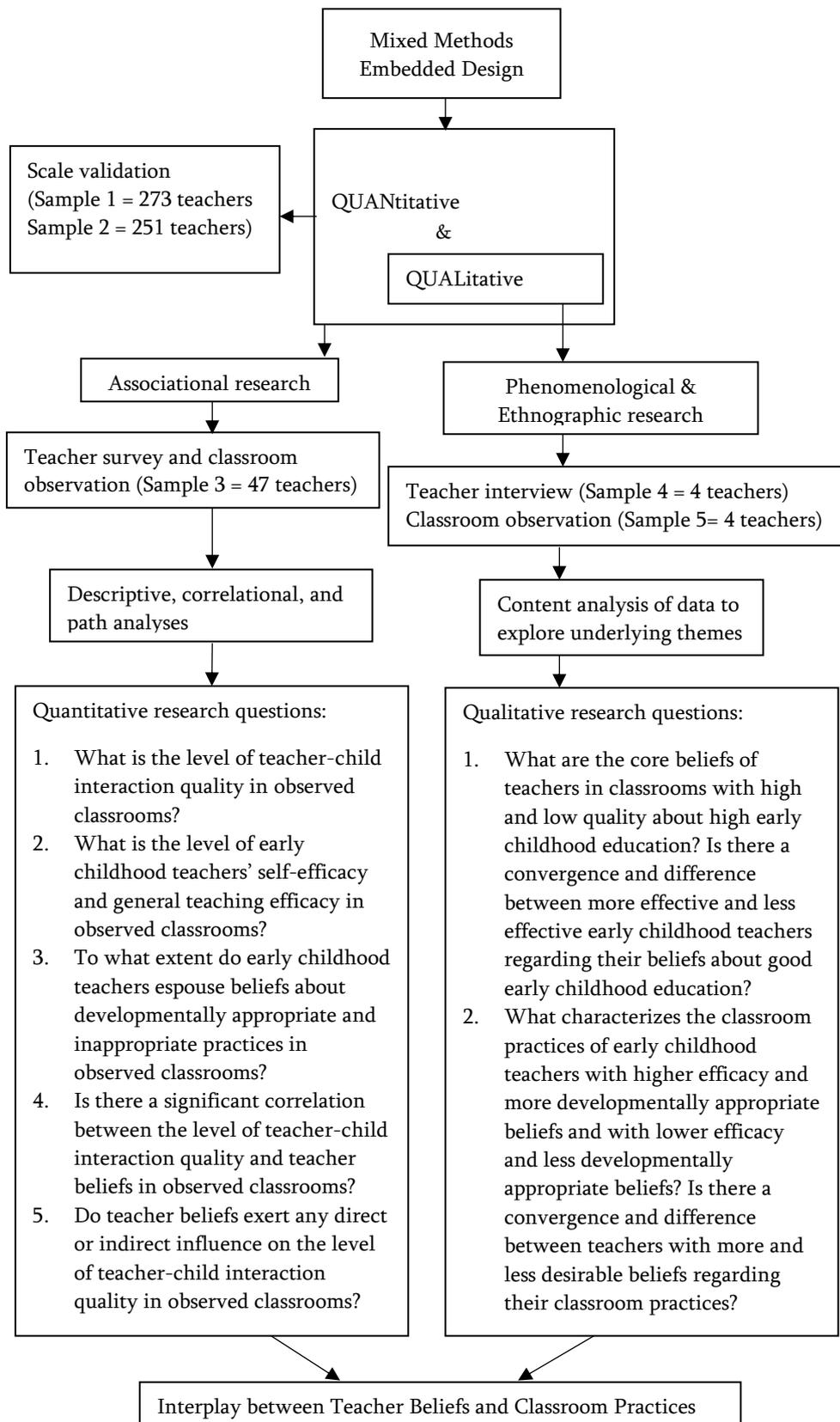


Figure 2. Design of the present study along with research methods and questions.

3.2. Sample

Five samples were involved in the study. Below sections introduce the purpose for which these samples were used, the method applied in the selection of the participants, and their general characteristics.

3.2.1. Sampling in the quantitative study

Three different samples were involved in the quantitative part of the current study. Sample 1 ($n = 273$) included the participants of the pilot study which was carried out to provide evidence for the validity and reliability of the scales that measured different aspects of teacher beliefs. Sample 2 ($n = 251$) was similarly used for test cross-validation purposes for the teacher beliefs scales. Sample 3 ($n = 47$) is a sub-sample of Sample 2 and constituted the main data set that included observation data. This sample was used for the validation of the structured observation tool that measured teacher-child interaction quality and the quantitative research questions in this study.

Sample 1 (For the pilot testing of the instrument): The instrument was initially tested with 273 early childhood teachers from 60 schools in Ankara, Turkey. The considerable proportion of the participating teachers ($n = 263$, 96.3%) was working in schools that function under the supervision of Ministry of National Education (MoNE). Only ten participants (3.7%) reported that their school is independent of MoNE. The schools were located in five different districts of Ankara including Altındağ, Çankaya, Etimesgut, Mamak, and Yenimahalle. The early childhood teachers in Yenimahalle responded to the instrument at the highest rate ($n = 130$, 47.6%), followed respectively by those in Çankaya ($n = 96$, 35.2%), Altındağ ($n = 25$, 9.2%), Etimesgut ($n = 21$, 7.7%), and Mamak ($n = 1$, 0.4%). Although these schools were mostly selected considering the convenience of transportation and the willingness of schools/teachers to participate in educational research, the efforts were made to represent different school contexts and teacher characteristics in this sample.

In the sample, 66.3% of the early childhood teachers ($n = 181$) were employed in private educational organizations, while 33.7% of them ($n = 92$) were public school teachers. Consistent with the general feature of the population, 99.6% of the participants were female. The sample involved teachers with various educational degrees. More than half of the participants ($n = 159$, 58.2%) had B.S. degrees obtained through formal education. There were also teachers with Associate degrees ($n = 36$, 13.2%), with M.S. degrees ($n = 20$, 7.3%), and with degrees from Open University ($n = 19$, 7%). Some of the teachers in private organizations did not have any form of higher education degree ($n = 33$, 12.1%), but they had high school diplomas mostly in the area of child development and education. The majority of the teachers ($n = 235$, 86.1%) obtained their educational degrees in areas related to early childhood education and child development. The length of the experience in teaching was on average nearly 11 years ($SD = 6.99$), ranging from 1 year to 31 years. The teachers were teaching in a classroom that involved 18 children ($SD = 4.19$) on average with a range between 5 and 27 children. More than half of the participants reported that their classrooms were mostly composed of children from families with a moderate level of income ($n = 148$, 54.2%), while the minority stated that they were teaching children with a low level of family income ($n = 17$, 6.2%).

Sample 2 (For the validation of the instrument): This sample involved 251 early childhood teachers employed in public schools in the central districts of Ankara, Turkey. In the sample, 78.1% of the teachers ($n = 196$) was employed in independent pre-primary schools, while 21.9% ($n = 55$) was working in the pre-primary classrooms of the elementary schools. The elementary schools were selected from four central districts of Ankara including Altındağ, Çankaya, Etimesgut, Sincan, and Yenimahalle, while the independent pre-primary schools, the main target group of the study, were selected randomly from the population of independent pre-primary schools in the eight central districts of Ankara (i.e., Altındağ, Çankaya, Etimesgut, Gölbaşı, Keçiören, Mamak, Yenimahalle, Sincan) to ensure the representation of teachers working in different regions. The sample overall represented teachers from 23 elementary schools and 39

independent pre-primary schools. Table 2 displays the distribution of teachers across districts and school types in Sample 2.

Table 2
Distribution of Sample 2 across Districts and School Types

District	Independent Pre-primary School		Elementary Schools	
	<i>n</i>	%	<i>n</i>	%
Altındağ	15	7.7	9	16.4
Çankaya	41	20.9	4	7.3
Etimesgut	43	21.9	8	14.5
Gölbaşı	8	4.1	-	-
Keçiören	21	10.7	-	-
Mamak	8	4.1	-	-
Sincan	36	18.4	18	32.7
Yenimahalle	24	12.2	16	29.1
Total	196	78.1	55	21.9

In this sample, the average years of experience in teaching were 11.09 ($SD=7.00$), ranging from 1 to 31 years. The number of children in the classrooms was between 6 and 26, and the mean class size was 18 children ($SD = 3.87$). The majority ($n = 191, 76.1\%$) was teaching in same-age rather than mixed-age classrooms ($n = 59, 23.5\%$). The most of the teachers were serving in classrooms only for five-year-old children ($n = 84, 33.5\%$), followed with the classrooms only for four-year-old children ($n = 53, 21.1\%$). The teachers were dominantly working in half-day programs ($n = 231, 92\%$). Nearly half of the participants ($n = 123, 49\%$) reported having a support personnel for their classrooms. Noticeably, 90% of the teachers ($n = 226$) had at least B.S. degrees, while 4% ($n = 10$) had Associate degrees and 5.2% ($n = 13$) had Open University degrees. Only five teachers (2%) reported that they obtained their degrees in an area that is not related to child development and education.

Sample 3 (For the validation of observation tool and answering quantitative research questions): This sample is a sub-sample of Sample 2 and involved 47 early childhood teachers whose classrooms were observed in the present study. The teachers were selected based on a cluster-random sampling of the schools. Among the population of 57

independent pre-primary schools in the eight central districts of Ankara, this sample represented 28 different schools, and so 49% of the school population. Of the classrooms observed, the most was located in Altındağ (19.1%, $n = 9$) and Çankaya (19.1%, $n = 9$), followed with the classrooms in Etimesgut (14.9%, $n = 7$), Sincan (12.8%, $n = 6$), Yenimahalle (12.8%, $n = 6$), Keçiören (8.5%, $n = 4$), Mamak (8.5%, $n = 4$), and Gölbaşı (4.3%, $n = 2$). The distribution of the observed classrooms by district and school is displayed in Table 3.

Table 3
Distribution of the Observed Classrooms by District and School

District	Observed Classroom	
	n	%
Altındağ	9	19.1
A1 School	2	4.3
A2 School	2	4.3
A3 School	1	2.1
A4 School	2	4.3
A5 School	2	4.3
Çankaya	9	19.1
C1 School	1	2.1
C2 School	2	4.3
C3 School	1	2.1
C4 School	2	4.3
C5 School	2	4.3
C6 School	1	2.1
Etimesgut	7	14.9
E1 School	2	4.3
E2 School	2	4.3
E3 School	1	2.1
E4 School	2	4.3
Gölbaşı	2	4.3
G1 School	2	4.3
Keçiören	4	8.5
K1 School	2	4.3
K2 School	2	4.3
Mamak	4	8.5
M1 School	2	4.3
M2 School	2	4.3
Sincan	6	12.8
S1 School	2	4.3
S2 School	2	4.3
S3 School	2	4.3
Yenimahalle	6	12.8
Y1 School	2	4.3
Y2 School	1	2.1
Y3 School	1	2.1
Y4 School	1	2.1
Y5 School	1	2.1

Table 4 summarizes the key features of the teachers observed in this study and some characteristics of their classrooms. The teachers in the observed classrooms were all female. By majority, they had B.S. degrees (89.4%, $n = 42$). Yet four teachers (8.5%) obtained their degrees from Open University and only one teacher (2.1%) obtained an Associate degree. All had a specialization in an area related to child development and education (83%, $n = 39$ for early childhood education; 10.6%, $n = 5$ for child development and education; 6.4%, $n = 3$ for kindergarten teaching).

Table 4
Salient Characteristics of the Observed Teachers and their Classrooms

Characteristic	<i>n</i>	%
Age group		
Same-age group	38	80.9
4	2	4.3
5	29	61.7
6	7	14.9
Mixed-age group	9	19.1
4-5	1	2.1
4-5-6	2	4.3
5-6	6	12.8
Educational degree		
Associate degree	1	2.1
Open University degree	4	8.5
B.S. degree	40	85.1
M.S. degree	2	4.3
Area of specialization		
Early Childhood Education	39	83
Child Development and Education	5	10.6
Kindergarten Teaching	3	6.4
Support personnel for the class		
Yes	16	34
No	31	66
Duration of the program		
Half-day	43	91.5
Full-day	4	8.5
	<i>M</i>	<i>SD</i>
Experience in teaching	10.94	6.42
Class size	19	3.33

The average years of experience in teaching were nearly 11 ($SD = 6.42$) for these teachers. Only five teachers (10.7%) had an experience less than five years. The number of children in their classrooms ranged from 13 to 26 and was on average 19 ($SD = 3.33$). The class size

was between 16 and 20 for 55.5% of the classrooms ($n = 26$). The majority was teaching in same-age classrooms (80.9%, $n = 38$) and in the classrooms only for 5-year old children (61.7%, $n = 29$). The majority of the teachers was working half-time (91.5%, $n = 43$) without the assistance of a support personnel (66%, $n = 31$).

3.2.2. Sampling in the qualitative study

Two different samples were used in the qualitative part of this study. Sample 4 ($n = 4$) was used to explore the beliefs of more and less effective early childhood teachers regarding high quality early childhood education. Sample 5 ($n = 4$) was used for the study of the classroom practices of early childhood teachers with more and less desirable beliefs. In both samples, the participants were selected purposefully for the study of information-rich cases in depth. Especially, the extreme case sampling method, which pertains to the study of unusual or special cases in same way (Patton, 2002), was employed in this study because the main purpose was to inquiry into how the phenomena under investigation manifested itself in special groups and to figure out the similarities and differences between them, if there were any. The more can be learned from the comparison of these special cases because they may illuminate both unusual and typical (Patton, 2002).

Sample 4 (For the study of teacher beliefs): The researcher asked some teachers whose interactions with children were observed to participate in interviews based on criterion sampling (Patton, 2002). The criterion was the observation of some notable successes and failures in their classrooms in the domains of emotional support, classroom organization, and instructional support such as lack of or existence of misbehaviors, positive or negative relationships between teacher and children and among children, productivity or unproductivity, enriching or non-educational activities. Overall twelve teachers volunteered to be interviewed. Sample 4 included four early childhood teachers that were selected purposefully from these teachers. Specifically, the two teachers with the highest total score from Classroom Assessment Scoring System (CLASS; Pianta et al., 2008) (Teacher A and Teacher B) and the two teachers with the lowest total score from CLASS

(Teacher C and Teacher D) were involved in sample 4. In this respect, these four teachers were considered informants to exemplify variety in teacher-child interaction quality. Specifically, Teacher A and Teacher B, the most effective two teachers who were interviewed, were the third and the fifth most effective teachers in the main sample of 47 teachers whose classrooms were observed. Their total CLASS scores were respectively 5.17 and 5.16, while the highest total CLASS score in the main sample was 5.64. Given the distribution of teacher-child interaction quality in the observed classrooms, they belonged to the best groups of classrooms that were characterized by emotional support at the high range, classroom organization at the high range, and instructional support at mid-range.

Teacher C and Teacher D, the least effective teachers who were interviewed, were ranked as the third and the fourth least effective teachers in the main sample. Their total CLASS scores were respectively 3.27 and 3.36, while the worst score obtained in the sample was 2.31. Considering the distribution of the teacher-child interaction quality in the observed classrooms, they belonged to the worst group of classrooms that was characterized by emotional support at mid-range, classroom organization at mid-range, and instructional support at low range. Table 5 displays the characteristics of the four teachers whose beliefs about high quality early childhood education were explored and compared.

Table 5
Characteristics of Sample 4

Variable	More Effective Teachers		Less Effective Teachers	
	Teacher A	Teacher B	Teacher C	Teacher D
Gender	Female	Female	Female	Female
Degree	B.S.	B.S.	B.S.	B.S.
Area	ECE*	ECE	CD*	ECE
Teaching experience	12 years	3 years	16 years	7 years
District	Etimesgut	Çankaya	Çankaya	Altındağ
Total CLASS score	5.17	5.16	3.27	3.36
Emotional support	6.17	5.73	3.60	3.08
Classroom organization	6.42	6.67	3.73	5.08
Instructional support	2.93	3.07	2.47	1.92
Self-efficacy for teaching	6.83	6.93	6.68	7.57

Note. *ECE: Early Childhood Education. CD: Child Development

These four female teachers were akin to each other regarding their educational background. All had a B.S. degree in an area related to child development and education. Although their level of experience in teaching varied, they similarly reported a positive perception regarding their abilities to fulfill their roles as early childhood teachers. They were working in four different public independent pre-primary schools located in three separate districts of Ankara, namely Etimesgut, Altındağ, and Çankaya. Based on the teacher reports, the majority of the children in these classrooms were from either middle or high-income families. The class sizes ranged from 16 to 20 children.

Sample 5 (For the study of classroom practices): This sample included four early childhood teachers selected purposefully from 47 teachers (Sample 3) who were observed in the current study. Specifically, two teachers (Teacher 1 and Teacher 2) who reported higher levels of efficacy and also had higher levels of support for developmentally appropriate practice (DAP) and two teachers who displayed lower levels of efficacy and also reported lower levels of support for DAP (Teacher 3 and Teacher 4) were included in Sample 5 for the qualitative analysis of the observation data. For this end, a new total efficacy score was calculated for each teacher by averaging their scores for self-efficacy for teaching and general teaching efficacy. Also, a total score for the support of DAP was computed by averaging the scores for all items on teacher beliefs survey.

The total efficacy scores of Teacher 1 and Teacher 2 were respectively 7 and 6.50, while they were 4.77 for Teacher 3 and 4.45 for Teacher 4. The total scores for the support of DAP were 4.58 and 4.39 for Teacher 1 and Teacher 2 respectively, whereas Teacher 3 had a score of 3.42 and Teacher had a score of 3.27. In this respect, these teachers were considered special and different given their level of efficacy and the extent of their support for DAP and represented two groups with more desirable and less desirable beliefs.

Table 6 summarizes the salient characteristics of the four teachers whose classrooms practices were analyzed qualitatively. Teacher 1 had an M.S. degree, while Teacher 2 and

Teacher 3 had B.S. degrees and Teacher 4 obtained an Associate degree in early childhood education. All teachers had at least 10 years of experience in teaching except Teacher 3, who has been teaching for 3 years. The teachers were from four different public independent pre-primary schools in three districts of Ankara including Çankaya, Yenimahalle, and Keçiören. The teachers were teaching either 5 years old or 6 years old children in the half-day programs.

Table 6
Characteristics of Sample 5

Variable	With more desirable beliefs		With less desirable beliefs	
	Teacher 1	Teacher 2	Teacher 3	Teacher 4
Gender	Female	Female	Female	Female
Degree	M.S.	B.S.	B.S.	Associate D.
Area	ECE	ECE	ECE	ECE
Teaching experience	10 years	21 years	3 years	29 years
District	Çankaya	Çankaya	Keçiören	Yenimahalle
Total efficacy score	7.00	6.50	4.77	4.45
Self-efficacy for teaching	8.00	8.00	6.14	5.57
General teaching efficacy	6.00	5.00	3.40	3.33
Total DAP score	4.58	4.39	3.42	3.27
Support for DAP	5.00	4.71	3.90	3.94
Support for DIP	2.00	2.07	3.37	3.67

3.3. Data Collection Tools in the Quantitative Study

The quantitative data were collected via structured classroom observation and teacher survey in the present study. In the structured classroom observations, Classroom Assessment Scoring System-pre-k version was used to measure the quality of teacher-child interactions in classrooms. In teacher survey, the following measures were administered to examine the different facets of early childhood teachers' beliefs: Teacher Beliefs Survey, Teacher Self-Efficacy Scale for Early Childhood Education, and Teacher Efficacy Scale. Following sections introduce these data collection measures used in the quantitative part of the study.

3.3.1. Classroom Assessment Scoring System (CLASS)

CLASS-pre-k version (Pianta et al., 2008) is an observation tool that measures the quality of teacher-child interactions in classrooms for 3 to 5 years old children. As explained in its manual, CLASS is based on extensive evidence from developmental theory and research and exclusively focuses on the interaction between teachers and students in the classrooms. In this framework, classroom interaction is viewed as the primer mechanism for student learning and development (Hamre et al., 2013). La Paro, Pianta, and Stuhlman (2004) stated that CLASS is different from other measures of quality in early childhood education because of its main focus on classroom processes rather than physical environment, curriculum, and materials while measuring quality. Unlike many other instruments in the field, it does not evaluate the presence of materials, physical environment, safety or the use of a specific curriculum. Pianta et al. (2008) stated that this distinction is important because, in many early childhood settings, materials and curriculum are already well-organized.

Existing research has associated teacher-child interaction quality as measured by CLASS with social and academic outcomes of children. As Downer, Sabol, and Hamre (2010) mentioned, emotional support mostly pertains to social-emotional outcomes, whereas classroom organization is more strongly linked with self-regulation and instructional support is closely tied to cognitive and language gains. Curby et al. (2009) demonstrated that children achieved more when the quality of teacher-child interactions was higher. Especially, emotional support predicted children's social competence, while instructional support in the domain of concept development led to the greatest academic achievement. Mashburn et al. (2008) provided evidence that children received higher scores from the five measures of academic and language skills when the quality of instructional interactions was higher. On the other hand, the quality of emotional support in this study was associated with social competence and behavioral problems. Also, Rimm-Kaufman, Curby, Grimm, Nathanson, and Brock (2009) indicated that children had greater control of their behaviors and cognition and were more engaged and on-task when the quality of

classroom organization was higher in their classrooms. Responsive teaching that involved a combination of indicators from emotional support, classroom organization, and instructional support predicted gains in early language and literacy skills, working memory and decreases in the level of teacher-child conflicts (Hamre et al., 2014). In the same study, emotional support and classroom management were related to children's increased growth in inhibitory control. In the study by Downer et al. (2012), there was a significant positive relationship between the level of emotional support in preschool-kindergarten programs and children's social competence and letter naming. Also, in this study, the quality of instructional support predicted children's language/literacy, math and letter naming skills, while the quality of classroom organization positively influenced children's outcomes in the domain of math, social competence, problem behaviors, and letter naming.

CLASS assesses classroom quality on three domains on a 7-point scale (i.e., 1-2: low range, 3-4-5: middle range, 6-7: high range). The domains are *emotional support*, *classroom organization*, and *instructional support*. Emotional support is about the abilities of teachers to support the social and emotional functioning of children in classrooms and involves the elements of positive climate, negative climate, teacher sensitivity, and regard for student perspectives. Classroom organization pertains to teachers' competence in creating a classroom environment where children are well-behaved, interested, and engaged in learning tasks and involves the dimensions of behavior management, productivity, and instructional learning formats. The domain on instructional support emphasizes teacher support for cognitive and language development of children and includes the dimensions of concept development, quality of feedback, and language modeling. These three domains of teacher-child interaction quality are correlated with each other. Curby, Grimm, and Pianta (2010), for instance, showed that increases in the quality of emotional support and classroom organization were linked to increased instructional support and the quality of classroom organization positively influenced the emotional support in the classrooms. Table 7 presents the definitions of the dimensions of CLASS and introduces the indicators.

Table 7
Dimensions of CLASS, Definitions, and Indicators

Dimension	Definition	Indicators
Emotional support		
Positive climate	Reflects the emotional connection between a teacher and students and among students and the warmth and respect, and enjoyment communicated by verbal and nonverbal interactions	Relationships Positive affect Positive communication Respect
Negative climate	Reflects the overall level of expressed negativity in the classroom, the frequency, quality and intensity of teacher and peer negativity	Negative affect Punitive control Sarcasm/disrespect Severe negativity
Teacher sensitivity	Encompasses a teacher's awareness of and responsiveness to students' academic and emotional needs	Awareness Responsiveness Addresses problems Student comfort
Regard for student perspectives	Captures the degree to which a teacher places an emphasis on students' interests, motivations, points of view and encourages student responsibility and autonomy	Flexibility and student focus Support for autonomy and leadership Student expression Restriction of movement
Classroom organization		
Behavior management	Encompasses a teacher's ability to provide clear behavioral expectations and use effective methods to prevent and redirect misbehavior	Clear behavioral expectations Proactive Redirection of misbehavior Student behavior
Productivity	Considers how well a teacher manages instructional time and routines and provides activities for students	Maximizing learning time Routines Transitions Preparation Effective facilitation
Instructional learning formats	Focuses on the ways in which a teacher maximizes students' interest, engagement, and ability to learn from lessons and activities	Variety of modalities and materials Student interest Clarity of learning objectives
Instructional support		
Concept development	Measures a teacher's ability to promote students' higher-order thinking skills and the teacher's focus on understanding rather than on rote memorization	Analysis and reasoning Creating Connections to the real world
Quality of feedback	Assesses the degree to which a teacher provides feedback that expands learning and understanding and encourages continued participation	Scaffolding Feedback loops Prompting thought processes Providing information Encouragement and affirmation
Language modeling	Captures the quality and amount of a teacher's use of language-stimulation and language-facilitation techniques	Frequent conversation Open-ended questions Repetition and extension Self-parallel talk Advanced language

The three-factor structure of CLASS has a strong theoretical and research foundation. As cited in Hamre, Pianta, Mashburn, and Downer (2007), the domain of emotional support is derived from attachment and self-determination theories, while the underpinnings for the domain of classroom organization are mostly research on children's self-regulation. On the other hand, the dimensions of instructional support come primarily from research on children's language and cognitive development. This theoretical model was also confirmed statistically to ensure evidence for the construct validity and has been tested in research outside the USA such as Spain (Sandstrom, 2012) and Finland (Pakarinen et al., 2010; Salminen et al., 2012; Siekkinen et al., 2013). On the basis of the results of the studies that were conducted between 1998 and 2005 with a sample of more than 4000 classrooms from preschool to fifth grade in the USA, Hamre and her colleagues (2007) concluded that the three-factor latent structure for CLASS is a better fit in comparisons to one and two-factor models although in some cases some indices of fit were below conventionally acceptable levels of good fit. In this study, the indices of fit obtained for CLASS pre-k in three separate studies were like the following: CFI = .93, .94, .91; GFI = .89, .94, .86; TLI = .89, .91, .88; RMSEA = .17, .12, .14. In these studies, the internal consistency values were reasonably well for the three domains (.89, .83, .89 for emotional support; .89, .81, .77 for classroom organization; and .85, .83, .83 for instructional support). Downer et al. (2012) also indicated that these factors were valid and reliable and predicted some important social and academic outcomes for an ethnically and linguistically diverse group of preschool children in 721 state-funded pre-kindergarten programs across 12 states in the USA. Outside the USA, the results of the confirmatory analysis with the data based on observations of 49 classrooms by Pakarinen et al. (2010) indicated that the three-factor model without Negative Climate had an acceptable fit in Finnish context (CFI = .96, TLI = .94, SRMR = .04). Although these three factors were highly correlated with each other in this study, researchers concluded that they are likely to measure different aspects of quality given the variation in the way they relate to concurrent validity measures.

Alternative to the 3-factor model, Hamre, Hatfield, Pianta, and Jamil (2014) tested a bifactor model to control for high correlations among the three dimensions that constraints the ability of CLASS in predicting children's outcomes. The results with a sample of 325 preschool teachers and 1470 students enrolled in their classrooms demonstrated that the hypothesized bifactor model with one general and two domain-specific factors had an acceptable good fit (CFI = .96, RMSEA = .11, SRMR = .04), and a better solution than the 3-factor solution (CFI = .93, RMSEA = .13, SRMR = .08). Also, this study revealed that the bifactor model was able to capture a broader set of significant relationships that the 3-factor model did not detect between teacher-child interactions and children's outcomes. The domains in this bifactor model entitled like the following: *General responsive teaching* that involved all dimensions from the domains of emotional support, classroom organization, and instructional support, *Proactive management and routines* that involved a combination of dimensions from the domains of emotional support and behavior management, and *Cognitive facilitation* that involved the dimensions from the domain of instructional support. Although this bifactor model offers an improved interpretability due to the elimination of multicollinearity among factors, Hamre et al. (2014) noted that it needs to be replicated in future studies with diverse samples. Additionally, they pointed out that the three-factor model is clearly more advantageous to use because of its analytical, conceptual and practical simplicity.

3.3.2. Teacher Beliefs Survey (TBS)

TBS by Kim and Buchanan (2009) is the revised version of the teacher beliefs survey developed by Charlesworth et al. (1993). This revised survey including 42 items attempts to measure the beliefs of preschool teachers about developmentally appropriate practice based on the NAEYC's guidelines published in 1997 on a 5-point rating scale ranging from 1: not all important to 5: extremely important. Kim and Buchanan (2009) stated that the new scale, unlike the old version, recognizes the NAEYC's increased emphasis on culturally appropriate teaching, responsiveness to the needs of all children including children with special needs, and teachers' role as decision makers.

Kim and Buchanan (2009) tested the psychometric properties of this survey with a sample of 377 kindergarten teachers working in the public schools in Southeast Louisiana, the USA. The exploratory factor analysis indicated that the three-factor solution that accounted for nearly 34% of the total variance in the sample best explains the latent structure in the scale. These factors are *developmentally appropriate practices* (DAP), *developmentally inappropriate practices* (DIP), and *context appropriate practices* (CAP) about family culture and inclusion. Sample items (see Appendix A) were like the following:

“It is ... for children to write inventing their own spelling.” (DAP)

“It is ... to focus on teaching children isolated skills by using repetition and recitation (e.g., reciting ABCs).” (DIP)

“It is ... to establish a collaborative partnership/relationship with parents of all children, including parents of children with special needs and from different cultural groups.” (CAP)

Kim and Buchanan (2009) also noted that the Cronbach’s alpha values indicated acceptable levels of reliability as they were .85 for DAP, .82 for DIP, and .81 for CAP. However, it is worthy to mention that in this three-factor model, item 43 (“It is to plan activities that are primarily just for fun without connection to program goals.”) did not fit into any factors. Also, item 9 (“It is for teachers to provide opportunities for children to select many of their own activities.”), item 3 (“To plan and evaluate the curriculum, teacher observation is ...”), item 31 (“It is ... that outdoor time have planned activities.”), and item 2 (“As an evaluation of children’s progress, readiness or achievement tests are ...”) had factor loadings below .30 ranging from .24 to .27.

Demircan (2012) adapted this scale into Turkish in her dissertation study. In Turkish version, the researcher changed item 8 in the original scale (“It is ... for child-teacher interactions to help develop children’s self-esteem and positive feelings toward learning.”) and separately asked the importance of teacher-child interactions in developing children’s self-esteem and positive feelings toward learning. Moreover,

Demircan added a new item on the importance of children's daily exploration of books individually or in groups. After these changes, the scale that consisted 44 items was tested with 95 preschool teachers. The 44-item structure of the scale did not yield an acceptable solution in this study. With the exclusion of eleven items from the analysis, the reliability of the scale increased from .65 to .80. Yet three more items were excluded because they were considered irrelevant to the scope of the study. After the exclusion of fourteen items (i.e., items 2, 7, 17, 20, 24, 28, 29, 33, 36, 39, 40, 41, 42, 45), the researcher proposed a two-factor structure for the 30-item structure of the survey, defined as *developmentally appropriate practices* (DAP) and *developmentally inappropriate practices* (DIP). The Cronbach's alpha values were .77 for DAP and .76 for DIP.

In Demircan's model of 30-item two-factor scale, the exclusion of fourteen items from the original scale is considered a serious threat to the content validity of TBS. As the decisions in this study were made on the basis of a relatively small sample, namely 95 preschool teachers, and this model was not confirmed with another data set, in the present study, it was considered that re-testing of the 44 item scale with a larger number of participants from Turkey could help make better conclusions about the construct validity of TBS. Therefore, in the current study, the decision was to improve Turkish version of TBS with 44 items by Demircan (2012).

First, to have fidelity to the original scale, the item added by Demircan ("Çocukların hergün bireysel olarak ve/veya küçük gruplar halindeyken kitapları incelemeleri ...'dir." [It is ... for children to explore books daily individually or in groups]) was excluded from the scale. Second, all items were examined closely regarding their translation, and some changes were made for language clarification and improvement. For this purpose, the original scale was re-translated by the researcher and an expert who have fluency in English in this study. These two new translations were compared with the translation of Demircan to construct the common form for the survey. Third, three items from the original scale, namely item 27 ("It is ... that teachers engage in on-going professional development in early childhood education [e.g., attend professional conferences, read

professional literature].”), item 37 (“It is ... for the classroom teacher to modify, adapt, and accommodate specific indoor and outdoor learning experiences for the child with special needs as appropriate.”) and item 38 (“It is ... that services [like speech therapy] be provided to children with special needs in regular education classroom by specialists within the context of typical daily activities.”) were not included in this revised Turkish version of the scale because unlike other items these items do not pertain to teaching and learning process in early childhood education, a threat to the construct validity. Fourth and the last, item 31 (“It is ... that outdoor time has planned activities.”) that did not load in any of factors in the study by Kim and Buchanan (2009) was re-written like the following: “It is ... that children in most of their time engage in structured activities that are planned and led by their teachers.” This item was constructed given the NAYEC’S guideline on that “*Teacher recognize the importance of both child-guided and adult-guided learning experiences*” (Copple et al., 2013, p. 73).

3.3.3. Teacher Self-Efficacy Scale for Early Childhood Education (TSES-ECE)

TSES-ECE was developed in the scope of the present study to measure the self-efficacy beliefs of early childhood teachers. It was designed on a 9-point rating scale, ranging from 1 (none) to 9 (to a great extent). The main rationale for the new scale was the limitation of Teachers’ Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001), the measure used commonly in literature, in responding to specifics of teaching in early childhood education because this scale by Tschannen-Moran and Hoy (2001) does not include any factors about parent involvement and student assessment and evaluation. Moreover, in this scale, it is considered that the items on efficacy for instructional strategies do not align well with the key principles that characterize effective instruction in the context of early childhood education (e.g., responding to individual differences, ensuring whole development, integrating different content areas). Skaalvik and Skaalvik (2007) also critiqued this well-known and extensively used measure for its content that reduce teaching to three factors. They offered Norwegian Teacher Self-Efficacy Scale including the six dimensions as follows: instruction, adapting education to individual

students' needs, motivating students, keeping discipline, cooperating with colleagues and parents, and coping with changes and challenges. However, this scale was not also specifically designed for measuring early child teachers' sense of efficacy and so were not used in the present study.

Tepe and Demir (2012) and Koç, Sak, and Kayri (2015) also noticed this gap in the literature and developed scales to measure the self-efficacy beliefs of early childhood teachers in Turkey. Preschool Teachers' Self-Efficacy Beliefs Scale of Tepe and Demir (2012) included six factors which are defined as teaching and learning process, communication skills, parent involvement, planning, arrangement of the learning environment, and classroom management. However, this scale is considered limited in content because the scale does not offer a factor on student engagement and even any items on student assessment and evaluation. Moreover, some of the items in this scale on teaching and learning process are more likely to measure teachers' perception of their abilities to produce educational outcomes (e.g., initiation, autonomy, self-expression) rather than their perceptions about their capabilities to execute specific teaching tasks. Moreover, Self-Efficacy Beliefs Scale for Activities in Preschool Education by Koç et al. (2015) focused on measuring the capabilities of teachers in specific activities including art, drama, field trips, mathematics, movement, music, play, preparation for reading and writing, science, and Turkish language rather than the capabilities for teaching independent of the type of activities they carry out. Therefore, the decision was to develop a scale alternative to these scales in the present study.

In the scale development process, initially, the relevant literature was reviewed to point out how the concept of teacher self-efficacy was conceptualized in previous studies. As suggested by Clark and Watson (1995), the existing scales were examined to clarify the nature of the construct, to identify any problems with the existing measures, and also to ensure that there is a need for this new scale. Specifically, the three measures that we considered in item generation phase were Teachers' Sense of Efficacy Scale by Tschannen-Moran and Hoy (2001), Bandura's Teacher Self-Efficacy (2006), and also

Norwegian Teacher Self-Efficacy Scale of Skaalvik and Skaalvik (2007). The following sources also guided the decisions regarding the content areas to be represented in this new scale: quality indicators from Classroom Assessment Scoring System (Pianta et al., 2008), the position statement of NAEYC (2009) on developmentally appropriate practices, the qualifications that are determined by Ministry of National Education for early childhood teachers, and the core principles of early childhood education as described in national early childhood education curriculum.

Expert opinion was used to validate the relevance of the items for the construct, their clarity, and the sufficiency of the scope of the content (DeVellis, 2012). The experts were six faculty members with specializations in a variety of areas including early childhood education, teacher self-efficacy, curriculum and instruction, and assessment and evaluation. Also, two early childhood teachers evaluated the clarity of the items. An expert on the Turkish language edited the scale regarding grammar and spelling. The sample items (see Appendix B) are like the following:

“How well can you communicate with children’s families?”

“How well can you meet children’s individual differences in your practices?”

“How well can you prevent behaviors that may disrupt learning environment in your class?”

“How well can you evaluate children’s development in different domains (cognitive, social, emotional, physical, language)?”

“How well can you motivate disengaged children to participate actively in learning activities?”

3.3.4. Teacher Efficacy Scale (TES)

This scale is the adapted short version of Teacher Efficacy Scale of Gibson and Dembo (1984) by Hoy and Woolfolk (1993). Unlike the original scale of Gibson and Dembo, this ten-item scale includes two Rand items to measure teacher self-efficacy beliefs (i.e., “When it comes right down to it, a teacher really can’t do much because most of a

student's motivation and performance depends on his or her home environment.", "If I really try hard, I can get through to even the most difficult or unmotivated students.")(Çapa (2005) in her dissertation study reduced the number of items in this scale to nine because two items were identical in their content. Specifically, "If I really try hard, I can get through to even the most difficult or unmotivated students." was kept on the scale instead of "When I really try, I can get through to most difficult students."

For the present study, this nine-item version of Teacher Efficacy Scale (TES) was adapted into Turkish. In the first step, five experts in educational sciences made independent forward translations of the scale. In this group, three experts were familiar with the construct the scale addresses; however, two experts were naïve about the construct. In the second step, on the basis of the analysis of the forward translations, and also considering the long version of Teacher Efficacy Scale adapted into Turkish by Diken (2004), the researcher constructed a common translation for the scale. In the third step, two experts who had proficiency in English and did not know the original instrument back-translated it. In the light of these back translations, the researcher confirmed the congruence of the meaning between the original and adapted scale. In the final step, without altering the content of the scale, some minor changes were made in the wording of some items to improve the relevance of the scale for the sample of early childhood teachers. Five faculty members with specializations in different areas including early childhood education, curriculum and instruction, and assessment and evaluation and also two early childhood teachers reviewed the items to ensure content validity. This scale was also edited by an expert on Turkish language regarding grammar and spelling.

TES measures teacher efficacy beliefs on two dimensions: personal teaching efficacy and general teaching efficacy on a 6-point response scale, ranging from strongly disagree (1) to strongly agree (6). According to Gibson and Dembo (1984), items on personal teaching efficacy address teachers' perceived sense of personal ability in student learning. In this respect, it reflects Bandura's "self-efficacy." The second dimension, general teaching efficacy measures teachers' beliefs about any teacher's ability to lead to positive outcomes

in student learning and behavior despite limitations external to a teacher such as a student's family background. Thereby, this construct is considered being related to the notion of "outcome expectancy" of Bandura. For example, "If I really try, I can get through to most difficult or unmotivated children." is an item for personal teaching efficacy and "The amount a child can learn is primarily related to family background." is an item for general teaching efficacy (see Appendix C for sample items).

As evidence for criterion validity, Çapa (2005) examined the relationship between this scale and Teachers' Sense of Efficacy Scale of Tschannen-Moran and Hoy (2001). In this study, consistent with the expectations, personal teaching efficacy had a significant positively relationship with efficacy for classroom management, efficacy for student engagement, and efficacy for instructional strategies, while general teaching efficacy was related to these dimensions significantly negatively. Of note is that the two factors, personal and general teaching efficacy, have been moderately correlated with each other; namely, the correlations generally ranged from .15 to .20 in different studies (Tschannen-Moran & Hoy, 2001). Even, Hoy and Woolfolk (1993) argued that personal and general teaching efficacy are independent set of beliefs.

3.4. Scale Validation Procedure

The measures used in the quantitative part of this study were validated via factor analysis. This first section presents the criteria used and rationales for these decisions while running factor analysis. Next, the findings of the preliminary analyses before running factor analysis for each scale are given.

3.4.1. Criteria used in factor analysis

The confirmatory factor analysis (CFA) was preferred over exploratory factor analysis (EFA) when the aim was to test a specific hypothesis based on a priori theory (Hurley et al., 1997; Henson & Roberts, 2006). In EFA, the solutions were based on common factor

method because common factor analysis does not simply reduce data rather unearth the underlying latent variables by distinguishing between common variance and unique variance (Fabrigar, Wegener, MacCallum, & Strahan, 1999). As suggested by Costello and Osborne (2009), principal axis factoring was used as the extraction method when the data were not normally-distributed. In regard to rotational method, the oblique rotation with direct oblimin was employed when the factors were correlated with each other (Tabachnick & Fidell, 2013). However, if the factor correlations were considerably weak, the varimax rotation, an orthogonal rotation method, was the choice as it produces the optimal results while maintaining independent factors (Hair, Black, Babin, & Anderson, 2010). Moreover, as recommended by Henson and Roberts (2006), the number of factors was determined considering multiple criteria along with reasoned reflection. Specifically, Kaiser's eigenvalue rule, Cattell's scree test, and Horn's parallel analysis were used to eliminate possible adverse consequences of under extraction and over extraction (Ledesma & Valero-Mora, 2007). While interpreting the factors, following the rule of thumb offered by Tabachnick and Fidell (2013), the variables with loadings of .32 and above were considered significant.

In CFA analyses, the robust maximum likelihood method was used for parameter estimation to reduce the risk of Type 1 error if the multivariate normality was violated in the sample (Kline, 2011). Otherwise, the parameters were estimated based on maximum likelihood. Several criteria were applied to assess model fit. In particular, following the guideline of Byrne (2010), feasibility and statistical significance of parameter estimates, and goodness-of-fit statistics were examined to judge if a hypothesized model adequately described the sample data. It is recommended that a model be considered good if multiple fit indices support each other (Schreiber, Nora, Stage, Barlow, & King, 2006). The model is considered relatively good if the cutoff value is close to .95 for Tucker-Lewis Index (TLI; also known as NNFI) and Comparative Fit Index (CFI), is close to .08 for Standardized Root Mean Square Residual (SRMR), and is close .06 for the Root Mean Square Error of Approximation (RMSEA) (Hu & Bentler, 1999). Notably, Hu and Bentler (1999) recommended using a TLI or a CFI value of .95 in

combination with an SRMR value close to .09 to evaluate model fit. Similarly, Hooper, Coughlan, and Mullen (2008) presented the acceptable threshold levels for determining the model fit like the following: SRMR less than .08, TLI greater than .95, CFI greater than .95, and RMSEA less than .07. Schermelleh-Engel, Moosbrugger, and Müller (2003) made a distinction between an acceptable and good fit. They recommended that a model fit is considered good when SRMR and RMSEA are equal to .05 or less, and CFI and NNFI are equal or greater than .97. On the other hand, a model is not good but still acceptable if SRMR is greater than .05 and less than .10, RMSEA is greater than .05 and less than .08, and CFI and TLI are greater than .95 and less than .97. Although Kline (2011) affirmed taking chi-square test seriously for model evaluation, Hu and Bentler (1998) cautioned researchers against them as a significant result may be because of model misspecification, power of the test, or violation of an assumption for the estimation method used in a study. As a measure of reliability, Cronbach's alpha values were reported for each dimension of the scales used in this study. As explained by Kline (2011), the Cronbach alpha measures the internal consistency of the responses across a scale. Although there is not a golden rule, the reliability coefficients around .70 are considered adequate (Kline, 2011).

3.4.2. Data screening for factor analysis

The two sets of data (Sample 1 and Sample 2) were used in factor analyses in the present study, and these data sets were screened for missing variables, outliers, and the assumptions for factor analyses. Below section presents the findings of these preliminary analyses for each scale.

3.4.2.1. Missing data

Findings from Sample 1: In regard to Teacher Self-Efficacy Scale for Early Childhood Education, 11.4% of the cases ($n = 31$) did not respond to the items completely in Sample 1. At the highest rate, 1.8% ($n = 5$) did not complete item 20 ("How well can you solve your conflicts with the parents of children?"). In the whole data set, 0.6% ($n = 45$) of the

scores was missing in this scale. Little's MCAR test result, $\chi^2(661) = 828.01, p = .00$, pointed out that the data for this scale were not missing in a random pattern; therefore, some other sources of evidence were checked before deciding if the missing variables in this scale could be ignored or not.

One-way analysis of variance (ANOVA) was used to explore if the participants with complete data and incomplete data differed regarding the efficacy scores they obtained from this scale. For this end, especially, the efficacy scores of the individuals with missing and non-missing data for item 20 were compared as it was the variable with the highest rate of missing values. As the risk of Type 1 error increases with multiple comparisons, it is recommended to set a more stringent level of alpha level (Abdi, 2007). For the present case, the alpha level was adjusted to .002 (.05/26) with Bonferroni correction. The results revealed that the participants with complete and incomplete data for item 20 were not statistically different considering their level of efficacy for the remaining items on this scale. Also, the cases with incomplete data for this scale were not different from the cases with complete data in terms of their years of experience, $F(1, 254) = 2.70, p = .10$. Furthermore, if the missing data on this scale were linked with the participants' level of education, and the type of school in which they were working were examined via chi-square tests. The results indicated that the participants with a high school education degree were not more likely to have incomplete data than those with degrees beyond high school education (Fisher's Exact Test's $p = .55$) as working in a private school or public school was not statistically significantly connected with the proportion of missing data the participants had (Continuity correction = .62, $p = .43$). Therefore, despite the contrary evidence from Little's MCAR test, it was concluded that the missing data for this scale was ignorable.

Regarding Teacher Beliefs Survey, 33.7% of the cases ($n = 92$) had incomplete data in Sample 1. Given each item on this scale, at the highest rate, 6.6% ($n = 18$) did not respond to item 10 ("It is ... to use one approach for reading and writing instruction."). In the whole data set, 2.4% of the scores ($n = 262$) was missing. Little's MCAR test provided

evidence that the data were missing completely at random ($\chi^2(2677) = 2636.16, p = .71$) for this scale. Therefore, the decision was to ignore the missing data on this scale.

In regard to Teacher Efficacy Scale, 6.6% of the cases ($n = 18$) had incomplete data. Given each item, at the highest rate, 2.2% ($n = 6$) did not answer item 4 (“If parents would do more for their children, I could do more.”) and item 3 (“A teacher is very limited in what he/she can achieve because a students’ home environment is a large influence on his/her achievement.”). Overall, only 1.1% of the scores ($n = 26$) were missing in the whole data set for this scale. The data were considered missing in a random pattern because Little’s MCAR test yielded a statistically non-significant result, $\chi^2(72) = 56.11, p = .92$.

All these findings were evaluated to reach a decision about how to handle missing data in Sample 1. Tabachnick and Fidell (2013) reported that when few data points are missing (5% or less) randomly, any method could be used to deal with incomplete data. This suggestion applies to the present study as at the highest rate, 3% of the scores were missing in whole data set and the missing data for a variable was at the highest rate 6.6%. Moreover, there was evidence that they were missing in a random pattern. In the present study, eventually, the decision was to use complete case analysis in Sample 1 because among conventional methods it is more likely to yield “honest” results when handling with missing data (Allison, 2002). Schafer and Graham (2002) pointed to the threat of discarding a significant portion of a sample for listwise deletion. The highest proportion of the sample was lost for Teacher Beliefs Survey; namely, there was a decline from 273 participants to 181 for this scale. Despite this decline, this sample size was considered reasonably adequate to perform factor analyses as it almost fulfills the ratio of 5 observations per variable (Hair et al., 2010). Guadagnoli and Velicer (1988) even reported that a sample size of 150 could be adequate with solutions that involve variables with high loadings.

Findings from Sample 2: In the data set of Sample 2, 6% of the cases ($n = 16$) did not respond to Teacher Self-Efficacy Scale for Early Childhood Education completely. Given

incomplete data for each item, at the highest frequency, 1.1% ($n = 3$) did not respond to item 9 (“How well can you make children believe that they can overcome educational tasks?”). Little’s MCAR test was statistically significant for this scale, $\chi^2(219) = 259.49$, $p = .03$; however it was ignored because only 0.5% ($n = 18$) of the scores were missing in the whole data set.

In Teacher Beliefs Survey, 28% of the cases ($n = 75$) had incomplete data. Given each item on this scale, item 9 (“It is ... to use one approach for reading and writing instruction.”) had the highest rate of missing data (4.5%, $n = 12$). Little’s MCAR test result was statistically significant for this scale ($\chi^2(1407) = 1586.78$, $p = .00$). As the rate of missing scores in the whole data set was considered high (1.1%, $n = 104$) in comparison to other scales in the present study, additional analyses were performed to test if the participants with incomplete data were different from the participants without incomplete data for this scale. Specifically, one-way ANOVA indicated that the individuals with complete and incomplete data for item 9, the variable that had the highest rate of incomplete response, did not differ from each other in their scores on the other items of this survey at the adjusted alpha of .001 (.05/35). The cases with complete and incomplete data for this survey were different regarding their years of experience, $F(1, 260) = 5.001$, $p = .03$. However, this was a small effect (eta squared = .02). The chi-square revealed that the participants with at least B.S. degrees were more likely to provide missing data than the participants without B.S. degrees (i.e., Associate degree, Open University degree), Continuity correction = 7.65, $p = .01$. Yet this difference was also small (Phi coefficient = .03).

In the data set for Teacher Efficacy Scale, 1.9% of the cases ($n = 5$) had incomplete data. In the whole set of values, 0.2% ($n = 5$) of the scores were missing. Item 4 had the highest frequency of missing data, and this was 1.1% ($n = 3$). Little’s MCAR test yielded a statistically non-significant result, $\chi^2(31) = 28.41$, $p = .60$. Therefore, the decision was to ignore the missing data on this scale.

In the light of this evidence, among various methods, the maximum likelihood method with Expectation-Maximization (EM) algorithm was selected to deal with the missing data in Sample 2. It is noteworthy to mention that the complete case analysis that was adopted in Sample 1 was abandoned in this data set to prevent the loss of the data derived from classroom observations. Pigott (2001) asserted that the EM algorithm is an appropriate method for missing data when the assumptions are met. Graham (2009) also noticed that maximum likelihood methods are at least as good as the old methods even if the assumption of missing at random was violated.

3.4.2.2. Outliers

Considering that they may distort the results, the potential outliers were examined in each scale separately on the basis of boxplots, Mahalanobis distance, and leverage scores both in Sample 1 and Sample 2. In identifying the threshold value for Mahalanobis distance, a conservative alpha level, namely .001 was used as suggested by Hair et al. (2010). The cutoff values for leverage were determined with the formula of $3(k/N)$ considering the suggestion of Osborne (2015).

Findings from Sample 1: In regard to Teacher Self-Efficacy Scale for Early Childhood Education, the box plots that pertained to several variables consistently pointed to the case with ID 258 as a potential univariate outlier. This case and also three more cases (i.e., ID 94, 100, 85) had leverage scores beyond the critical value of 0.3347, between 0.34946 and 0.41052. These four cases were as well with the highest Mahalanobis distance in the sample that exceeded the threshold of $\chi^2(27) = 55.476, p = .001$. Considering these multiple pieces of evidence, the decision was to exclude these four cases from the analysis.

In regard to Teacher Beliefs Survey, the box plots for several items pointed to the case with ID 258 as a potential univariate outlier. In addition to this case, there were five more cases with Mahalanobis distance scores beyond the critical value, $\chi^2(40) = 73.402, p = .001$. Among these cases, only the case with ID 40 had a leverage value (0.94152) that

considerably exceeded the cut-off value of 0.66398. Given the evidence from multiple sources, the decision was to delete the two cases with ID 40 and 258 in the sample.

In regard to Teacher Efficacy Scale, the case with ID 52 was identified as a potential univariate outlier in several items consistently via box plots. Also, the cases with ID 85, 55, 228, 66 and 259, in addition to the case with ID 52 were diagnosed as potential multivariate outliers. The Mahalanobis distances of these cases had a range between 34.19413 and 55.59871, beyond the cut-off value, $\chi^2(9) = 27.877$, $p = 001$. Their leverage values similarly exceeded the critical value of 0.10588, which were namely between 0.13462 and 0.21889. Given the consistency of the results, these six cases were excluded from the sample.

Findings from Sample 2: The box plots for Teacher Self-Efficacy Scale for Early Childhood Education in Sample 2 showed that the cases with ID 189 and 70 were the potential univariate outliers across several items. These two cases and also four more cases with ID 227, 195, 131, and 163 had leverage scores beyond the critical value of 0.2014, between 0.20208 and 0.37675, and had the highest Mahalanobis distance scores that exceeded the threshold of $\chi^2(18) = 42.312$, $p = 001$. The decision was to remove these six influential cases from the analysis.

For Teacher Beliefs Survey, the box plots pointed to the case with ID 131 as a potential univariate outlier across several items consistently. The Mahalanobis distance score of this case (116.5041) was as well the largest score beyond the critical value, $\chi^2(36) = 67.985$, $p = 001$. The leverage value of this case, moreover, exceeded the cut-off value of 0.4029. As a result, this case was removed from the analysis.

In the box plots for Teacher Efficacy Scale, the case with ID 255 was identified as a potential univariate outlier across several items. In addition to this case, three more cases with IDs 131, 113, and 197 were diagnosed as the potential multivariate outliers because the Mahalanobis distances of these cases were beyond the cut-off value, $\chi^2(9) = 27.877$, p

= 001, ranging between 29.95560 and 39.74805. Their leverage values, ranging from 0.11219 to 0.14887, similarly exceeded the critical value of 0.1007. Thus, these four cases were not included in the analysis.

3.4.2.3. Assumptions of factor analysis

The assumptions of normality, linearity, and multicollinearity and singularity were checked separately for each scale used in the present study with the two data sets including Sample 1 and Sample 2. The third data set (Sample 3) that included the classroom observations for a sub-group from Sample 2 was also inspected for the assumptions of factor analysis for the validation of CLASS.

Findings from Sample 1: The Kolmogorov-Smirnov and Shapiro-Wilk tests yielded statistically significant results for each item in each scale in the present study. The results of Mardia's test of multivariate kurtosis for each scale indicated that multivariate normality was violated in the sample. However, given each scale, the highest skewness coefficient was -2.215 and the highest kurtosis coefficient was 6.066 (for item 8 in Teacher Beliefs Survey). As the skew index beyond 3 and kurtosis index beyond 10 may indicate that the distribution is non-normal (Kline, 2011), it was concluded that the departures from the normality in the present study were not serious. The inspection of histograms and Q-Q plots were also likely to support this finding. Moreover, the Central Limit Theorem posits that the sampling distributions of means are normally distributed if the sample size is sufficiently large (Tabachnick & Fidell, 2013). Especially, with a sample size of 200 and beyond, the effect of normality is considered non-significant (Hair et al., 2010), which was ensured for each scale in this study except Teacher Beliefs Survey ($n = 181$).

The linearity assumption checks for a straight-line relationship between two variables (Tabachnick & Fidell, 2013). As there were 95 variables, the examination of all possible pairs was not feasible via scatterplots. For these situations, Tabachnick and Fidell (2013)

suggested selecting specific variables for screening on the basis of their skewness statistics. This suggestion was applied to the study and the bivariate scatterplots were drawn to assess the relation of item 21 with other variables in Teacher Self-Efficacy Scale for Early Childhood Education and that of item 4, 8, 12 with other variables in Teacher Beliefs Survey considering their skewness and kurtosis values. In general, these scatterplots were likely to show some linear correlation between the variables. Yet it is worthy to recognize that this linearity was not perfect because the data were obtained from Likert scales. Although Kuzon, Urbanchek, and McCabe (1996) consider data from Likert scales being ordinal and criticized using parametric analysis for them, Norman (2010) argued that this is not a valid concern because there is consistent evidence that parametric statistics are robust to the violations of this kind of assumptions.

The correlation matrix of each scale in the present study did not show any two variables with a correlation greater than .90. Field (2009) suggested checking if the determinant of correlation matrix was greater than 0.00001. If it is, the multicollinearity is not considered a problem in data set. This criterion was not met for Teacher Self-Efficacy Scale for Early Childhood Education and Teacher Beliefs Survey. Considering this contradictory evidence, for these two scales, squared multiple correlation (R^2), tolerance and VIF values were computed as a variable served as the dependent variable with the rest of other variables in the scale. According to Kline (2011), $R^2 > .90$, tolerance $< .10$, and VIF $> .10$ may reveal extreme multivariate collinearity in the data. These were not present in the data for these two scales.

Findings from Sample 2 and Sample 3: The Kolmogorov-Smirnov and Shapiro-Wilk tests were statistically significant for each item in each scale in the present study. The Mardia's test indicated that multivariate normality also was not met in the sample for each scale except CLASS. The inspection of skewness and kurtosis coefficients for these scales, however, showed that the deviation from normality in this data set was not seriously problematic because the highest skewness coefficient was -2.164 and the highest kurtosis value was 5.309 (for item 7 in Teacher Beliefs Survey). The histograms and Q-Q plots

were likely to support this finding. Also, the sample size ($n = 268$) was considered adequately large to overcome any limitations due to the departures from normality (Hair et al., 2010).

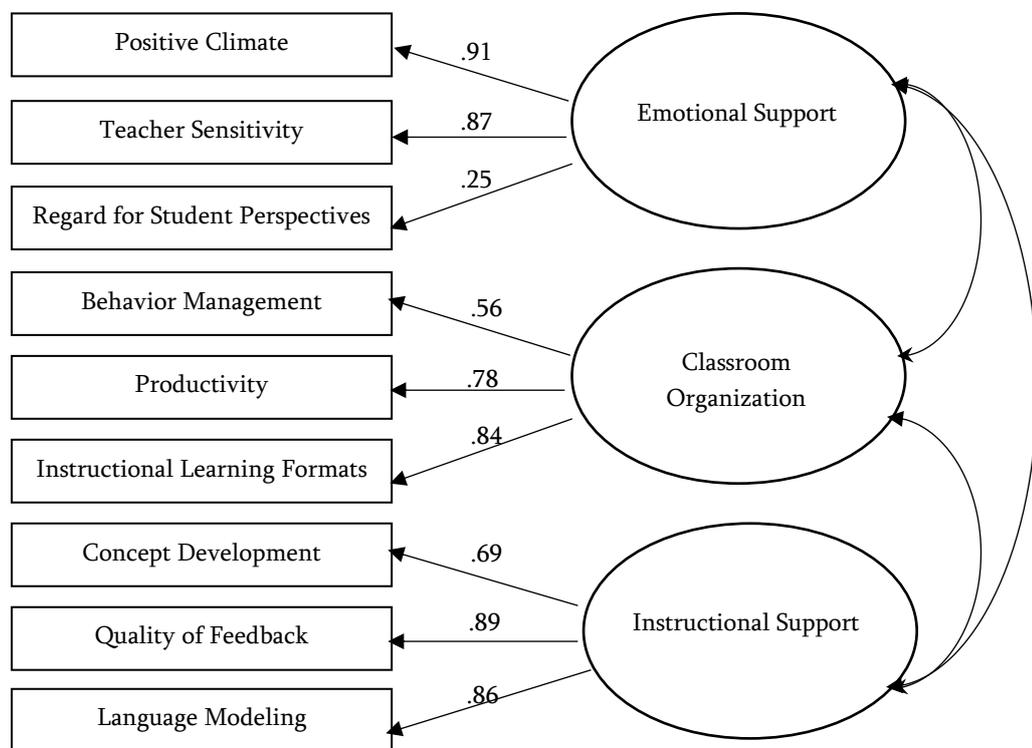
As there were 82 variables in the main phase of the study, the bivariate scatterplots were drawn only to assess the relation of item 2 with other variables in Teacher Self-Efficacy Scale for Early Childhood Education and that of item 7 with other variables in Teacher Beliefs Survey given their skewness and kurtosis values. These scatterplots were likely to show some linear correlation between the variables. Yet it is worthy to recognize that this linearity was not perfect because the data were obtained from Likert scales. The correlation matrices indicated that there were correlations among the variables greater than .30; however, there were not any two variables in each scale that have a correlation greater than .90. The determinant of correlation matrices also supported the lack of multicollinearity among the variables as they were greater than 0.00001 as expected for all scales except the Teacher Beliefs Survey. However, for this scale, the squared multiple correlation (R^2), tolerance, and VIF values did not point out any multivariate collinearity in the data.

3.4.3. Validity and reliability of Classroom Assessment Scoring System (CLASS)

The 3-factor model of CLASS was tested via confirmatory factor analysis with a sample of 47 classroom observations in the present study. In this model, it was hypothesized that positive climate, negative climate, regard for student perspectives, and teacher sensitivity would contribute to the quality of emotional support; behavior management, productivity, and instructional learning formats would predict the quality of classroom organization; and concept development, quality of feedback, and language modeling would predict the quality of instructional support. The results indicated that there was a significant discrepancy between the hypothesized and observed model, $\chi^2(32) = 62.10$, $p = .00$. The goodness-of-fit statistics also indicated that this model did not have a good fit (RMSEA = .14, CFI = .92, TLI = .89, SRMR = .10). In this model, the loading of the

indicator on regard for student perspectives also was not statistically significant (.24); however, the exclusion of this indicator did not improve the model fit either.

Considering the findings of Pakarinen et al. (2010), the 3-factor model was tested without negative climate (see Figure 3). This model yielded better results than the models presented above. Although the chi-square value still pointed to a discrepancy between the hypothesized and observed covariance ($\chi^2(24) = 40.32, p = .02$), the improved goodness-of-fit statistics (RMSEA = .12, CFA = .94, TLI = .92, SRMR = .09) were considered acceptable given the results reported by Pianta et al. (2008) on CLASS in MyTeachingPartner Study (RMSEA = .13, CFI = .93, TLI = .90). In this model, all parameters except regard for student perspectives made a significant contribution to their corresponding factor. The loadings ranged from .25 to .91 for emotional support, from .69 to .86 for instructional support, and from .56 to .84 for classroom organization. The regard for student perspectives was kept in the model given the theoretical justifications.



$\chi^2(24) = 40.32, p = .02, RMSEA = .12, CFA: .94, TLI: .92, SRMR: .09$

Figure 3. Confirmatory factor analysis results for CLASS.

Internal consistency of each factor of the CLASS was estimated through Cronbach's alpha. Alpha values were as follows: .65 for emotional support, .85 for instructional support, and .74 for classroom organization. The internal consistency of the items on the emotional support is considered low. It is noteworthy to mention that the regard of student perspectives was weakly correlated with teacher sensitivity (.17) and positive climate (.18) despite the strong correlation between teacher sensitivity and positive climate (.79).

3.4.4. Validity and reliability of Teacher Beliefs Survey (TBS)

In the present study, the factor analysis with principal axis factoring extraction and direct oblimin rotation on 40 items from TBS with a sample of 179 early childhood teachers suggested eleven factors with eigenvalues greater than 1. While the parallel analysis indicated that the eigenvalues of these eleven factors exceeded the corresponding value from random data, it was concluded that the number of factors for this scale might be two or three based on the inspection of the break points at the Cattell's scree plot, and the theoretical background behind the scale. Of these two models, the two-factor structure was the most meaningful and parsimonious solution for the sample in the present study. As the factor correlation was only .09 between the first and the second factor, the rotation method was shifted from direct oblimin to varimax.

There were, however, three issues that required a solution in this two-factor structure. Firstly, three items had a factor loading below the critical value of .32, namely .22, .31, and .31. These items were respectively item 32 ("It is ... for teachers to integrate each child's home culture and language into the curriculum throughout the year."), item 27 ("It is ... for children to see and use materials with print on them from daily life [telephone book, magazines, cereal box, food bags]."), and item 1 ("It is ... to take important decisions about children's education on the basis of the results they obtain from readiness or achievement tests."). The problem with the factor loadings was addressed with the exclusion of item 32 and item 1 from the analysis. With their

exclusion, the problem with item 27 disappeared as the improved factor loading of item 27 met the threshold value for this study. Secondly, although item 23 (“It is ... for children to write by inventing their own spelling.”) reflects the notion of developmentally appropriate practice, it emerged under the factor of beliefs about developmentally inappropriate practice in the sample of this study. To have fidelity to the theoretical background behind this scale, the decision was to exclude this item from the analysis. Thirdly and finally, some of the participating teachers reported having difficulty in answering item 20 (“It is ... for teacher to regularly use punishments and/or reprimands when children aren’t participating.”). The teachers were considered right in their criticisms as this item does not seem to be compatible with the response scale, ranging from not all important to extremely important, and so the decision was to delete it. Table 8 summarizes the results of exploratory factor analysis for TBS after the exclusion of these four items.

Table 8
Results of the Exploratory Factor Analysis for TBS

Item	Factor 1	Factor 2	Communality
#38	.75	-.16	.59
#37	.72	-.08	.52
#40	.69	-.11	.49
#10	.67	-.05	.45
#6	.64	-.03	.41
#14	.63	-.08	.40
#36	.60	.10	.37
#24	.58	-.00	.33
#39	.55	-.07	.31
#16	.51	.15	.28
#17	.50	.04	.25
#15	.49	.08	.25
#19	.49	.08	.24
#11	.49	.07	.24
#35	.47	.16	.24
#8	-.14	.60	.38
#28	-.13	.60	.38
#7	-.06	.59	.36
#29	-.03	.57	.32
#33	-.04	.56	.32
#2	-.03	.55	.31
#4	-.03	.51	.26
#18	.08	.51	.26
#3	.02	.51	.26
#34	-.07	.48	.24
#25	.03	.47	.22
#26	.08	.46	.21
#13	-.01	.45	.20
#12	.07	.44	.20
#30	.07	.44	.20
#21	-.02	.42	.18
#9	.00	.42	.18
#22	.02	.42	.18
#31	.10	.38	.16
#5	.15	.35	.15
#27	.08	.33	.12
% of variance	16.59	16.15	
Cronbach's alpha	.89	.85	

The content analysis of 36 items clearly indicated that the first factor with 15 items pertained to *developmentally inappropriate practice (DIP)*, while the second factor with

21 items was about *developmentally appropriate practice (DAP)*. This model explained 32.74% of the variance in the sample. Both factors almost made an equal contribution to the total variance explained in the sample (i.e., 16.59% for the first factor; 16.15% for the second factor). The communality values of the scores were ranging from .12 to .59. As the communalities of 30 items were below .40, the two-factor factor solution may be limited in explaining a sufficient variance in these items. The Cronbach's alpha values indicated that the subscales had acceptable levels of internal consistency (.89 for the first factor, .85 for the second factor). Overall, the two-factor structure of TBS was consistent with the results of Demircan (2012). Notably, the four items excluded in the present study (i.e., item 32, item 1, item 20, item 23) were not validated in Demircan's study, either. However, the eight items that were excluded in Demircan's study had significantly acceptable loadings within the scope of the present study. This might be because of the improvements in the translation of this scale and the use of a larger sample size in factor analysis.

The confirmatory factor analysis was also performed to test this two-factor structure for 36 items of TBS with 251 early childhood teachers in the main phase of the study. The Satorra-Bentler corrected chi-square showed a discrepancy between the hypothesized and observed model, $\chi^2(594) = 1264.96, p = .00$. The goodness-of-fit statistics also revealed that this model needed improvement: RMSEA = .07, CFI = .91, TLI = .91, SRMR = .08. Considering the modification indices and also the content, the error variances between items 2 and 3, 29 and 30, 34 and 35, 23 and 24, 6 and 7, 14 and 33, and 22 and 23 were allowed to covary respectively. After these modifications, the corrected chi-square value was still significant but improved, $\chi^2(587) = 1013.51, p = .00$. The RMSEA (.05) indicated a good fit for this respecified model. Although the SRMR (.09) was not good but acceptable, the CFI (.94) and TLI (.94) statistics were improved and close to good fit. All parameters made a significant contribution to the two-factor structure of TBS. The factor loadings ranged from .36 to .70 for DAP and from .40 to .72 for DIP. The Cronbach's alpha value of .88 both for DAP and DIP indicated the internal consistency among the items for TBS. Figure 4 displays the results of the confirmatory factor analysis for TBS.

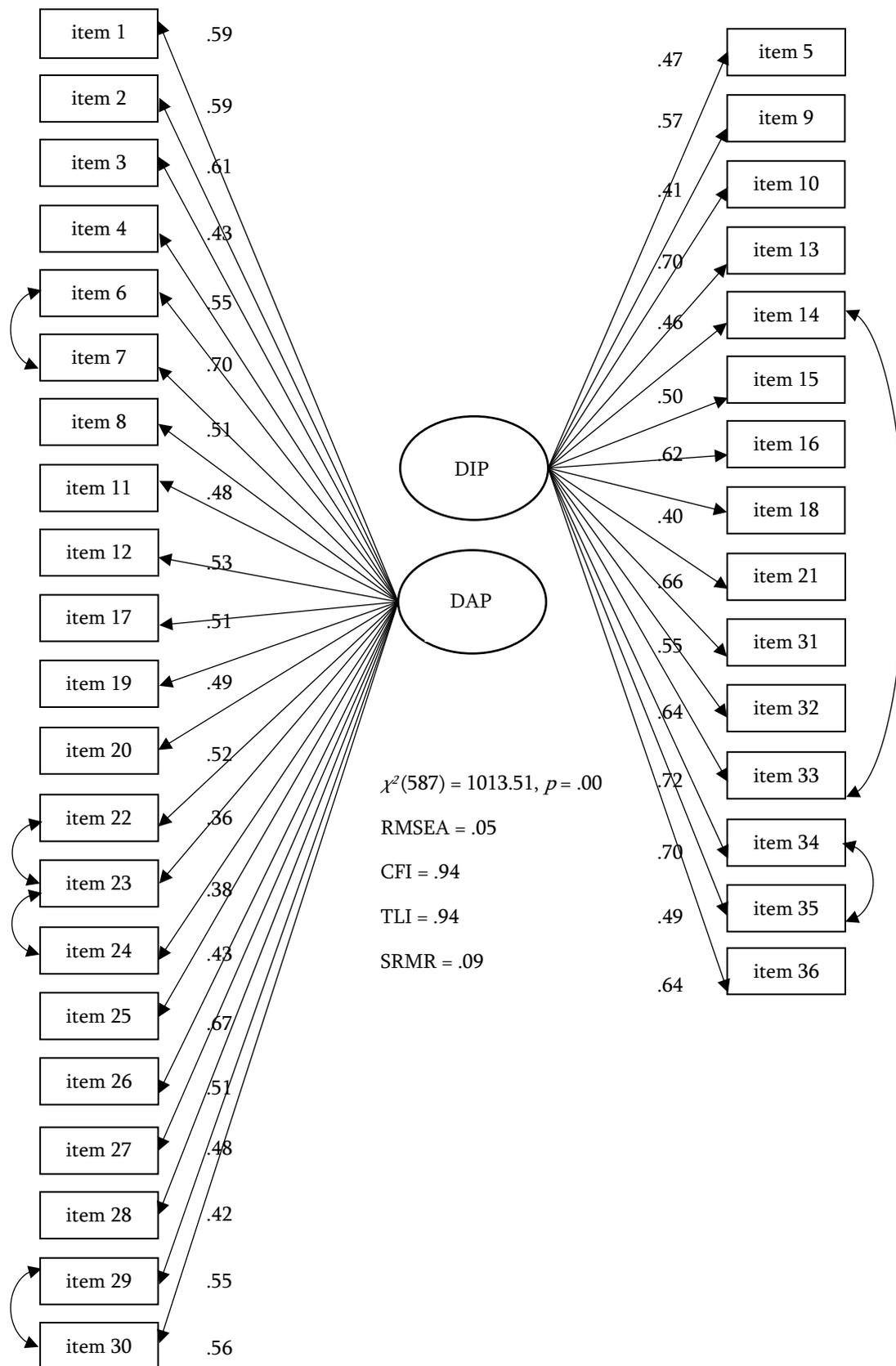


Figure 4. Confirmatory factor analysis results for the two-factor model of TBS.

3.4.5. Validity and reliability of Teacher Self-Efficacy Scale for Early Childhood Education (TSES-ECE)

The confirmatory factor analysis was conducted to test the factor structure for 27 items of TSES-ECE with a sample of 238 early childhood teachers in the first phase of this study. Based on the conceptual framework used in the scale development process, it was initially hypothesized that the efficacy scale would have five underlying latent dimensions: classroom management (items 1, 8, 14, 19, 26), student engagement (items 2, 4, 11, 24), instruction (items 3, 9, 10, 17, 22, 25, 27), evaluation (7, 13, 16, 18, 21), and parent involvement (items 5, 6, 12, 15, 20, 23). For this 5-factor solution, despite the contrary evidence from the Satorra-Bentler corrected chi-square, $\chi^2(314) = 581.32, p = .00$, the goodness-of-fit statistics provided evidence for a good model fit (RMSEA = .06, CFI = .98, TLI = .98, SRMR = .05). However, the correlation between student engagement and classroom management was .95, and the correlations between student engagement and instruction and also between evaluation and instruction were .94. Given these high correlations, it was examined if the dimensions could be combined into a single factor for an improved model fit. For this purpose, 4-factor (i.e., the combination of classroom management and student engagement, instruction, evaluation, parent involvement), 3-factor (i.e., the combination of classroom management and student engagement, the combination of instruction and evaluation, parent involvement), 2-factor (i.e. the combination of classroom management, student engagement, instruction, and evaluation, parent involvement), and 1-factor models were tested and compared with each other.

Table 9 presents the goodness of fit statistics for the 4-, 3-, 2-, and 1-factor models for TSES-ECE. Although the 4-factor and 3-factor models were considered good, these solutions did not resolve the problem of extreme correlation among the factors. Specifically, in the 4-factor model, the combination of student engagement and classroom management had a correlation of .95 with instruction, and a correlation of .94 with evaluation. Consistently, in the 3-factor model, the correlation between the combination of student engagement and classroom management and the combination of instruction

and evaluation was .95. The 1-factor and 2-factor solutions not only resolved the problem of multicollinearity between the factors but also provided a good model fit.

Table 9
Results of the Confirmatory Factor Analyses for TSES-ECE with 27 Items

Goodness of Fit	4-factor model	3-factor model	2-factor model	1-factor model
RMSEA	.00	.06	.06	.07
CFI	1.00	.98	.98	.98
TLI	1.02	.98	.98	.98
SRMR	.05	.05	.07	.05

As the goodness-of-fit statistics were close to each other in the models above, the results of this pilot study were used for the scale revision rather than model confirmation. In the scale revision process, the modification indices were inspected thoroughly to identify any items that consistently posed a threat to the goodness of model fit across the four solutions. This inspection pointed to nine problematic items (i.e., items 1, 9, 13, 14, 15, 19, 20, 24, 26) and they were removed from the scale. Of these nine items, four pertained to classroom management dimension. Although the revised scale only involves one item on classroom management and so do not represent some aspects of classroom management such as dealing with problematic behaviors, the shortened version of the scale with 18 items still represents all important aspects of early childhood education including student engagement, instruction, evaluation, and parent involvement. Apart from the items deleted, the wordings of two items (i.e., items 17, 23) were improved in the revision process.

The latent structure of this revised scale with 18 items was tested with the confirmatory factor analysis with a sample of 251 early childhood teachers in the main phase of the study. For the 4-factor and 3-factor models, the correlation matrices were not positive definite. Blunch (2008) explained that this problem is an indicator of strong correlation among the manifest variables. This finding was consistent with the results of the pilot study which also showed the extreme dependency among the hypothesized factors. Because of severe multicollinearity threat, the 4-factor and 3-factor structures were

considered inappropriate to describe the underlying latent dimensions for this scale. As the positive definiteness indicate that data can be explained by fewer dimensions (Blunch, 2008), the eventual decision was to test and compare 2-factor and 1-factor solutions for this scale. For the 1-factor model, the Satorra-Bentler corrected chi-square indicated a discrepancy between the observed and hypothesized model, $\chi^2(135) = 313.38, p = .00$. However, the goodness-of-fit statistics provided evidence for a good model fit: RMSEA = .07, CFI = .98, TLI = .98, SRMR = .05. In this model, all parameter estimates made a significant contribution to the model. Specifically, the factor loadings were ranging from .54 to .84. In the 2-factor model, the Satorra-Bentler corrected chi-square improved but still indicated a discrepancy between the observed and hypothesized model, $\chi^2(137) = 276.21, p = .00$. Similar to the 1-factor model, the model was evaluated good based on the goodness-of-fit statistics: RMSEA = .07, CFI = .98, TLI = .98, SRMR = .05. In this model, the first factor included the items on *efficacy for teaching* including classroom management, student engagement, instruction, and evaluation, while the second factor involved items on *efficacy for parent involvement*. The parameter loadings ranged from .57 to .85 for efficacy for teaching and from .61 to .78 for the parent involvement dimension. They were all statistically significant. As the parent involvement dimension as a separate construct is considered important given that it is at the heart of early childhood education, the 2-factor model was selected over the 1-factor model to describe the underlying latent structure of TSES-ECE. The correlation between the efficacy for teaching and efficacy for parent involvement was .88. The reliability was ensured as the Cronbach's alpha values were .80 for efficacy for parent involvement and .93 for efficacy for teaching. Figure 5 displays the results of the confirmatory factor analysis for the 2-factor model of TSES-ECE with 18 items.

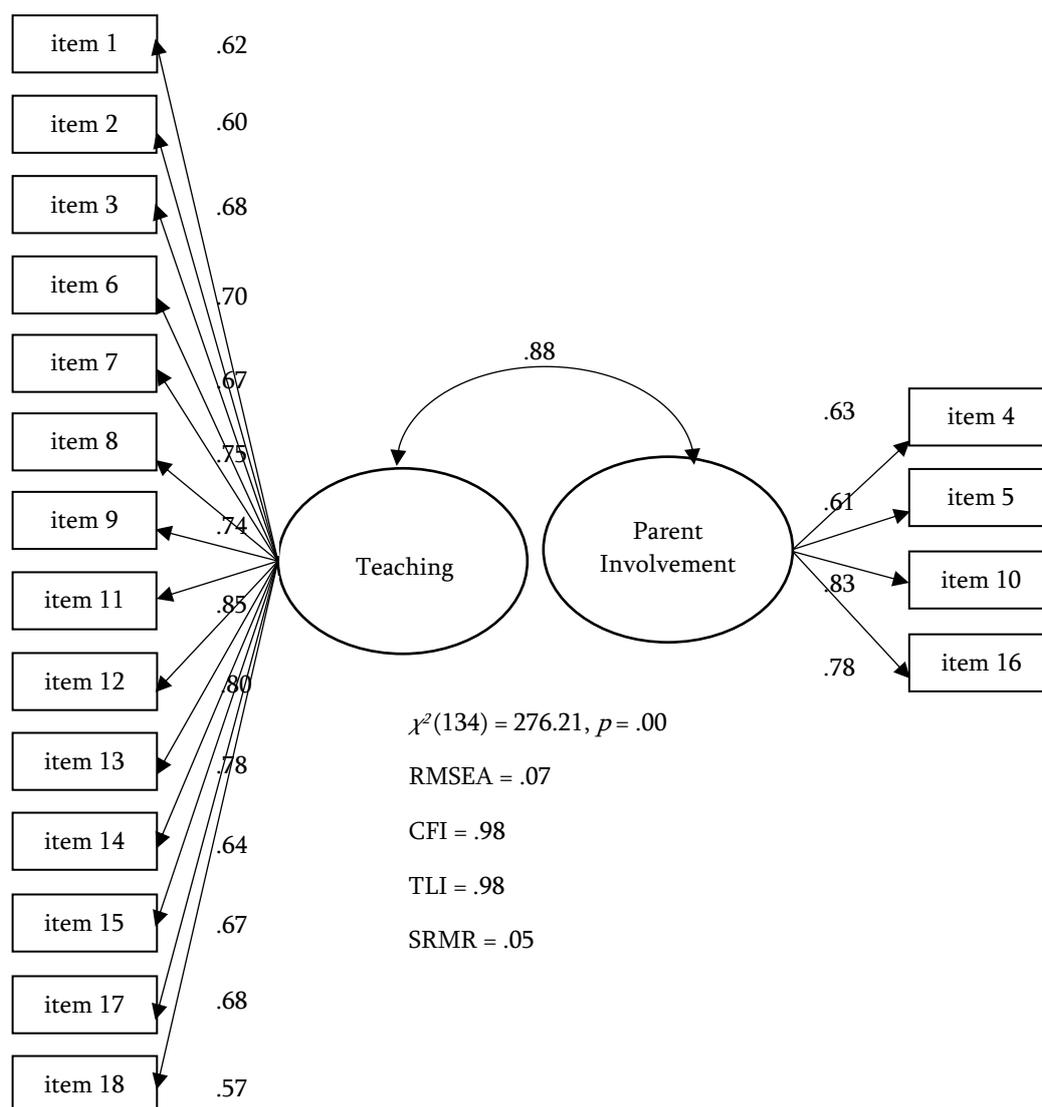


Figure 5. Confirmatory factor analysis results for the two-factor model of TSES-ECE

3.4.6. Validity and reliability of Teacher Efficacy Scale (TES)

The hypothesized model proposed a two-factor structure for TES with nine items. On the basis of the theoretical assumptions, in this model, specifically, it was hypothesized that items 1, 2, 3, 4, and 9 would predict the construct of general teaching efficacy, while the items 5, 6, 7, and 8 would predict the early childhood teachers' personal teaching efficacy. Given the previous findings, personal and general teaching efficacy were not allowed to correlate with each other in the proposed model.

The estimation of this model with robust maximum likelihood with a sample of 249 early childhood teachers in the pilot phase of this study resulted in Satorra-Bentler corrected $\chi^2(27) = 25.85, p = .53$. As the exact-fit hypothesis was not rejected, it was concluded there was not a discrepancy between the observed and model-implied covariances. The goodness-of-fit statistics were also indicative of good fit: RMSEA = .00, CFI = 1.00, TLI = 1.00, SRMR = .07. As another sign of good model fit, the parameter estimates were all statistically significant and ranged from .59 and .74 for general teaching efficacy, and from .76 and .88 for personal teaching efficacy. There was evidence for the internal consistency of the items from the subscales of TES given that the Cronbach's alpha value was .79 for general teaching efficacy and .84 for personal teaching efficacy. Figure 6 displays the results of the first confirmatory factor analysis for TES.

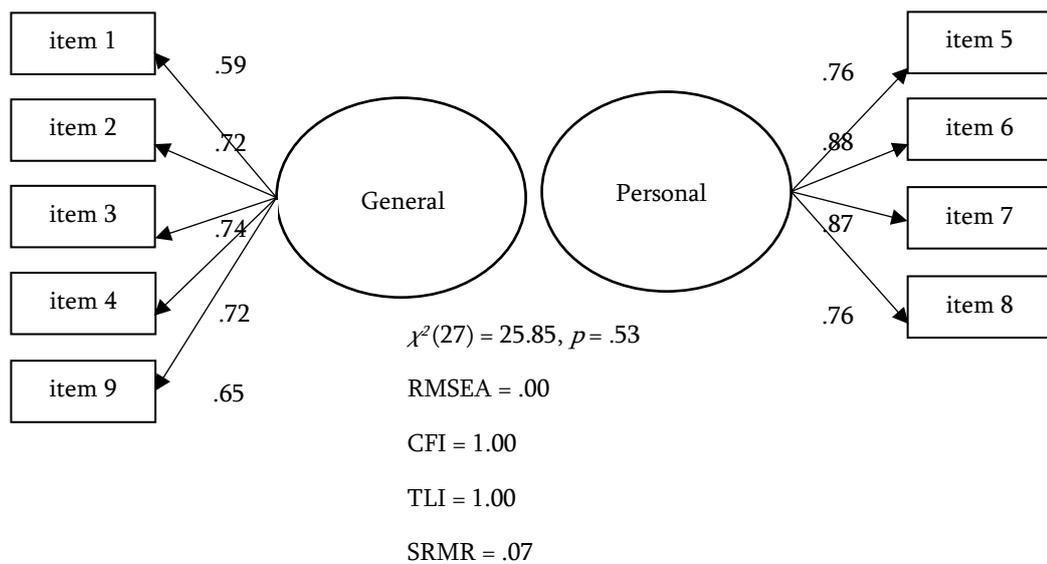


Figure 6. Results of the first confirmatory factor analysis for TES.

This two-factor model was tested again with a sample of 251 early childhood teachers in the main phase of the study. The Satorra-Bentler corrected chi-square value was statistically significant, $\chi^2(27) = 49.38, p = .01$, indicating a discrepancy between the observed and model-implied covariances. However, multiple goodness of fit statistics provided evidence for the good model fit: RMSEA = .06, CFI = 0.98, TLI = 0.97, SRMR = .06. For the improvement of this model, the modification indices suggested adding an

error covariance between item 4 (“If parents would do more for their children, I could do more.”) and item 1 (“The amount a student can learn is primarily related to family background.”). Both items address the influence of parents on children and so are considered very much related to each other regarding their content. Also, after the modification, the Satorra-Bentler scaled chi-square was not any more significant, $\chi^2(26) = 35.84, p = .09$. There was also improvement in the goodness of fit statistics like the following: RMSEA = .04, CFI = 0.99, TLI = .99, SRMR = .05. Therefore, the final decision was to accept this modified two-factor model for TES. In this model, the estimates were ranging from .49 to .77 for general teaching efficacy and from .71 to .80 for personal teaching efficacy. More importantly, all these estimates were statistically significant at p -value of .05. Consistent with the findings from the pilot phase, the Cronbach’s alpha value was .79 for general teaching efficacy and .84 for personal teaching efficacy. Figure 7 illustrates the results of the second confirmatory factor analysis for TES.

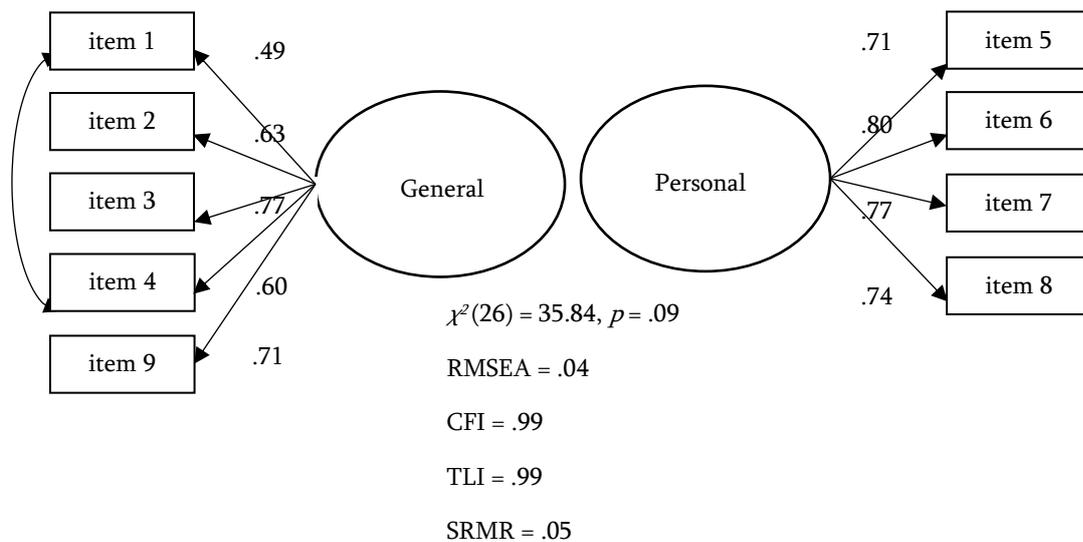


Figure 7. Results of the second confirmatory factor analysis for TES.

3.5. Data Collection Tools in the Qualitative Study

The qualitative data were collected by means of face to face individual interviews with teachers and unstructured classroom observations. Particularly, guided interviews that

allows the participants to frame and structure their responses to a large extent (Marshall & Rossman, 2011) were conducted to uncover the beliefs of early childhood teachers about high quality early childhood education. For this end, an interview protocol including guiding questions and probes was prepared by the researcher and reviewed by the supervisors in the present study. Sample questions were as follows: What comes to your mind primarily when I say high quality early childhood education? What should be the characteristics of a high quality early childhood education program? What do you think about the level of quality in early childhood education in Turkey? (see Appendix D for interview questions)

On the other side, the qualitative classroom observations had an open-ended nature. The researcher with a focus on teacher-child interactions attempted to record anything happened in the classroom during the course of the observation period. The observations lasted at least 2 hours in each classroom. The observer limited her interaction with the teacher and children in the class and did not intervene in the flow of the activities and dialogues.

3.6. Trustworthiness of the Qualitative Study

Based on the guideline proposed by Lincoln and Guba (1986), the trustworthiness of the present qualitative study was assessed considering its credibility, transferability, dependability, and confirmability. According to Krefting (1991), credibility of a qualitative study refers to its truth value, while transferability refers to the applicability of results to other contexts and settings or with other groups. Dependability pertains to the consistency of the findings if it is replicated, whereas confirmability denotes to the neutrality in a qualitative study (Krefting, 1991). A number of strategies (e.g., prolonged engagement, reflexivity, peer examination, triangulation, and audit) were offered in the literature to establish these four main aspects of trustworthiness in qualitative research (e.g., Guba, 1981; Krefting, 1991; Shenton, 2002; Yıldırım & Şimşek, 2013).

Specifically, in the present study, the supervisors and a peer with qualitative research experience scrutinized the research design and provided continuous feedback during the research process regarding the preferences and interpretations. Gathering different visions by means of debriefing contributed to the credibility, dependability, and also confirmability in this study as it helped the researcher discuss alternative approaches, check the appropriateness of the decisions, and reflect on her perceptions and feelings on the research process. The supervisors especially evaluated the appropriateness of the research procedures and process given generally accepted practice. They primarily reviewed if appropriate methods were used to address the research questions and if the emerging codes and themes addressed these questions or not. On the other side, the peer checked if the interpretations were consistent with the available data. For this end, she examined a sample of raw data to confirm the coding list developed for two interviews and two observations. Also, the researcher spent adequate time in the field to collect in-depth data and continuously reflected on the quality of data she collected and on her influence on the data during the data collection process to ensure the credibility in the study. Moreover, as part of meeting dependability and transferability, a dense description of the research methods, sample, and findings was presented to enable scholars to replicate the current study and evaluate the applicability of the results to other samples and contexts. The researcher's background in qualitative research and familiarity with the culture of the participants are moreover considered being helpful in establishing rigor in this qualitative study.

3.7. Data Collection Procedure

Both the quantitative and qualitative data were collected concurrently by the researcher in school environments in the present study. Initially, the researcher visited 74 schools in Ankara to ask for their permission to administer the data collection instrument to early childhood teachers for pilot testing. The instruments were given in closed envelopes to the volunteer teachers in schools that accepted to participate in the research. The researcher picked up the envelopes on a later date determined by the participants. This

piloting phase lasted for seven successive weeks in school days; namely between November 18, 2015 and January 6, 2016 during the fall semester of 2016-2017 academic year.

After the instrument was put into its final form, the study was reviewed by Human Subjects Ethics Committee at Middle East Technical University and also by Provincial Directorate of National Education and approved by these two parties without any request for revision (see Appendix F and G). This review process lasted for nearly two months (February 8, 2016-April 5, 2016) and followed immediately by the main data collection phase. In the main phase, the researcher visited 65 schools to inform them about the purpose and the method of this research project and ask for their participation. This process including gaining the cooperation of schools and teachers, data collection via teacher survey, classroom observation, and teacher interviews lasted nearly for nine successive weeks and took place in the spring semester of 2016-2017 academic year between April 7, 2016 and June 11, 2016.

In the main phase, in all schools, the instruments were given to the volunteer teachers in closed envelopes and picked up on a date determined by the participants. The researcher sometimes had to visit some schools more than twice because some of the teachers either reported that they forgot completing the surveys or did not find time to complete them for the scheduled date. Classroom observations were conducted on the dates determined by the teachers and approved by the school administration. In three cases, the schools did not provide the researcher with the standards determined for classroom observations in this study despite being informed about them. Therefore, the researcher was not able to use these data despite being in these classrooms for the whole school day. The researcher also conducted the interviews with the volunteer teachers in the pre-scheduled times. Some of the interviews took place in the class environment during free play period of children in a highly noisy environment because the teachers were not willing to spend time before and after the school time for the interviews. The greatest challenge the researcher encountered in the whole data collection process was the negative attitude of

some school administrators and teachers for participation in research projects either because they viewed these studies useless for the practice or felt tired of the frequent requests for participation in studies from different researchers in the same time.

3.7.1. Data collection process with CLASS

The classrooms were observed following the guideline offered in the manual prepared for CLASS. Specifically, in this manual, Pianta et al. (2008) suggest that the entire CLASS observation continue for at least 2 hours in four cycles. In each cycle, the observer should take short notes with a focus on classroom interaction and mostly on the primary teacher for 20 minutes. This session is followed by a 10-minute period for making judgments about the observations and scoring on a 7-point scale. On this 7-point scale, as the ratings increase, the level of teacher-child interaction quality increases. At the end of the entire observation, individual cycle scores for each dimension are averaged to get the composite scores for the three domains.

Pianta et al. (2008) recommended that the observations should start at the beginning of the school day and cover both structured and unstructured times of a school day including music, art, transitions, language arts and/or academics, free choice, and centers. The observer should only stop observing in recess time. In the manual, it was highlighted that while making judgments, the observer must remain objective and assign scores on the basis of what is observed. It is essential for CLASS that each cycle of observation is judged independently. The rating should characterize the whole observation but not a single occurrence. The observer should not seek perfection to score on the high end for each dimension.

In the present study, to control for the effect of school time, observations took place both in the morning (59.6%, $n = 28$) and afternoon (40.4%, $n = 19$) sessions of the schools. The observation time was at least 2 hours that included four observation cycles each of which lasted 30 minutes. When the school administration and teachers accepted, and there was

an activity to be observed rather than recess, the observed time was extended for improving reliability. Especially, 59.6% of the cases ($n = 28$) was observed for 2.5 hours in five cycles, and 14.9% of the cases ($n = 7$) was observed for 3 hours in six cycles. The remaining was observed for 2 hours in four cycles (25.5%, $n = 12$). All activities that took place during the observation time were watched and coded except snack and mealtime, and unstructured outdoor activities. The focus was on teachers so that children's interactions with any adult other than class teacher were ignored during the observation period.

3.7.2. Reliability of the observation

The researcher participated in pre-k CLASS observation training in Nashville, TN, the USA on July 9-10, 2015 to be a reliable observer. This interactive and informative training covered the intensive study of CLASS for 15 hours in two successive days under the supervision of experts on CLASS. In general, the training experience included lectures on CLASS framework and its dimensions and how to conduct live observations, and also practices and discussions on coding classroom videos using the CLASS measure. Moreover, the researcher studied CLASS manual thoroughly and reviewed the exemplary videos for each dimension from available pre-k video library to deepen her understanding of CLASS as a measure of classroom quality. After then, she took the online CLASS observer reliability test that included the coding of five 20-minute classroom videos. To be judged as a reliable observer, the following criteria are sought by the developers of this tool: (a) across all five videos, 80% of all codes must be within one point of the master codes, (b) for each dimension, at least two out of five codes must be within one point of the master codes.

Across all dimensions, the overall reliability score obtained by the researcher from the test was 88%. Among the five videos coded, the lowest rate of reliability score was 70%, while the researcher achieved a reliability score of 90% and beyond in the four videos coded. Given per domain, her reliability score was 18 out of 20 for emotional support, 14

out of 15 for classroom organization, and 12 out of 15 for instructional support. Although she occasionally assigned scores that were higher than the master codes, these test results overall indicated that the researcher demonstrated a solid understanding of CLASS dimensions and learned to observe accurately and code preschool classrooms with CLASS. Table 10 displays the summary of the researcher’s reliability test results.

Table 10
Reliability Report of the Researcher for CLASS

Reliability per domain and dimension	
Emotional support	18 out of 20
Positive climate	5 out of 5
Negative climate	5 out of 5
Teacher sensitivity	4 out of 5
Regard for student perspectives	4 out of 5
Classroom organization	14 out of 15
Behavior management	5 out of 5
Productivity	5 out of 5
Instructional learning formats	4 out of 5
Instructional support	12 out of 15
Concept development	4 out of 5
Quality of feedback	4 out of 5
Language modeling	4 out of 5
Reliability overview per segment	
Video 1	90%
Video 2	90%
Video 3	100%
Video 4	70%
Video 5	90%

Before the data collection process, the researcher also took online calibration test to refine her CLASS observation skills. In this test, the participants code a classroom video and in return receive immediate feedback about their scoring. On this test, a reliability score of 100% was achieved by the researchers. Table 11 displays the reliability feedback per domain and dimension for the calibration test. Moreover, the researcher conducted a pilot observation in a public pre-primary classroom to hone her observation skills in a real situation. During this pilot study, she was in the classroom for the whole school day and completed six cycles of CLASS observation (3 hours).

Table 11

Results of the Researcher's Calibration Test

Domain / Dimension	Score	Explanation
Emotional support	4 out of 4	You demonstrated a superior understanding of Emotional Support.
Positive climate	✓	Great job scoring this dimension.
Negative climate	✓	Great job scoring this dimension.
Teacher sensitivity	✓	Great job scoring this dimension.
Regard for student perspectives	✓	Great job scoring this dimension.
Classroom organization	3 out of 3	You demonstrated a superior understanding of Classroom Organization.
Behavior management	✓	Great job scoring this dimension.
Productivity	✓	Great job scoring this dimension.
Instructional learning formats	✓	Great job scoring this dimension.
Instructional support	3 out of 3	You demonstrated a superior understanding of Instructional Support.
Concept development	✓	Great job scoring this dimension.
Quality of feedback	✓	Great job scoring this dimension.
Language modeling	✓	Great job scoring this dimension.

3.8. Data Analyses

The research questions in the present study were probed by means of the quantitative and qualitative analyses. Below section introduces the distinguishing features of these analyses.

3.8.1. Quantitative data analyses

The data were explored through descriptive and correlational analyses to address the main research questions in the present study. Path analyses were conducted to investigate the direct and indirect relationships among teacher beliefs and teacher-child interaction quality. Specifically, the path analyses investigated the influence of teacher beliefs on the quality of emotional support, classroom organization, and instructional support separately to keep the model parsimonious considering the sample size. The endogenous variables were teacher beliefs about DAP and DIP, and one domain of teacher-child interaction quality. The exogenous variables involved teacher self-efficacy for teaching

and general teaching efficacy beliefs. Efficacy for parent involvement and personal efficacy were not included in the path analyses because they were highly correlated with self-efficacy for teaching.

Before the path analyses, the data that included responses from 47 early childhood teachers were inspected for the assumptions. The Kolmogorov-Smirnov and Shapiro-Wilk tests indicated that the univariate normality was met for the variables included in the path analysis except for teacher-child interaction quality in classroom organization (CO) and teacher beliefs about DAP. The skewness and kurtosis values of these two variables, however, indicated that the deviation from the normality was not serious as their skewness values were below 3 (-.60 for DAP, -1.38 for CO) and kurtosis values were below 10 (-.51 for DAP, 1.87 for CO) (Kline, 2011). The histograms and Q-Q plots supported this finding as well. Moreover, Mardia's test results indicated that multivariate normality was met in the three models tested in this study (i.e., teacher beliefs and emotional support, teacher beliefs and classroom organization, and teacher beliefs and instructional support). The scatterplots indicated that the linearity was met between each endogenous and exogenous variable included in the path analysis.

Field (2009) noted that Cook's distance values greater than 1 might point to influential cases in regression models. In the current data set, in all models tested, there was not a case with a Cook's distance score beyond 1. The Mahalanobis values also supported the lack of influential cases in the sample. Especially, in the models that tested the relationship between domains of teacher-child interaction quality and teacher beliefs, the highest Mahalanobis value was 10.485 and considerably below the critical value of $\chi^2(4) = 18.467$, $p = .001$. For the models that examined the relationship between teacher beliefs about DAP and DIP, and teacher efficacy beliefs, the highest Mahalanobis score was 7.609. This value was below the critical value of $\chi^2(2) = 13.816$, $p = .001$, as well.

There was not any multicollinearity among teacher beliefs about DAP and DIP, general efficacy, and efficacy for teaching, and also between general efficacy and efficacy for

teaching given the tolerance and VIF values. Specifically, the lowest tolerance value was .74, and the highest VIF value was 1.36 for the current data. The independence, linearity, homoscedasticity, and normality of the residuals were tested for each endogenous variable and the specified causal variables (i.e., between DAP and ET and GEFF; between DIP and ET and GEFF; between ES and DAP, DIP, ET, and GEFF; between CO and DAP, DIP, ET, and GEFF; and between IS and DAP, DIP, ET, and GEFF). Field (2009) noted that Durbin-Watson statistics indicate a lack of autocorrelation if they are not below 1 and above 3, and close to 2. This criterion was met in the present study as the statistics ranged from 1.85 to 2.24. Also important, a systematic pattern in the distribution of the residuals was not clear. The normality probability plots indicated approximately a straight diagonal line; however, the deviation in the normal probability plot for the model testing the relation of teacher beliefs with classroom organization was noticeable (see Appendix E). Kolmogorov-Smirnov test indicated that this deviation was significant. Therefore, it is recommended that this violation is taken into consideration in the interpretation of the results because such violations may weaken the analysis if not invalidate them (Tabachnick & Fidell, 2013).

The analyses were conducted with a sample of 47 respondents. For generalizability, Hair et al. (2010) suggested that the ratio of observations to independent variables should never fall below: 5:1 in regression analysis. This study with an approximate ratio of 10:1 met this criterion. Although the current sample size is considered almost adequate for path analysis as at least 50 observations are required to conduct regression analysis (Wilson Van Voorhis & Morgan, 2007), it needs to be noted that a sample size of 50 can detect R^2 values of 23 percent and greater at alpha level of .05 at the power of .80.

3.8.2. Qualitative data analyses

The typical analytical procedures introduced by Marshall and Rossman (2011) were followed in the present study during the qualitative data analysis process. In the first phase, the qualitative data obtained from teacher interviews and classroom observations

were organized for the data analysis. For this end, the audio recorded interviews were verbatim transcribed, and the field notes from the classroom observations were typed in word processing program. The second phase included the immersion in the data. For this purpose, the raw text was read and reread by the researcher to make sense of the interviews and the field notes. As noted by Bradley, Curry, and Devers (2007), reviewing the data without coding helped the researcher familiarize with the key ideas and topics in the data.

After these initial preparations, the data were coded in the light of the purpose of this qualitative study. This was an iterative process in which the researcher moved forth and back between the codes before arriving at a final decision. The codes were mostly formed inductively; that is they were derived from the raw data (Thomas, 2006). Yet, in addition to the use of actual words and behaviors from the data and some creative expression, the researcher took into account the findings of the literature in the development of the codes. A computer software (i.e., MAXQDA) was used by the researcher to facilitate the management of the data coding process.

In the final step of the data analysis, the themes were identified based on the coding list. According to Miles and Huberman (1994), this is moving from first-level coding to pattern coding to reduce large amounts of data into smaller chunks. Yıldırım and Şimşek (2013) especially suggested paying attention to the internal and external consistency in the construction of the themes. The researcher, thus, sought for a theme that best represented the codes grouped under them and also well related to other themes in the study.

3.9. Limitations

This study has four main limitations that should be considered in the interpretation of the results, and below section presents a discussion on them:

First, although the sample size was adequate to conduct the quantitative analysis, it needs to be acknowledged that having larger sample size would improve the power of the statistical tests used in this study and the generalizability of the findings. This limitation was not addressed in this study because it was not feasible for the researcher to extend the duration of data collection process. Classroom observation by nature is a time-consuming data collection method, and the researcher used all available time to observe as many classrooms as possible. Given the limitation on sample size, it is recommended that future research replicate this study with a sample including more classrooms from different regions of Turkey.

Second, the researcher was the single observer in this study, so the results are susceptible to single observer bias. While interpreting the results of this study, it needs to be assumed that different observers would agree with the results obtained in this study. The limitation on inter-rater reliability was not avoided because the use of CLASS requires training and there was not a certified CLASS observer in Turkey with whom the researcher could collaborate during data collection. Despite the threats posed by being a single observer, there is compelling evidence in the current study that the researcher can observe and code classroom interactions reliably using the CLASS measure given the scores from the reliability and calibration tests. Also important, the researcher followed all procedures standardized by the developers of CLASS in data collection process to be an objective observer such as taking notes, making judgments based on the written descriptions, and referring to the manual before giving scores. The researcher did not have any personal contact with teachers before class observations and did not form any hypotheses about their performance. The limitation on inter-rater reliability indicates the need for training individuals who can reliably use classroom observation tools in the field of early childhood education in Turkey.

Third, the self-report data were gathered while measuring early childhood teachers' beliefs in the current study, which is a limitation for the internal validity of the study. In the interpretation of the results, it needs to be considered that participating teachers

might have rated their capabilities at a higher level than they perceived themselves and might have shown agreement with some of the items that they did not actually agree with because of social desirability. The researcher attempted to build rapport with the participants and ensured the confidentiality and anonymity during the data collection process to reduce the effect of social desirability in the scope of this study. Although the use of self-report measures has been the common data collection method in studies on teacher beliefs in literature to date, it is suggested that scholars in this strand of research examine how teachers judge and make a decision about their capabilities and their beliefs about teaching.

Fourth and last, as Layzer and Goodson (2006) pointed out, it is a limitation to depict only one-time snapshots of classrooms during observations. It is noteworthy to mention that the dynamic and complex nature of classrooms can bring about variations in the quality of teacher-child interaction during a day and over the course of a school year (Meyer, Cash, & Mashburn, 2011) although there is evidence for the stability of teacher-child interaction quality during the first two hours of a day (Curby, Grimm, & Pianta, 2010) and from one day to another at different times of a year (Pianta, 2011). Moreover, it may be more difficult to capture if teachers change their behaviors due to being observed during one-time classroom observations. In the present study, the data reflected what happened on one specific day in a classroom because it was not feasible for the researcher to extend the duration of classroom observations due to time constraints. Yet classroom observations were conducted in four independent cycles on the same day. While making arrangements for classroom observations, the researcher informed teachers about that she would like to conduct observations on a typical school day for them and observe their usual way of teaching in their classrooms. To make teachers comfortable with observation process, the researcher ensured that teachers knew that the data would be kept confidential and used only for research purposes. Still, it is suggested that high-stakes decisions about classroom quality be made based on multiple classroom observations by different observers throughout a school year.

CHAPTER 4

RESULTS

This chapter addresses the research questions based on the quantitative and qualitative analyses of data. The research questions of the study were as follows:

1. What is the level of teacher-child interaction quality in observed classrooms?
2. What is the level of early childhood teachers' self-efficacy and general teaching efficacy in the observed classrooms?
3. To what extent do early childhood teachers espouse beliefs about developmentally appropriate and inappropriate practices in observed classrooms?
4. Is there a significant correlation between the level of teacher-child interaction quality and teacher beliefs in observed classrooms?
5. Do teacher beliefs exert any direct or indirect influence on the level of teacher-child interaction quality in observed classrooms?
6. What are the core beliefs of teachers in classrooms with high and low quality about high quality early childhood education? Is there a convergence and difference between more and less effective early childhood teachers regarding their beliefs about good early childhood education?
7. What characterizes the classroom practices of early childhood teachers with higher efficacy and more developmentally appropriate beliefs and with lower efficacy and less developmentally appropriate beliefs? Is there a convergence and difference between teachers with more and less desirable beliefs regarding their classroom practices?

4.1. Teacher-Child Interaction Quality in Classrooms

The quality of teacher-child interaction was investigated through structured classroom observations with CLASS in a sample of 47 public preschool classrooms in Ankara, Turkey in the present study. Table 12 illustrates the descriptive statistics regarding the level of teacher-child interaction quality in observed classrooms. Given the mean scores on the three domains of CLASS, the quality of emotional support was at mid-range ($M = 4.97$, $SD = .90$), the quality of classroom organization was nearly at high range ($M = 5.79$, $SD = .87$), and the quality of instructional support was close to low range ($M = 2.47$, $SD = .57$) in observed classrooms. The total mean score of the sample for CLASS was 4.41 ($SD = .67$), ranging from 2.31 ($n = 1$) to 5.64 ($n = 1$). Given standard deviations for each domain, of note was that the mean values of the classes on teacher-child interaction quality were not dispersed largely; in contrast, they tended to be very close to the mean of the sample.

Table 12

Teacher-Child Interaction Quality in the Observed Classrooms (n = 47)

	<i>M</i>	<i>SD</i>
Emotional support	4.97	.90
Positive climate	5.50	1.03
Teacher sensitivity	4.87	1.39
Regard for student perspective	4.55	1.07
Classroom organization	5.79	.87
Behavior management	6.27	1.22
Productivity	6.03	.94
Instructional learning formats	5.05	1.03
Instructional support	2.47	.57
Concept development	2.26	.60
Quality of feedback	2.37	.68
Language modeling	2.78	.65
CLASS total score	4.41	.67

Note. On a 7-point scale (1-2: low range; 3-4-5: mid-range; 6-7: high range).

Considering the dimensions of CLASS, teacher-child interaction quality was the highest for behavior management in the domain of classroom organization ($M = 6.27$, $SD = 1.22$). The quality of classrooms was also rated at high range regarding productivity in this domain ($M = 6.03$, $SD = .94$). In the domain of emotional support, the classrooms were better in relation to positive climate ($M = 5.50$, $SD = 1.03$) than teacher sensitivity ($M =$

4.87, $SD = 1.39$) and regard for student perspectives ($M = 4.55$, $SD = 1.07$). Although the dimension on negative climate was excluded from the domain of emotional support for model validation, it is noteworthy to mention that the level of quality was on average at high range for this dimension in the sample ($M = 6.87$, $SD = .28$). The lowest level of quality was observed in concept development in the domain of instructional support ($M = 2.26$, $SD = .60$) in the current sample, followed with the two other dimensions of this domain, namely quality of feedback ($M = 2.37$, $SD = .60$) and language modeling ($M = 2.78$, $SD = .65$).

Figure 8 shows the distribution of the scores on the three domains of CLASS for the observed classrooms. In the sample, in the domain of emotional support, there were only four classrooms (8.51%) at the highest range with a score of 6 and beyond, namely between 6.07 and 6.80. At the lowest range in this domain, there were two classrooms with a score below 3, namely 2.67 and 2.83. The number of classrooms with a score of 6 and beyond, namely between 6 and 6.80, was twenty-eight (59.57%) in the domain of classroom organization. In this domain, only one classroom had a score below 3 (2.80). However, there was not any case with a score of 6 and beyond on the domain of instructional support in the observed sample of 47 teachers. The highest mean score for this domain was 3.93 ($n = 1$). On the contrary, at the lowest range in this domain, eleven teachers (23.4%) scored 2 or below and their scores were ranging from 1.47 and 2.

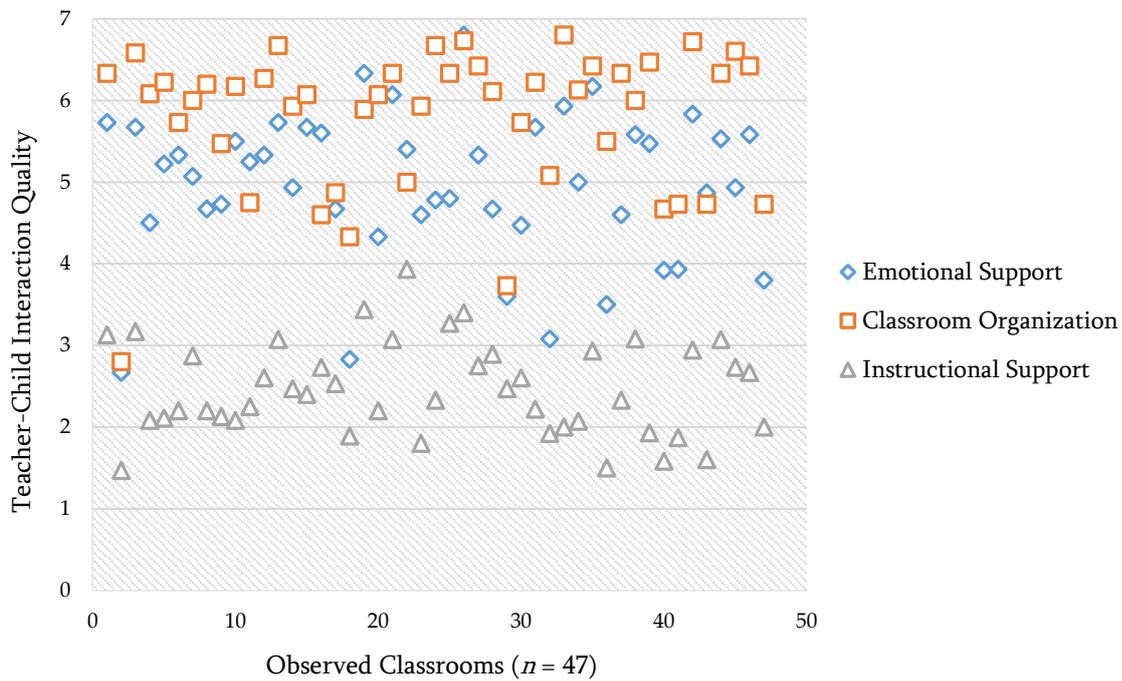


Figure 8. Distribution of the scores on the domains of CLASS.

Figure 9 shows the distribution of the classroom scores on the total CLASS. Given the total mean scores obtained from CLASS, in the sample of 47 classrooms, there was not any case at the highest range, while one classroom was rated below the mid-range (2.31) and the scores of the rest were between 3.02 and 5.64.

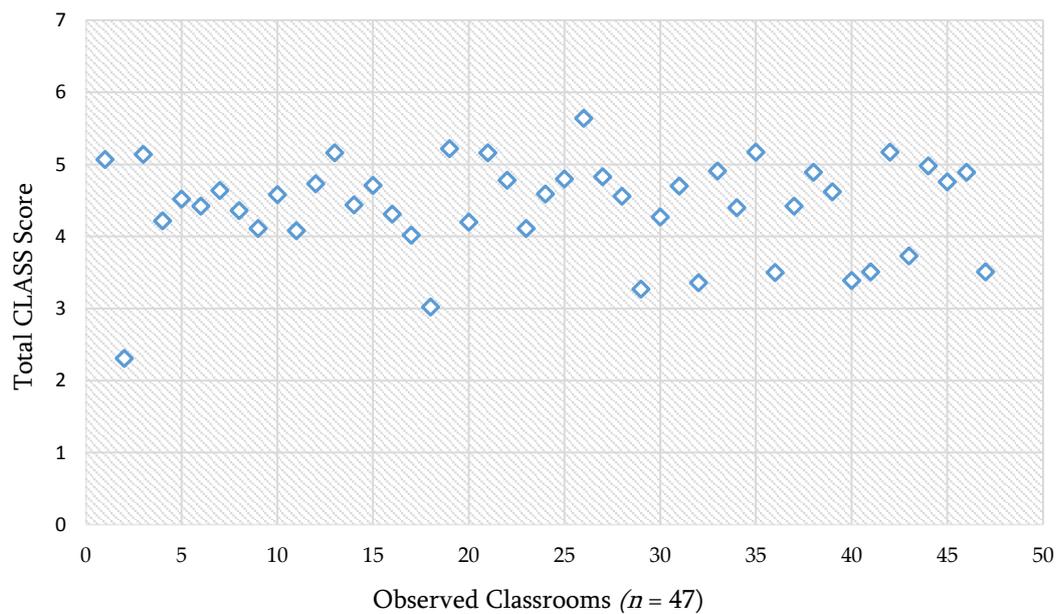


Figure 9. Distribution of the classrooms on the total CLASS score.

When teacher-child interaction quality in three domains was compared, the mean scores revealed that the observed preschool teachers were better at classroom organization ($M = 5.79$, $SD = .87$) than emotional support ($M = 4.97$, $SD = .90$) and instructional support ($M = 2.47$, $SD = .57$) and also better at emotional support than instructional support. One-way repeated measures of ANOVA indicated that the difference in the mean scores for the three domains of teacher-child interaction quality was statistically significant, $F(2, 92) = 521.95$, $p = .00$, and was large (partial eta squared = .92). The posthoc test with Bonferroni correction further revealed that the mean score on any domain was significantly different from the two other domains.

4.2. Efficacy Beliefs of Early Childhood Teachers

The preschool teachers on average reported a level of self-efficacy beyond 7 on the 9-point response scale for both teaching ($M = 7.30$, $SD = .67$) and parent involvement ($M = 7.46$, $SD = 1.00$). One-way repeated measures of ANOVA indicated that the difference in the mean scores of the participants for efficacy for teaching and parent involvement was not statistically significant, $F(1, 46) = 2.77$, $p = .10$. On the other side, their mean score for general teaching efficacy was beyond 4 on the 6-point response scale ($M = 4.17$, $SD = 1.01$). It was noticeable that they had a higher sense of personal teaching efficacy ($M = 5.03$, $SD = .79$) than general teaching efficacy and this was a significant difference, $F(1, 46) = 19.59$, $p = .00$, partial eta squared = .30. Figure 10 displays the distribution of the participants regarding their level of efficacy.

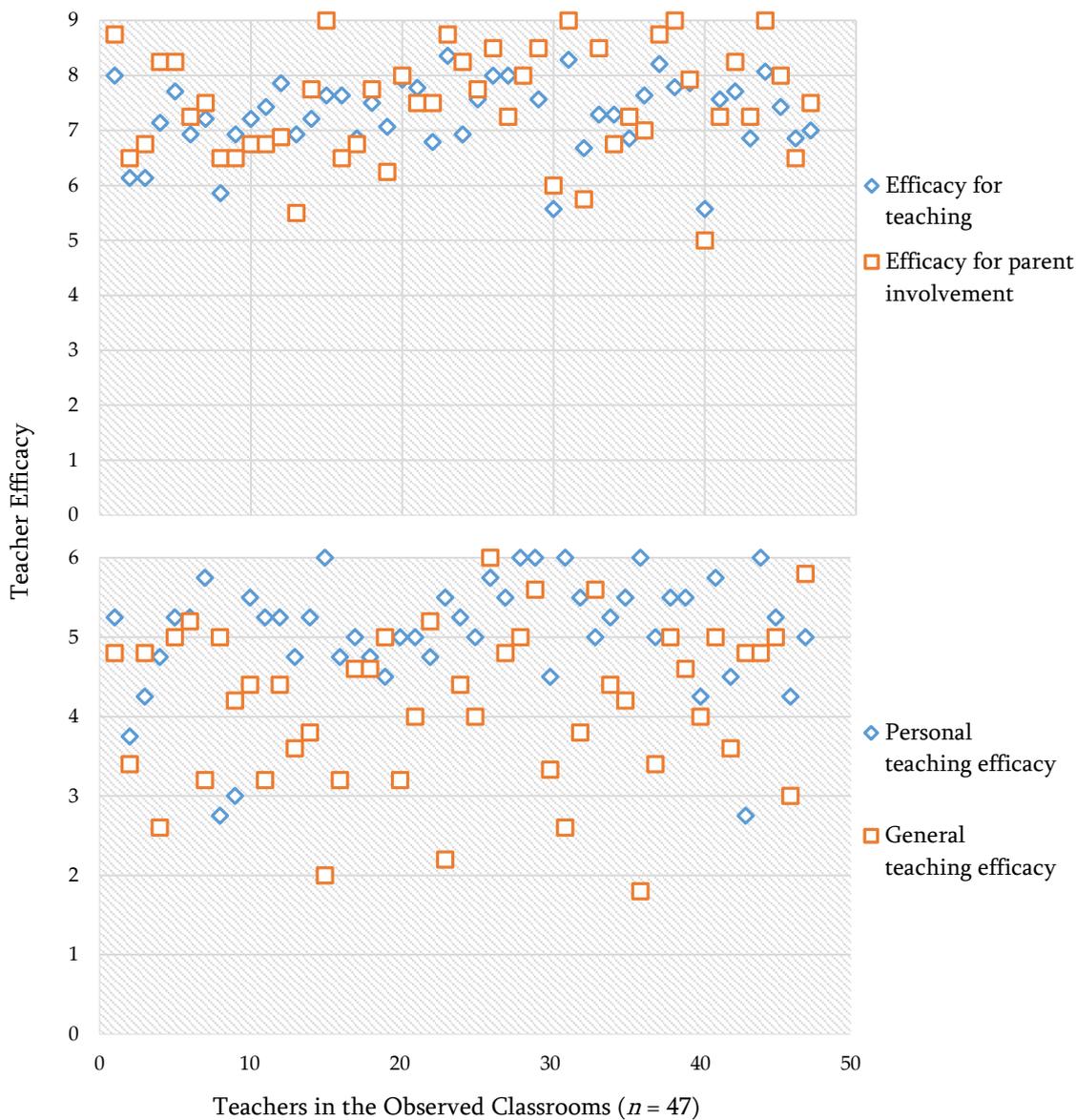


Figure 10. Distribution of the early childhood teachers' level of efficacy.

Given the scores for each item, in the domain of self-efficacy for teaching, the teachers perceived themselves most capable of identifying children whose development are different from others ($M = 7.62, SD = .96$) and least capable of motivating disengaged children to actively participate in learning activities ($M = 6.64, SD = 1.28$). In relation to parent involvement, they reported the highest sense of efficacy for involving children's families in class and school activities ($M = 7.61, SD = 1.33$), and the lowest level of efficacy for helping families in supporting their children's development ($M = 7.23, SD = 1.15$).

4.3. Early Childhood Teacher Beliefs about DAP and DIP

The mean scores indicated that the preschool teachers in the observed classrooms adopted developmentally appropriate practices (DAP) to a greater extent ($M = 4.46$, $SD = .37$) than developmentally inappropriate practices (DIP) ($M = 2.77$, $SD = .64$). One-way repeated measures ANOVA further revealed that this was a significant and large difference, $F(1, 46) = 273.71$, $p = .00$, partial eta squared = .86. Given that the lowest mean score obtained for DAP was 3.62, it was concluded that all preschool teachers in this sample supported DAP at least to a mediocre level. In relation to DIP, the number of preschool teachers with a score of 3 (i.e., fairly important) and beyond was sixteen. That is, 34.04% of the sample reported at least a mediocre level of support for DIP. Figure 11 shows the distribution of teachers regarding their level of support for DAP and DIP.

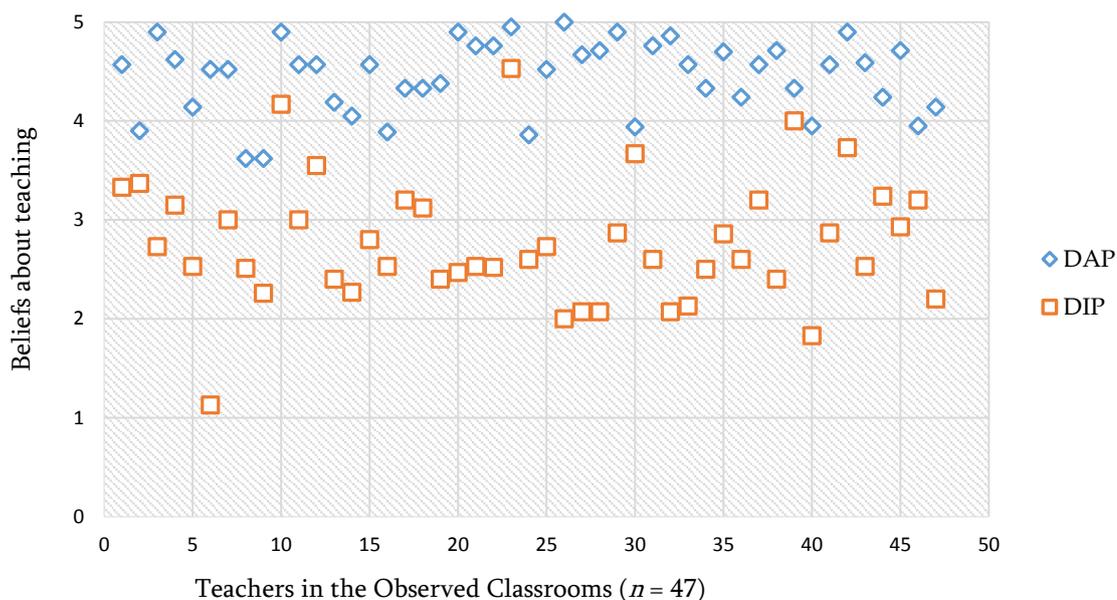


Figure 11. Distribution of the participants regarding support for DAP and DIP.

Specifically, the four aspects the preschool teachers considered significant for early childhood education were supporting children's development of positive feelings toward learning ($M = 4.85$, $SD = .36$), supporting children's development of self-esteem ($M = 4.79$, $SD = .41$), organizing activities based on children's interests ($M = 4.72$, $SD = .45$), and providing daily opportunities for children to interact with peers for developing social

skills ($M = 4.71$, $SD = .54$). On the other side, they disagreed most with the following four items: following a prescribed curriculum without considering children's interests or current conditions ($M = 1.97$, $SD = 1.29$), using one approach for reading and writing instruction ($M = 2.18$, $SD = 1.27$), planning activities for fun without connection to program goals ($M = 2.21$, $SD = 1.25$), and children's coloring of pre-drawn forms ($M = 2.21$, $SD = 1.08$). Of note is that the developmentally inappropriate practice item the preschool teachers agreed most was teachers' use of tangible rewards to motivate children to participate in activities that they do not really want to do ($M = 3.83$, $SD = 1.05$).

4.4. Correlations between Teacher-Child Interaction Quality and Teacher Beliefs

The results indicated that teacher self-efficacy for parent involvement (.31) and teaching (.31) were significantly associated with teacher-child interaction quality in the domain of classroom organization. There was also a significant correlation between teacher self-efficacy for teaching and the total CLASS score (.30). That is, the quality of classroom organization was higher in the classrooms of preschool teachers who reported a higher sense of self-efficacy both for teaching and parent involvement. Moreover, preschool classrooms had a higher total CLASS score when teachers reported a higher sense of self-efficacy for teaching. However, there was not any significant influence of personal teaching efficacy and general teaching efficacy and the beliefs about DAP and DIP on either three domains of teacher-child interaction quality or the total CLASS score.

Of note was that the domains of teacher-child interaction quality were positively and strongly connected to each other. Namely, the correlation was .70 between emotional support and classroom organization, .65 between emotional support and instructional support, and .42 between classroom organization and instructional support. The findings also highlighted the remarkable relationships among teacher beliefs. Specifically, the preschool teachers' beliefs about developmentally appropriate practice were significantly related to their self-efficacy beliefs for both teaching (.49) and parent involvement (.43), and also personal teaching efficacy (.50), while the beliefs about developmentally

inappropriate practice were significantly linked to general teaching efficacy beliefs (-.35). In other words, the preschool teachers who reported a higher sense of self-efficacy were more likely to espouse beliefs about DAP and those who reported a higher level of general teaching efficacy were less likely to espouse beliefs about DIP. Table 13 illustrates the inter-correlations among the domains of teacher-child interaction quality and different aspects of teacher beliefs examined in this study.

Table 13
Inter-relationships among the Variables of the Study (n = 47)

Variable	1	2	3	4	5	6	a	b	c
a. CLASS - Emotional support	.22	.27	.12	.15	.25	-.04	-		
b. CLASS - Classroom organization	.31*	.31*	.21	.00	.22	.03	.70**	-	
c. CLASS - Instructional support	.15	.15	.15	.27	.27	-.08	.65**	.42**	
d. CLASS - Total score	.28	.30*	.20	.15	.28	-.03	.93**	.86**	.75**
1. Self-efficacy for parent involvement	-								
2. Self-efficacy for teaching	.72**	-							
3. Personal teaching efficacy	.48**	.62**	-						
4. General teaching efficacy	.06	-.08	-.07	-					
5. Beliefs about DAP	.43**	.49**	.50**	.08	-				
6. Beliefs about DIP	.18	.18	.06	-.35*	.12	-			

Note. *p < .05, ** p < .01

The canonical correlation analysis was also performed to investigate the relationship between the two sets of variables including teacher beliefs and teacher-child interaction quality. The set of teacher beliefs involved self-efficacy for teaching, self-efficacy for parent involvement, general teaching efficacy, beliefs about DAP, and beliefs about DIP, while the second set included emotional support, classroom organization, and instructional support. Although the results indicated that the three canonical variate pairs were not statistically significant at the alpha level of .05, the correlation between the variates in the first pair (.39, $\chi^2(15) = 11.77, p = .70$) accounted for a meaningful overlapping variance, which was namely 15%. In this model, the canonical variate on teacher beliefs explained 10% of the variance in the set of teacher-child interaction quality, while the canonical variate on teacher-child interaction quality explained 5% of the variance in the set of teacher beliefs. All variables were correlated to the canonical variate except beliefs about DIP that had a loading below the cutoff value of .30. The results indicated that a combination of lower self-efficacy both for teaching and parent

involvement, lower general teaching efficacy, and lower support for DAP was associated with lower levels of emotional support, classroom organization, and instructional support. Figure 12 illustrates the loadings and canonical correlations for the first canonical variate pair between teacher beliefs and teacher-child interaction quality.

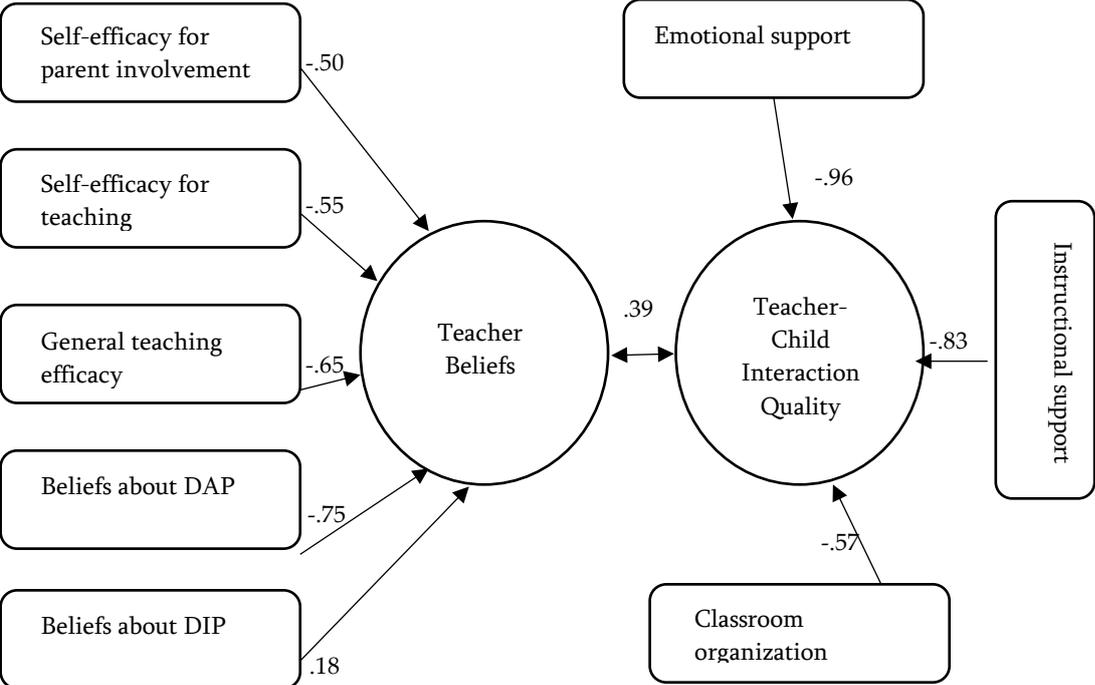


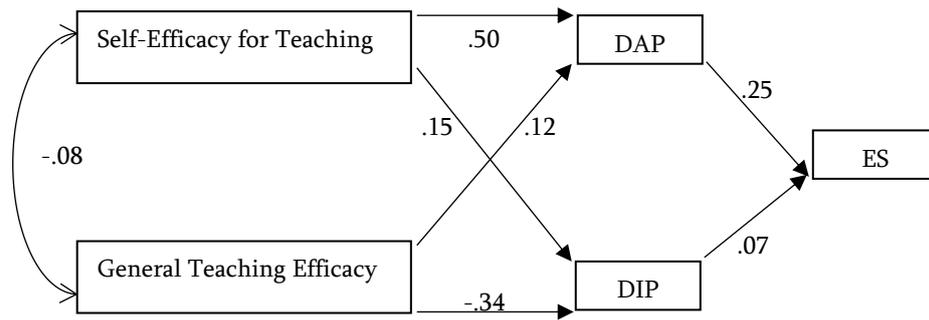
Figure 12. Canonical correlation analysis results for the first canonical variate.

4.5. Direct and Indirect Influences of Teacher Beliefs on Teacher-Child Interaction Quality

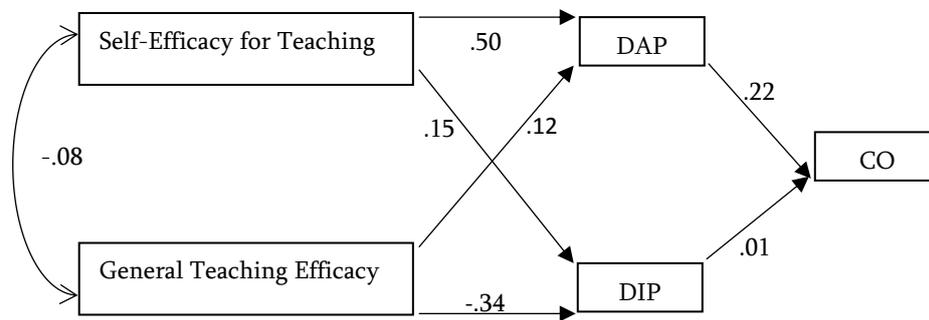
The three separate path analyses were performed to investigate the direct and indirect relationships among teacher self-efficacy for teaching, general teaching efficacy, teacher beliefs about DAP and DIP, and one domain of teacher-child interaction quality. Specifically, the analyses addressed if early childhood teachers’ efficacy for teaching and general teaching efficacy indirectly influenced any domain of teacher-child interaction quality and if there were any direct effects of beliefs about DAP and DIP on each domain of teacher-child interaction quality. The hypotheses for the three models were stated below:

1. Teacher self-efficacy for teaching and general teaching efficacy would predict teacher beliefs about DAP and DIP and the beliefs about DAP and DIP would predict the quality of emotional support. (Model on emotional support)
2. Teacher self-efficacy for teaching and general teaching efficacy would predict teacher beliefs about DAP and DIP and the beliefs about DAP and DIP would predict the quality of classroom organization. (Model on classroom organization)
3. Teacher self-efficacy for teaching and general teaching efficacy would predict teacher beliefs about DAP and DIP and the beliefs about DAP and DIP would predict the quality of instructional support. (Model on instructional support)

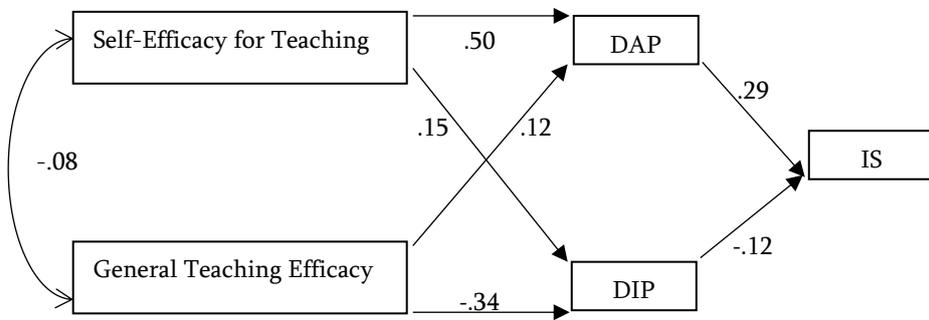
Figure 13 displays the standardized solutions for the models tested. The findings indicated that there was not a significant discrepancy between the hypothesized models and the observed correlations in the data. In each model, the chi-square values were statistically non-significant (i.e., $\chi^2(3) = 2.94, p = .40$ for the model on emotional support; $\chi^2(3) = 3.06, p = .38$ for the model on classroom organization; $\chi^2(3) = 3.12, p = .37$ for the model on instructional support). The goodness-of-fit statistics also provided support for the good fit in each model. The statistics were as follows: RMSEA = .00, CFI = 1.00, TLI = .99, SRMR = .06 for the model on emotional support, RMSEA = .02, CFI = .99, TLI = .98, SRMR = .06 for the model on classroom organization, RMSEA = .03, CFI = .99, TLI = .95, SRMR = .06 for the model on instructional support.



$\chi^2(3) = 2.94, p = .40, RMSEA = .00, CFI = 1.00, TLI = .99, SRMR = .06$



$\chi^2(3) = 3.06, p = .38, RMSEA = .02, CFI = .99, TLI = .98, SRMR = .06$



$\chi^2(3) = 3.12, p = .37, RMSEA = .03, CFI = .99, TLI = .95, SRMR = .06$

Figure 13. Standardized solutions for the models on emotional support (ES), classroom organization (CO), and instructional support (IS).

The results showed that self-efficacy for teaching significantly predicted teacher beliefs about DAP (.50), while general teaching efficacy beliefs had a significant influence on teacher beliefs about DIP (-.34). Specifically, teacher self-efficacy beliefs and general teaching efficacy beliefs explained 26% of the variance in teacher beliefs about DAP and 14% of the variance in teacher beliefs about DIP. These results demonstrated that

preschool teachers' with a higher sense of efficacy for teaching endorsed developmentally appropriate beliefs to a greater extent, whereas having a higher sense of general teaching efficacy was associated with lower levels of support for developmentally inappropriate practices.

The efficacy beliefs including self-efficacy and general teaching efficacy did not have any significant indirect effects on teacher-child interaction quality. The teacher efficacy beliefs explained a very small variance in classroom quality; namely, 2% of the variance in the quality of emotional support, 1% of the variance in the quality of classroom organization, and 2% of the variance in the quality of instructional support in observed classrooms. Moreover, teacher beliefs about DAP and DIP did not have any significant direct effects on the quality of emotional support and classroom organization and accounted for 7% of the variance in the quality of emotional support and 5% of the variance in the quality of classroom organization. However, the effect of the beliefs about DAP (.29) but not DIP was statistically significant for the quality of instructional support. The beliefs about DAP and DIP explained 9% of the variance in the quality of instructional support. This small albeit significant effect pointed out that the quality of instructional support was better in the classrooms of preschool teachers who adopted developmentally appropriate practice to a greater extent. Given the results of the path analyses; overall, it needs to be highlighted that there was not a large effect of teacher beliefs on the quality of teacher-child interactions in observed classrooms, while teacher beliefs influenced each other strongly. Table 14 summarizes the decomposition of the effects of the path analyses.

Table 14

Decomposition of the Effects from the Path Analyses

	Path coefficients		<i>t</i>	<i>R</i> ²
	Direct effect	Indirect effect		
On teacher beliefs about DAP				
Of self-efficacy for teaching	.27	-	3.85*	.26
Of general teaching efficacy	.04	-	0.92	
On teacher beliefs about DIP				
Of self-efficacy for teaching	.14	-	1.07	.14
Of general teaching efficacy	-.21	-	-2.40*	
On the quality of emotional support				
Of self-efficacy for teaching	-	.16	1.41	.02
Of general teaching efficacy	-	.05	0.85	
Of teacher beliefs about DAP	.62	-	1.74	.07
Of teacher beliefs about DIP	-.10	-	-0.47	
On the quality of classroom organization				
Of self-efficacy for teaching	-	.14	1.35	.01
Of general teaching efficacy	-	.02	0.39	
Of teacher beliefs about DAP	.51	-	1.47	.05
Of teacher beliefs about DIP	.01	-	0.05	
On the quality of instructional support				
Of self-efficacy for teaching	-	.11	1.49	.02
Of general teaching efficacy	-	.04	1.10	
Of teacher beliefs about DAP	.44	-	1.99*	.09
Of teacher beliefs about DIP	-.10	-	-0.80	

Note. **p* < .05

4.6. Beliefs of More and Less Effective Early Childhood Teachers about Early Childhood Education

The beliefs of more and less effective teachers about high quality early childhood education were explored and compared through the qualitative analyses of the interview data from two teachers who obtained higher scores from CLASS (Teacher A and Teacher B) and two teachers who obtained lower scores from CLASS (Teacher C and Teacher D). The results overall pointed to the similarities and differences between and within the less and more effective teachers as regards their beliefs about the essential aspects of early childhood education and the barriers to effective practice in early childhood education.

4.6.1. Beliefs about the essential aspects of early childhood education

The results revealed that the more effective and less effective teachers agreed with each other on some aspects that define good early childhood education. Although the quality of their classroom practices differed, they all advocated that early childhood education be child-centered (see Table 15) so that children can take the leading role in their learning process under the guidance of their teachers (Teacher A), and the individual needs of each child (Teacher B) and their interests (Teacher C) can be met, and also children can enjoy their time and be happy in class environment (Teacher D).

Table 15

Child-Centered Education

More effective teachers	Less effective teachers
First, it should be child-centered. Not an education that is dominantly led by teachers. Not an education where teachers intervene a lot. An education based on children. An education where teachers guide children for the achievement of desired learning objectives. (Teacher A)	I primarily place the children at the center. I ask them. I observe them. When the information I present does not attract their interest, I always stop doing it. (Teacher C)
Completely child-centered. Approaching to each child individually. (Teacher B)	I am adopting child-centered education. In my professional life, and also I have a child, for my child, the most important thing for children is to be happy and have an education in a lovely learning environment. (Teacher D)

Consistent with child-centered view of education, the four teachers similarly reported the significance of being flexible in early childhood education classrooms. As Teacher C mentioned, “*when children arrive at school, they may ask for a different thing. Maybe he or she had a nightmare that night and may be in a negative mood.*” In the context of centralized education, the teachers considered that a flexible curriculum is a key to responding to children’s social and academic needs and emerging situations in the classrooms. As another component of child-centered approach to education, they moreover pointed to the importance of knowing children to provide them with a good education. Specifically, knowledge about each child’s strengths and weaknesses (Teacher B and Teacher C) and also a general knowledge of child psychology (Teacher A and Teacher D) were evaluated important by the teachers. Importantly, the teachers all

recognized the value of parent involvement in early childhood education at least to support children’s learning (Teacher A and Teacher D), to intervene and overcome the problem behaviors of children (Teacher B), and to make children happy (Teacher C and Teacher D).

Of note is the teachers’ beliefs about the role of early childhood education in supporting the social-emotional development of children (see Table 16). The four teachers alike underlined that the primary aim of early childhood education should be making contributions to the social-emotional gains of children. The teachers, however, stressed the significance of different aspects of social-emotional development of children such as developing self-respect and confidence (Teacher A), learning to be a member of a group (Teacher B), developing moral values that make people good (Teacher C), and supporting emotional well-being of children (Teacher D).

Table 16
Role of Early Childhood Education in Social-Emotional Development

More effective teachers	Less effective teachers
Activities should be done to develop children’s self-respect. Children who love themselves can love anyone in their community, family, and environment. Primarily, to raise children who love themselves, are confident, know their differences and strengths, and know what they can do. (Teacher A)	There is not such a thing that everyone will know math well or become an academician. Everyone should be a good, high quality person, even if he or she is a shoemaker or a servant...People are not doing their job well, and they deceive others. In the future, children should be people who do their job well; for instance, to be a shoemaker who repairs shoes as if they are theirs or family members’ shoes. (Teacher C)
If I redesign early childhood education, it will be completely and primarily about social-emotional development. I will teach children who separate from their families how to obey the rules of communal life. (Teacher B)	Making children happy, creating a smile on them is very important in this period. Without forcing, reprimanding, telling “You must do this,” we need to make things to make them happy and contribute to their personality. (Teacher D)

Despite these salient similarities, there were some beliefs that distinguished more effective teachers from less effective teachers such as their view on how children learn

(see Table 17). Although the four teachers supported child-centered education, the more effective teachers tended to question if children could construct knowledge on their own. These teachers, for instance, did not reject the role of teachers as the transmitters of knowledge. Teacher A's stance on this issue can be explained by her belief that adults are essential to expand the learning of children, while it seems that Teacher B developed this belief because of the lack of conditions for learning by doing in current classrooms. On the other side, the less effective teachers considered the activities that children direct their learning such as free play time more valuable than structured activities. These teachers especially favored free play activities because it is considered more enjoyable and engaging for children.

Table 17
How Children Learn Best

More effective teachers	Less effective teachers
Of course, (they learn) by doing but knowledge transmission also occurs. The teacher provides clues and helps them expand and improve their learning. Transmission is a must. (Teacher A)	I sometimes think if I am giving too much free time but later I recognize that children are feeding themselves. They are not forced to do something. They are not bored...They are enjoying their time and showing a willingness to learn. When I propose an activity to do, they become unhappy; I realize that it (free play) is better for them. (Teacher C).
I do not think that children can learn on their own. It does not happen in our learning environments ... We including me because of conditions and the nature of the current system are more likely to adopt the role of the teacher as the transmitter. Without an adult, it is nearly impossible for the child to discover on their own. ... We do not have materials and time for it. (Teacher B)	I expand time for free play under my supervision since this is the time when children are the most active and independent...there are more learning opportunities for them. (Teacher D)

As regards the role of early childhood education in academic preparation of children, Teacher A, the most effective teacher in this sample, differed from the other three teachers (see Table 18). The less effective teachers and Teacher B, the second most effective teacher, clearly set forth that academics are only of secondary importance in the education of young children. These three teachers similarly believed that children would already acquire academic skills as they advance in grades and were against academic pressure on children. However, Teacher A viewed academic preparation as an important

aspect of early childhood education by highlighting the role of early education in preparing children for elementary grades. This teacher, for instance, reported that in her classroom four children can read and almost all children in her classroom can recognize the sounds of the letters.

Table 18

Academic Preparation in Early Childhood Education

More effective teachers	Less effective teachers
They (social-emotional development and academic preparation) should go hand in hand. One should not exist in the absence of the other because these children will start elementary education in the coming year and it is a must that they are prepared academically. (Teacher A)	In family meetings, I always tell that our aim is to raise good people. Children are all normal and beyond the normal level. I tell them that they do not need to worry about their academic success as they will do it somehow in the future. (Teacher C)
Children already know how to count at the age of 2. They learn how to read at the age of 3. There is not a problem with it (academic development). We as the society and families neglect their social-emotional development. (Teacher B)	In this period there is no need to pressurize children and burden them with the things that are more than they can stand. Doing such things as wiring exercises for hours and holding a pencil are not right to me for children who are in play period. (Teacher D)

Apparently, the less effective teachers were especially sensitive about children's happiness in their classrooms. It seemed that children's feelings were of their priority as both believed that any negative experience in early childhood can have long-lasting effects on children. On this issue, Teacher C said that *"If I do harm to the spirit of children, I will make them unhappy and unsuccessful throughout their life. Therefore, I say the first thing is considering the spirit of children, raising happy children."* Teacher D based on her elementary school experience similarly stated that *"What you tell a child could influence his or her so negatively that he or she could not forget it. I am very much afraid of this and try not to do it."* Maybe because of their concern about children's happiness, while defining the characteristics of a good early childhood teacher, these teachers similarly underscored that a good early childhood teacher is a person who loves children and are patient.

On the other side, the more effective teachers were considered more interventionist in their approach to children as it seems that they were more concerned about making a difference in them. Teacher A, the most effective teacher in the sample, for instance, emphasized leading to an improvement regarding cognitive development of children and said that *“Children should be curious. They should ask questions. They should question and search.”* Teacher B, on the other hand, distinguished from other three with her goal to identify some weaknesses of children in her classroom and helping them overcome them. In this respect, she stated: *“A child who is very intelligent becomes unsuccessful in high school or during his/her life because he /she could not concentrate well on the tasks. When you go back to his/her early childhood education, you will see that he/she had already given some signals there...you can guide the parents. I am for it, telling parents things they are not aware of and help them improve the child.”*

4.6.2. Beliefs about the barriers to effective practice in early childhood education

The four teachers with different levels of classroom quality depicted their beliefs about what impedes effective practice in early childhood education. One of these stated barriers pertained to parents. The four teachers consistently complained about the parents' lack of consciousness regarding the role of early childhood education in nurturing the development and learning of children (see Table 19). They similarly pointed out that parents are blind to educational value of early childhood classrooms and regard early childhood teachers mostly as caregivers. In this respect, the four teachers believed that parents' definition of high quality early childhood education in Turkey is limited to children's safety and pleasure. This floccinaucinihilipilification of early childhood education was so severe that Teacher C encountered some problems with her family about her choice of this profession. Teacher D was hiding that she was an early childhood teacher and instead saying that she was a teacher when asked until five years ago.

Table 19

Parents' Views of Early Childhood Education

More effective teachers	Less effective teachers
They consider early childhood education is a place for play. How can you then expect quality? They think that it is a place where children spend their time and set their expectations accordingly. (Teacher A)	They still view it as a nursery. They think that their children will be cared; a safe place where the children can stay until evening. Not a place where children are prepared for elementary education and prepared for life. (Teacher C)
Even my brother –a physician –thinks that I am a caregiver. Just a place to spend time. 70% of Turkey thinks like this...Parents do not have time to spend with their children. Real caregivers are really expensive. Here is safe, secure, and cheap. (Teacher B)	Parents are not still aware of that early childhood education is a type of education. They consider it as a nursery place where children are cared. ...the ones who expects education are very little. This inevitably influences teacher performance and what a teacher does in her classroom. (Teacher D).

In contrast to this custodial approach to early childhood education, the less effective teachers and Teacher B consistently complained about parent's pressure on them to teach children academics in their classrooms. Some parents were considered very demanding as Teacher D, with the lowest level of observed teacher-child interaction quality in this group, said: *"I am doing notebook activities because of the pressure of the parents as they come and say that you are not doing anything, while some teachers even teach the letters."* Thus, as reported by Teacher B, it seems that some parents in Turkey expect an academics-based approach to early education such as the one that takes places in elementary grades. It is worthy to mention that Teacher A, the most effective teacher in this group, was not concerned about academic pressure as these three teachers did. This difference could be explained by the beliefs of the teachers about the goals of early childhood education since Teacher A endorsed academic preparation in early education, while Teacher B, Teacher C, and Teacher D defined the role of early childhood education mostly regarding the social-emotional development of children.

Another issue that pertained to parents as barriers in early childhood education is about the direction of efforts to satisfy parents in early childhood education. This issue was raised by the more effective teachers in the sample. Particularly, both shared their

reservations on the celebration of important days in the way it happens in the present system of schools. Teacher A noticed that these activities do not have any educational value. She stated that *“As happened in the celebration of national days, we conduct activities that enjoy their parents and us; however, we do not consider children’s psychology and do not ask if they really would like to do it. We just do what we want to do.”* Teacher B even mentioned that she could not conduct educational activities she would like to do because the school administrator forces her to prepare children for different types of shows throughout the educational semester to improve parents’ satisfaction with school quality.

Teachers were also considered a barrier to high quality early childhood education as the four teachers consistently referred to the role of teachers in achieving good early childhood education. The more effective teachers and Teacher D, the least effective teacher in the group, criticized early childhood teachers’ product-oriented approach to teaching in early childhood education in the name of art activities (see Table 20). In this approach, children are mainly expected to reproduce the products in the way teachers depicts. Thus early childhood teachers were considered neglecting developing higher-order thinking skills of children (Teacher A), killing their creativity (Teacher B), and taking away meaningful learning opportunities from them to develop (Teacher C).

Table 20
Product-Oriented Approach to Teaching

More effective teachers	Less effective teachers
As far as I observe, early childhood teachers are the ones who conduct art activities and generate good visual products from them; and ask other teachers “I did this. You should do what I exactly did.” They are not teachers who help children think divergently. (Teacher A)	We are obsessed with creating visuals. A teacher is judged to be good when she prepares and does a good art activity. I believe this is completely wrong. Giving children a pre-determined shape and asking them to cut and paste should be included in education but should not be the only basis to evaluate teacher quality. Instead, we should evaluate if children in this classroom are happy and if a teacher performs activities that really contributes to them. Only in this way we can understand the quality of a teacher. (Teacher D)
Children do their rabbits with some recycle materials but did not make ears for them. One comes and says “What is this supposed to mean?” and throws away. This is the way of thinking. Rabbits must have two ears. (Teacher B)	

Even, because of the obsession with creating visually appealing products, children's activities may turn into activities for teachers and lose all their educational value. For instance, Teacher B reported that in one of the end of year exhibitions she attended when a child was asked *"In which class did you do this (a 3D beehive), the child said that "We did not do it, our teacher did it."* This was also evident in the celebration of important days as Teacher B said: *"They would like to present a perfect show so that children who are good performers stand in the front. Why? What is the purpose of doing a perfect dance performance? Should not we put the children who are shy and lack confidence to the front, instead?"* Moreover, it appears that this way of teaching has been widely accepted in the current context of early childhood education as it has been an indicator of being a good early childhood teacher (Teacher A and Teacher D).

The lack of qualifications for effective teaching is not confined to in-service teachers as the three teachers consistently mentioned that current pre-service teachers also do not seem to have qualifications that will make them effective in the future classrooms based on their experience with some of them in their classrooms. Teacher A especially criticized that the activities pre-service teachers practiced in her classroom were not child-centered like those of many in-service early childhood teachers as they did not help children ask questions, be curious, and construct their ideas. She said that *"They are doing an experiment. They tell how they are going to do it. They do it and tell the results."* Teacher B and Teacher C, on the other side, highlighted the lack of professional commitment in some prospective teachers. Teacher C, for instance, observed that they were mostly isolated from children in classrooms and uninterested in them. Teacher B said: *"I met with some who says they hate teaching."*

Added to these barriers related to parents and teachers are the conditions under which early childhood teachers work. The four teachers in the present study mainly evaluated that current classroom environments are deficient in supporting children's learning and development. For instance, Teacher B said that *"We are doing an experiment with sand, but we are concerned about the mess as we do not have an appropriate environment."*

Also, Teacher C said that *“Do not take, do not touch, do not mess up! This is our class environment!”* The more effective teachers especially argued that the current class environments do not involve enriching materials and are more similar to home environment of children in terms of available materials and also are not adequately large to encourage children’s movement. In the less effective teacher group, Teacher C particularly strived for an environment where children can learn by doing on their own and Teacher D highlighted that children are bored of being in the same classroom all day and dreamed for classrooms designed for specific areas such as play and art room.

In addition to problems with the size of classroom space, variety in learning materials, and class design, large class size was identified as another contextual barrier to being an effective early childhood teacher in the present study. The four teachers consistently reported that it becomes really difficult for them to respond to the needs of each child in the crowded classrooms. For instance, Teacher C said: *“I have 20 children. Believe me, after 15, it becomes very difficult. Any child added to 15 means more noise, more movement, less space in the classroom, and the crowd. You lose your personal interest in children.”*

In relation to the context of early childhood education, high workload was another constraint the four teachers referred to while talking about the barriers to effective practice. The teachers similarly complained about the high workload that does not even allow them to have a break time. That is, the profession was perceived exhausting by the teachers (see Table 21). It appears that the teachers perceived themselves overburdened especially with being the sole responsible person for children in their classrooms. This high workload is likely to influence teacher performance negatively as Teacher C said: *“We are working whole day. We overwork. This is all we can do considering the salary we receive. ... You sometimes become so tired and overwhelmed that this is spoken from time to time.”*

Table 21

High Workload

More effective teachers	Less effective teachers
<p>Early childhood teachers do not have a break time. They are responsible for anything bad happens in the classroom even when they have to leave the class for a need or for going to the restroom. Early childhood teachers do not have support. (Teacher A)</p> <p>When we become sick, we have permission problems. Who will be responsible for children when you go? What will happen to them? You are always thinking like this. They are attached to you as they are attached to their mothers and fathers. Even we are not going to the restroom because when a child falls they blame it was because you were in the restroom. (Teacher B)</p>	<p>We do not have a break time. We do not have a support staff. I am with 20 children and please forgive me but It is really difficult for me to even go to the restroom. ...When you leave the class for photocopy or taking a material, there may be a collision and something bad can happen. ...A teacher needs to breathe. (Teacher C)</p> <p>Even I do not have time to go to the restroom if I do not have a trainee in the class. I do not know how they will call it; a teacher should have a relaxation time because the noise and the class environment becomes overwhelming for a teacher from time to time.</p>

4.7. Classroom Practices of Early Childhood Teachers with More and Less Desirable Beliefs

The classroom practices of four teachers with different beliefs were explored through classroom observations and compared via the qualitative analyses. Specifically, the classroom practices of Teacher 1 and Teacher 2, with more desirable beliefs (i.e., higher level of efficacy and higher level of support for DAP) and Teacher 3 and Teacher 4, with less desirable beliefs (i.e., lower level of efficacy and lower level of support for DAP) were examined and compared. The results overall unearthed some similarities and differences in the classroom practices of early childhood teachers with more and less desirable beliefs.

The results indicated that there were instances in each classroom when the common feature was unproductivity since children were doing nothing but waiting for the teacher. This was mainly because children were not completing the activities at a similar pace but were expected to do the same things at the same time, and also because the teachers were interrupted for some reason. For instance, children had to wait for their turn while Teacher 1 was noting down each child's message to their mothers for Mother's

Day celebration. A school staff also interrupted this teacher to talk about a field trip organization during children's free play time for about five minutes. Teacher 2 was not available in the classroom for nearly 45 minutes because of an administrative meeting. During this time, the children and a parent who was there for a pre-scheduled parent involvement activity did not start any activity before the teacher returned. Teacher 3 was interrupted in the middle of a whole group language activity because a parent of her old student wanted to see her just to say hello. While she was talking with her, children were asked to sit still and be quiet like a flower. The children in the class of Teacher 4 waited nearly for 25 minutes as the teacher did not conduct any activity but was taking some notes on a notebook and requested the children to sit in their seats and wait in silence until lunch time. However, it is noteworthy to mention that these unproductive times were considerably less in the class of Teacher 1, the teacher with the most desirable beliefs in the current sample.

In productive times when children were engaged in an activity under the supervision of the teachers, of note was that there was a limited support for children's cognitive development in these four classrooms. The lack of teacher support for the development of higher-order thinking skills in children manifested itself in different types of activities the four teachers performed in their classrooms. For example, in the art activities Teacher 2 and Teacher 4 performed, children were simply expected to cut pre-drawn shapes and paste them in the way the teachers depicted to create a product. Even, it was observed that both teachers were very much concerned about creating visually appealing products so that they made some "corrections" to the work of some children. Also, during the observed free play times in the classrooms of Teacher 1, Teacher 3, and Teacher 4, teacher-child interaction was mostly confined to providing materials, giving instructions, and managing student behavior, while the children were mostly interacting among themselves and on their own. During the book reading/storytelling activities, while Teacher 2 and Teacher 4 just told the story and did not engage in any conversation about it, Teacher 3 asked only closed-ended questions that required children to recall some parts of the book.

Furthermore, it was noticed that children were not intensively cognitively challenged and supported in some other activities these teachers did such as drawing a picture for Mother's Day celebration (Teacher 1), playing musical chairs (Teacher 1 and Teacher 2), singing (Teacher 3 and Teacher 4), watching the Snow Queen, and coloring pre-drawn shapes (Teacher 3 and Teacher 4). Overall, despite some scarce instances which are likely to support children's creativity (Teacher 1 and Teacher 2) and children's reasoning (Teacher 1, Teacher 2, and Teacher 3), the educational value of the activities was considered highly limited in enriching children's higher-order cognitive functioning in these four classrooms.

Added to these teacher-initiated activities that lacked the stimulation for higher-order thinking, the teachers regardless of their beliefs similarly taught academics in their classrooms. For example, Teacher 1 conducted an activity where the children drew some geometrical shapes. Teacher 2 used some English words in an activity and asked the children their meaning in Turkish. In the classroom of Teacher 3, the children were informed about the emergency number and ambulances, while in the class of Teacher 4, children were practicing how to write numbers. In this respect, it seems that the teachers with more desirable and less desirable beliefs performed activities to help children acquire some important knowledge in their classrooms. The methods the teachers used in teaching academics were similarly drill and practice rather than the active construction of knowledge.

The four classrooms were also similar in that the teachers gave feedback to children excessively in the form of praise. Rather than making explanations that are likely to contribute to children's learning and inform children about their progress, the teachers were concerned about displaying their approval of the children. This was so often that the teachers praised children almost for any positive act such as completing an activity or complying with teacher expectations. For this end, for instance, they frequently used such words as great, very good, well-done, and beautiful or some acts such as clapping or giving a star.

Moreover, the classrooms shared some common features as regards teachers' emotional support. In the three classrooms (Teacher 2, Teacher 3, Teacher 4), it was observed that the teachers yelled at children mostly when they wanted to rebuild classroom order and were not able to control their anger due to children's some misbehaviors. In addition, Teacher 3 and Teacher 4, the teachers with the less desirable behaviors threatened some children who do not comply with their expectations to send off the activities. Teacher 1 with the most desirable beliefs did not yell at children during the observation time, however. The classroom atmosphere was so positive that there were not any observed student misbehavior but mutual respect in this classroom.

In addition to aforementioned similarities in the four classrooms, some salient features that distinguished the teachers with more desirable beliefs from the teachers with less desirable beliefs were also identified. It was observed that the teachers with more desirable beliefs had more positive relationships with the children than the teachers with less desirable beliefs because there were instances in their classrooms where they displayed their affection to children such as hugging, kissing, and smiling. For instance, these teachers seemed to enjoy their time with children and engaged in many social conversations with them in the classrooms. On the other side, the teachers with less desirable beliefs appeared more isolated from children in their classrooms. They seemed to be physically distant and had rather a flat face in their interaction with children, for instance. There appeared a lack of matched affect in their relationship with children. In this manner, the teachers with more desirable beliefs appeared to be more enthusiastic in their interaction with children in their classrooms compared to the teachers with less desirable beliefs.

CHAPTER 5

DISCUSSION

This study scrutinized teacher-child interaction quality in preschool classrooms, some aspects of early childhood teachers' beliefs (i.e., beliefs about DAP, beliefs about DIP, teacher self-efficacy beliefs, general teaching efficacy beliefs), and the interplay between teacher-child interaction quality and teacher beliefs in early childhood education classrooms. This chapter discusses the major findings on these three domains of the study and then draws implications for educational practice and further research.

5.1. Teacher-Child Interaction Quality in Early Childhood Education

The current study evaluated the status of teacher-child interaction quality in early childhood education classrooms through structured classroom observations with CLASS (Pianta et al., 2008). The findings overall revealed that teacher-child interaction quality was on average at mid-range in 47 classrooms observed in this study. A number of previous studies consistently showed that global classroom quality was at an average level in early childhood education programs (e.g., Helburn & Howes, 1996; Herrera et al., 2005; Peisner-Feinberg et al., 2001; Tayler et al., 2013). Strikingly, in this sample of preschool classrooms where educational quality was settled for a state of mediocrity, there was not any classroom which was rated at the high range on each domain of CLASS. This result is not an exception because high quality early childhood education classrooms were not encountered in some previous studies as well (e.g., Pessanha et al., 2007; Vermeer et al., 2008). Moreover, if they were present, they were indeed scarce (e.g., Bryant et al., 1991; LoCasale-Crouch et al., 2007; Villalón et al., 2002).

The inspection of teacher-child interaction quality in different domains of CLASS yields more detailed explanations regarding the effectiveness of preschool classrooms from Turkey. In light of the CLASS framework (Pianta et al., 2008), these results specifically indicated that early childhood teachers were competent in managing the behaviors of children, offered opportunities for children to be involved in activities, and achieved student interest and engagement to a great extent. However, preschool teachers supported children's social-emotional functioning at a middle level and their cognitive and language development only at a low level in this study. In the domain of emotional support, classrooms did not appear to have a fully positive climate, and teachers were only moderately able to respond to social and academic needs of individual children and only partially emphasized their interests, perspectives, and leadership. As regards the instructional support, early childhood teachers rarely promoted higher-order thinking skills of children, were not likely to expand their learning via feedback, and did not facilitate and encourage children's language development to a great extent. It is a worrisome finding that there was not any teacher who obtained a high score on the domain of instructional support in the current sample.

These findings consequently showed that classroom quality was nearly high in the domain of classroom organization, average in the domain of emotional support, and almost low in the domain of instructional support for the sample of preschool classrooms from Ankara, Turkey. As the scores for each domain of teacher-child interaction quality were significantly different from each other, it was concluded that classrooms were considerably best in classroom organization and the worst in instructional support. This trend was confirmed in the literature as some existing studies indicated that early childhood education classrooms were better at supporting social-emotional development of children than nurturing their cognitive development (e.g., Bracken & Fischel, 2006; Denny et al., 2012; La Paro et al., 2004; LoCasale-Crouch et al., 2007). Moreover, several studies likewise recognized that children's cognitive development had been only minimally supported in early childhood education programs (e.g., Chen & de Groot, 2014, Denny et al., 2012; Doherty et al., 2006; La Paro et al., 2004, 2006, 2009; Sandstrom, 2012;

Tayler et al., 2013). The qualitative analysis of observation data in this study also supported that there were problems in classroom practices of preschool teachers especially regarding productivity, support for children's cognitive development, and the use of feedback.

Apparently, quality is intensely desired but not fully attained in the field of early childhood education. Though a significant amount of research has linked the quality of early childhood education programs to various aspects of child development (e.g., Burchinal et al., 2000; Guo et al., 2011; Keys et al., 2013; Love et al., 1996; Mashburn, 2008; Sylva et al., 2006, 2011; Vandell, Henderson, & Wilson, 1988), many studies have characterized early childhood education services with either low or average level of quality (e.g., Doherty et al., 2006; Goelman et al., 2006; Justice et al., 2008; La Paro et al., 2009; Rentzou & Sakellariou, 2011; Tonyan & Howes, 2003; Tayler et al. 2013; Vermeer et al., 2008). The present study similarly unfolded that there is an intense need for quality improvement in early childhood education programs in the public pre-primary schools of Ankara, Turkey particularly in the domains of emotional and instructional support. This conclusion about the need for quality in early childhood education is consistent with the findings of Bastürk and Isikoglu (2008) and Güçhan Özgül (2011) as they also observed that early childhood education classrooms from Turkey only met the minimum threshold for quality.

Given the associations between CLASS and child outcomes (e.g., Curby et al., 2009; Downer et al., 2010, 2012; Hamre et al., 2014; Mashburn et al. 2008; Pianta et al., 2008; Rimm-Kaufman et al., 2009), it is imperative that the steps be taken for improving teacher-child interaction quality in preschool classrooms. Otherwise, it becomes less likely for us to deliver the promises of early childhood education. Of note is that the results of this study address the status of classroom quality in public schools that children from disadvantaged families are more likely to attend in Turkey. Several studies have underlined the value of high quality preschool classrooms particularly for children from deprived conditions (e.g., Connor, Son, Hindman, & Morrison, 2005; Dearing,

McCartney, & Taylor, 2009; McCartney, Dearing, Taylor, & Bub, 2007; Nye, Konstantopoulos, & Hedges, 2004; Vandell, 2004). However, the present study implies that the development of children who most need high quality classrooms is at a greater risk because public schools may be the only opportunity for some children to overcome the limitations they encounter in their home environment; however, these schools are not likely to support their full development.

As important as the recognition of the need for quality improvement is the identification of the factors that put the effective practice in peril in early childhood education. The qualitative analysis in the present study unmasked some barriers to effective classroom practice based on the reports of four early childhood teachers. The results set forth that the low quality found in this study may be due in part to the views of parents on early childhood education, teacher qualifications, and work conditions.

First, it seems that parent expectations become reality in the context of Turkey as they are likely to boil preschool education down to child care or academic preparation. Early childhood teachers might feel pressurized to act in accordance with parents' expectations in their classrooms to satisfy them no matter how their expectations clash with professional standards. The qualitative analysis indeed illustrated that preschool classrooms were highly parent-centered as the teachers were teaching academics in their classrooms such as English, reading, and writing, consistent some parents' desire for basic skills education and also spent a considerable proportion of their time in non-educational activities that were mostly designed to make parents satisfied with programs such as Mothers' Day celebration activities, preparing shows for celebration of important days, and preparation of good looking files for report cards. Gaining parents' satisfaction with early childhood education services (Dahlberg et al., 1999), being parent-friendly (Ceglowski, 2004), and forming partnerships with parents and involving them in educational processes (NAEYC, 2008) are among the components that define good early childhood education. However, a caveat should be put about parents who are not conscious of early childhood education and set inappropriate expectations for programs.

If unconscious parents define what is good for young children, teacher performance and so educational outcomes may be disappointing in the field of early childhood education. Moreover, the radical differences in the views of parents and teachers on early childhood education may harm the mutual trust and respect between them and pose a threat to effective parent involvement in educational processes.

Second, as teachers reported in this study, not all early childhood teachers are qualified to provide children with high quality preschool education in our national education system. The qualitative analyses, for instance, portrayed that creating visually appealing products has become the norm that defines good early childhood teachers in today's preschool classrooms. Also, the activities teachers performed were not likely to facilitate children's use of higher-order thinking skills to a great extent, which explains why the level of instructional support was so low in the quantitative part of this study. It is, moreover, very concerning that there were considerable periods when preschool teachers did not have almost any supportive interaction with children such as in free play times and also did not offer any activities for children to engage in. A myriad of factors can explain why early childhood teachers were not fully qualified to fulfill their roles as expected from them in the present study.

Several studies, for instance, have shown that teachers' educational level and the area of degree predict the quality of early childhood education programs (e.g., Denny et al., 2012; Mims et al., 2008; Pianta et al., 2005; Torquati et al., 2007; Wilcox-Herzog & Ward, 2004). The majority of the teachers (89.4%, $n = 42$) had at least B.S. degrees and all teachers received their degrees in an area related to child development and education in this study. Therefore, these variables may not account for teachers' lack of qualifications and so low quality found in this study. The programs early childhood teachers attended, however, might not have been effective in equipping them with skills, knowledge, beliefs, and attitudes that would make them effective in their classrooms maybe because of faculty shortage and high faculty workload in these programs (Gürkan, 2005) and lack of opportunities for teacher candidates to connect theory with practice (Gülmez-Dağ, 2012;

Şahin, Kartal, & İmamoğlu, 2013). Moreover, the teachers in the present sample were on average highly experienced in teaching (i.e., nearly 11 years) so that what they had acquired in their teacher education programs may not help them meet current educational expectations. Therefore, preschool teachers may be in need of professional development activities to overcome their weaknesses.

Yet having qualifications for being effective teachers is not likely to influence classroom practices if teachers do not have a strong motivation to use them. Only committed teachers will be volunteers to exert efforts to professionalize (Firestone & Pennell, 1993) and will engage in behaviors beyond the minimal expectations (Abd Razak, Darmawan, & Keeves, 2010). The teachers in this study reported that they were not very hopeful of future teachers because some teacher candidates they met did not seem to be committed to teaching profession. This issue may also pertain to in-service teachers and explain why the teachers considerably fell short of the expectations although they reported that they had the capabilities for teaching in the current study. Unproductive periods, and the times that teachers did not have any interaction with children as recognized by the qualitative analysis of observation data also emphasize that preschool teachers are not committed to doing their best in their classrooms. The study by Abazoğlu, Yıldırım, and Yıldızhan (2014) support this claim as they asserted that teachers in Turkey do not struggle for improving themselves after they start the profession and a considerable proportion of them (30%) state that they would like to quit teaching if they have another chance. It is also likely that committed individuals do not select or remain in the field of early childhood education because of the image of the profession (Jango et al., 2014). The teachers' lack of commitment to their students, teaching, and schools may also be attributed to the public schooling system of Turkey that does not reward good teacher performance and punish bad teacher practices. According to the first results of Teaching and Learning International Survey (OECD, 2009), 89% of the teachers in Turkey reported that teachers who show poor performance consistently will not be dismissed, while only 31.2% stated that the most effective teachers received the greatest monetary or non-monetary rewards in their schools. Also mentioned in this report, 42.9% said that the

review of teacher's work has little impact on the way teachers teach in the classrooms. In this respect, it may be concluded that educational quality is heavily at the mercy of teachers in Turkey without an effective audit system.

Third and last, the qualitative analysis indicated that work conditions of teachers might pose a threat to effective classroom practice in early childhood education in Turkey. The literature suggests that a stimulating learning environment is an ingredient of high quality early childhood education (e.g., Dodge, 1995; European Commission, 2014; Jalango et al., 2004; NAEYC, 2008; UNICEF, 2000). However, the physical conditions in classrooms were frequently cited as a barrier to teachers' implementation of activities in early childhood education in Turkey (AÇEV, 2013; Dilek, 2013; Erden, 2010; Erdiller & McMullen, 2003). Especially, teachers in the present study complained that their classroom environments were limited in available materials and space. Perhaps in part because of the physical environment, the quantitative analysis revealed that the preschool teachers were not fully able to offer a range of interesting and creative materials, and activities sometimes had to be based on lecture, and worksheets. In addition, consistent with research showing that group size and/or child-adult ratio matter in classroom quality in early childhood education (e.g., Barros & Aguiar, 2010; Bigras et al., 2010; Ceglowski, 2004; Clarke-Stewart et al., 2006; Love et al., 1996; O'Kane, 2005; Thomason & La Paro, 2009), the teachers mentioned that large class size negatively influenced their performance. Indeed, it may be challenging for preschool teachers to establish supportive relationships with each child, to be aware of and respond to each student's needs, to emphasize students' interests, perspectives, and movement, and to respond to each student's ideas, comments, and answers in classrooms that on average involved 19 children and no support staff. Given these large class sizes, Kıldan (2010) may be right in his argument which put forward that current policies in Turkey sacrifice educational quality for the purpose of expanding children's access to early childhood education.

As the results indicated, preschool teachers might feel exhausted to interact with children from time to time because they have to teach in crowded classrooms mostly alone for hours without any break. As a result of poor work conditions, the teachers in this study complained about high workload, which was linked with lower levels of classroom quality in the study by de Schipper et al. (2007). Overall, the issues emerged in this study related to work context as regards class size, materials, physical space, support staff, and work schedule may indicate that the structural quality of early childhood education is not satisfactory in the context of public schools in Turkey. Therefore, as shown in some previous studies (e.g., O'Kane, 2005; Phillips et al., 2001; Phillipsen et al., 1997), the structural quality might have influenced the process quality in the current study. The low structural quality may be associated with the fact that Turkey has a limited budget to invest in early childhood education (Eurydice & Eurostat Report, 2014), and perhaps more importantly uses its public resources for adults rather than young children (World Bank, 2013).

5.2. Early Childhood Teachers' Efficacy Beliefs and Beliefs about DAP and DIP

The present study surveyed early childhood teachers about their sense of efficacy and their beliefs about DAP and DIP. The results indicated that early childhood teachers' level of self-efficacy for teaching and parent involvement was relatively high, on average. Consistently, teachers reported a high sense of personal teaching efficacy in the study. In some previous studies conducted in Turkey, early childhood teachers similarly reported a positive perception regarding their capabilities to teach (e.g., Cobanoğlu & Capa-Aydin, 2015; Gömleksiz & Serhatlıoğlu, 2013; Kotaman, 2010; Sarı et al., 2009; Şenol & Ergün, 2015). Preschool teachers' sense of general teaching efficacy was not low either in this study. Thus, it may be concluded that preschool teachers generally believe in the utility of teaching profession. However, it is worthy to mention that preschool teachers were more positive about their capabilities to teach than the capability of any teacher to influence children regardless of their home environment. As this difference between personal teaching efficacy and general teaching efficacy was significant, it was concluded

that early childhood teachers had some doubts regarding the power of teaching to make a difference in children although they perceived themselves highly capable of fulfilling their roles as teachers.

Regarding the beliefs about DAP and DIP, consistent with the findings of some previous studies with teachers in Turkey (e.g., Demircan & Tantekin Erden, 2015; Erdiller & McMullen, 2003; McMullen et al., 2005), early childhood teachers in this study on average favored DAP to a great extent. The qualitative analysis also supported that the beliefs of early childhood teachers were aligned with the notion of DAP because they underlined the significance of child-centered education, flexibility, and parent involvement in their definitions of what was good for young children. Thus, early childhood teachers from Turkey are considered similar to their colleagues in the USA (Charlesworth et al., 1993; Kim, 2011), in India (Hegde & Cassidy, 2009), in Japan (Hegde et al., 2014), in Jordan (Abu-Jaber et al., 2010) given their endorsement of DAP. The similarities in the belief system of professionals from different cultures about teaching may be interpreted as evidence for the existence of some universal values that define high quality early childhood education.

The support for DAP, however, should not be construed as the lack of support for the notion of DIP. In the present study, teachers did not completely reject DIP, similar to the finding of Demircan and Tantekin Erden (2015). A considerable proportion of the preschool teachers (nearly 34%) favored some inappropriate practices nearly at a moderate degree. The qualitative analysis also pointed to some inappropriate beliefs of teachers concerning the goals of early childhood education and the way children learn. Specifically, that early childhood education is for the social-emotional development of children before all else is considered a conviction that violates whole child development principle in early childhood education that strives for flourishing children in all areas of development (European Commission, 2014; NAEYC, 2008). According to Kagan (1999), similarly, appropriate pedagogy in early childhood education should not neglect commitments to cognitive and language development of children. Furthermore, the

belief that children learn best in free play time may sweep away the supporting role of teachers in children's learning process. What is required for high quality early childhood education is the balance between free play and teacher-led activities (Siraj-Blatchford et al., 2008), and also teachers' scaffolding of children (Zuniga & Howes, 2009).

On the basis of the assumption that teachers reported their beliefs sincerely, these results overall imply that early childhood teachers' efficacy beliefs and their beliefs about teaching are congruent with what is expected from them. The sources of these beliefs may be their experience in teaching and their professional education (Bandura, 1977; Richardson, 1996) as the sample was composed of highly experienced and educated teachers in the present study. That early childhood teachers have a high sense of self-efficacy and favor DAP rather than DIP may be considered a good input for effective educational practice given the association between teacher beliefs and educational outcomes. Specifically, the self-percepts of teachers about their capabilities can influence their choice of the activities, coping behaviors, efforts, and persistence (Bandura, 1977). The literature consistently has provided evidence for the impact of self-efficacy beliefs on educational practice. Namely, early childhood teachers' self-efficacy beliefs have been associated with teacher-child relationships (Chung et al., 2005), center climate and teacher depression (Kim & Kim, 2010), and self-reported fidelity to a constructivist curriculum (Cobanoglu & Capa-Aydin, 2015). Likewise, the beliefs about teaching can guide teacher decisions and actions in classrooms (Pajares, 1992). Some existing research has demonstrated the congruence between teachers' beliefs about teaching and their actions (e.g., Maxwell et al., 2002; McMullen, 1999; McMullen et al., 2006; Stipek & Byler, 1997; Vartuli, 1999; Wing, 1989). Thus, preschool teachers who espouse the notion of DAP may be more likely to act on the basis of DAP in their classrooms compared to teachers who espouse DIP.

Also important was that early childhood teachers efficacy beliefs were related to their beliefs about DAP and DIP in this study. This finding was not surprising because the different type of beliefs are connected to each other in the beliefs system of individuals

(Pajares, 1992). The relationship between teacher efficacy beliefs and beliefs about teaching was depicted in some other studies in literature (e.g., Cobanoglu & Capa-Aydin, 2012; Gencer & Cakiroglu, 2007; Ilgaz et al., 2013; Muijs & Reynolds, 2002; Woolfolk et al., 1990). Specifically, the results of this study indicated that there was a significant positive correlation between teachers' sense of self-efficacy for teaching and their beliefs about DAP, while general teaching efficacy was significantly and negatively related to beliefs about DIP. The path analysis also confirmed this distinction; that is, self-efficacy for teaching significantly predicted teacher beliefs about DAP, while general teaching efficacy significantly predicted teacher beliefs about DIP. Consequently, it is imperative to underline that a high sense of self-efficacy does not ensure that early childhood teachers disagree with DIP and also a high sense of general teaching efficacy is not necessarily related to an early childhood teacher's agreement with DAP. In this respect, similar to the claims of Ghaith and Yaghi (1997) and Hoy and Woolfolk (1993), it can be argued that teacher self-efficacy and general teaching efficacy are two separate constructs that influence teachers in different ways. Also, the beliefs about DAP and DIP appear to be independent of each other as they were influenced by teacher efficacy beliefs distinctly.

5.3. Interplay between Teacher-Child Interaction Quality and Teacher Beliefs

The present study examined the interplay between teacher-child interaction quality and some aspects of teacher beliefs in early childhood education classrooms in the public pre-primary school system of Ankara, Turkey. The canonical correlation analysis indicated that the set of variables related to teacher beliefs (i.e., self-efficacy for teaching, self-efficacy for parent involvement, general teaching efficacy, beliefs about DAP, beliefs about DIP) explained a meaningful but not a large variance (10%) in the set of variables on teacher-child interaction quality (i.e., emotional support, classroom organization, instructional support). Although the bivariate correlations indicated that teacher self-efficacy for teaching and parent involvement were significantly associated with the quality of classroom organization and the total CLASS was significantly related to teacher

self-efficacy for teaching, these were almost weak correlations. In the path analyses, teacher efficacy beliefs did not have any significant indirect effects on any domain of teacher-child interaction quality. Additionally, teachers' beliefs about DAP and DIP did not considerably influence the teacher-child interaction quality in the domains of emotional support and classroom organization. The qualitative analyses, moreover, indicated that the four preschool teachers had some common beliefs about the essential aspects of early childhood education although the level of quality was different in their classrooms. Additionally, there was some convergence in classroom practices of the preschool teachers with more and less desirable beliefs. Overall, these results imply that teacher beliefs are not strongly related to teacher-child interaction quality in preschool classrooms. Indeed, early childhood teachers' beliefs seem to be more desirable than what they actually did in their classrooms in the study. Some previous studies similarly indicated that teacher beliefs are more appropriate than teacher practices in early childhood education (Hegde & Cassidy, 2009; McMullen et al., 2006; Vartuli, 1999).

The lack of a strong relationship between teacher beliefs and observed teacher-child interaction quality in this study contradicts with research that has indicated that early childhood teachers' practices were influenced by their beliefs about teaching (e.g., Abbott-Shim et al., 2000; Bryant et al., 1991; Justice et al., 2008; Kim & Kim, 2010; Maxwell et al., 2002; McMullen, 1999; McMullen et al., 2006; Pianta et al., 2005; Salminen et al., 2013; Stipek & Byler, 2004; Vartuli, 1999), and also by their efficacy beliefs (e.g., Guo et al., 2011; Kim & Kim, 2010). However, there is compelling evidence that early childhood teachers do not always practice what they believe to be important (e.g., Blay & Ireson, 2009; Cheung, 2012; Gilbert, 2009; Kim et al., 2005; Wen et al., 2011; Wilcox-Herzog, 2002), and also are not better teachers in reality because they report a high level of self-efficacy (e.g., Engstrand & Roll-Pettersson, 2014; Guo et al., 2014). Moreover, some studies that showed a considerable relationship between early childhood teachers' beliefs and their practices were considered limited methodologically because classroom practices were measured based on teacher self-reports in these studies (e.g., Cobanoglu & Capa-Aydin, 2005; Charlesworth et al., 1993; Heisner & Lederberg, 2011;

McMullen et al., 2005). Indeed, early childhood teachers' self-reported practices may be more appropriate than their observed practices (Vartuli, 1999), and even there may not be a significant relationship between stated and observed practices (Hegde & Cassidy, 2009).

The interplay between teacher beliefs and teacher-child interaction quality in preschool classrooms overall was not strong in this study; nonetheless, it is wrong to conclude that teacher beliefs do not exert any influence on teacher actions at all points. Although the explained variance was considered small, the path analysis revealed that there was a considerably higher level of instructional support in the classrooms of teachers who reported stronger endorsement of DAP. The significant association between beliefs about DAP and the quality of instructional support in one respect validates that the notion of DAP defines what is good for young children in early childhood education (Lee & Walsh, 2004). Some existing studies consistently have indicated that DAP is an indicator of quality that predicts the gains of children (e.g., Burts et al., 1992, 1993; Clarke-Stewart et al., 2006; Huffman & Speer, 2000). Moreover, although there was not a large overlapping variance (15%), the canonical correlation analysis still set forth that the level of classroom quality was likely to decline in the domains of emotional support, classroom organization, and instructional support as teacher beliefs became less positive regarding self-efficacy for teaching, self-efficacy for parent involvement, general teaching efficacy and beliefs about DAP. Thus, consistent with the core argument that teacher beliefs influence classroom practices (Kagan, 1992; Pajares, 1992), it can be concluded that a low sense of teacher efficacy and negative beliefs about DAP may pose a threat to effective educational practice in early childhood education.

The qualitative analyses, moreover, provided some evidence regarding the impact of teacher beliefs on teacher practices. First, the differences in the beliefs of more and less effective teachers about teaching may in part explain the variation especially in the domain of instructional support. The qualitative results portrayed that less effective teachers distinctly advocated for free play time where children learn on their own. Thus,

instructional support for children may not be considered valuable by these teachers so that they did not offer it in their classrooms to a great extent. Moreover, it is likely that these less effective teachers intentionally neglected the instructional dimension of early childhood education because their beliefs were more about raising happy and good children, unlike more effective teachers adopting an interventionist orientation that aims to make a difference in children through educational processes. As Kowalski et al. (2001) stated, maybe because of just focusing on the social-emotional development of children, preschool teachers in this study missed some opportunities for supporting cognitive and language development of children in their classrooms. In support of this argument, Salminen et al. (2013) showed that the teacher with lower levels of instructional support rated educational goals for factual knowledge, language, and conceptual skills less valuable compared to the teacher who provided higher levels of instructional support. Second, the qualitative analysis demonstrated that there were some differences in the classroom practices of preschool teachers with more and less desirable beliefs. Essentially, the preschool teachers with more desirable beliefs were observed to be more enthusiastic in their interaction with children compared preschool teachers with less desirable beliefs. The difference in teachers' relationship with children may be attributed to their beliefs as self-efficacy beliefs can influence teachers' aspiration (Tschannen-Moran & Woolfolk Hoy, 2001), commitment to teaching profession (Coladarci, 1992), emotional exhaustion (Dicke et al., 2014), and liking of teaching (Guskey, 1988), and/or maybe because of their support for DAP, which was associated with the level of quality in the domain of emotional support by Zinser et al. (2014).

Overall, the results of this study revealed that teacher beliefs could influence teacher practices to a degree; however, the beliefs that teachers are expected to have do not guarantee effective teaching in early childhood classrooms. This is no surprise because teacher behaviors are determined by a number of factors in addition to teachers' cognitive processes (Shavelson & Stern, 1981). The discrepancy between teacher beliefs and practices can be explained by the constraints in the physical environment or the external influences such as school administration, community, or curriculum (Clark & Peterson,

1984). Similarly, according to Wilcox-Herzog (2002), early childhood teachers may not act their beliefs because of directors, parents, regulations, children, and themselves. It is also likely that some other beliefs teachers form, for instance, their beliefs about children may impede their actions (Foote et al., 2004). Teacher beliefs may also not be adequately strong or in-depth to influence teachers' way of teaching (Wilcox-Herzog, 2002) because they can overcome barriers only if their convictions are strong (Nelson, 2000). Moreover, Cheung (2012) explained that teachers might not have enough time to practice their beliefs or teacher education programs may not prepare them well to connect their beliefs with practice. Specifically, the barriers to effective classroom practice identified by the preschool teachers concerning parents, teachers, and also work conditions may account for the discrepancy between teacher beliefs and teacher-child interaction quality in the context of this study. Preschool teachers may not be able to walk the talk in the classrooms because of parents' expectations, lack of qualifications for effective teaching, and also issues related to physical environment, class size, and workload.

5.4. Implications for Educational Practice

This study clearly sets forward that there is a need for quality improvement in preschool classrooms in the public pre-primary schools of Ankara, Turkey particularly in the domains of teachers' emotional and instructional support. As educational quality defined by CLASS and defined in early childhood education curriculum and early childhood teacher qualifications in Turkey resemble in many aspects (e.g., children's problem solving, children's leadership, creativity, positive classroom atmospheres), it can be concluded that current preschool classrooms in public independent pre-primary schools do not meet national standards to a high extent as well. Although there are some costs of quality improvement (Blau & Mocan, 2002; Powell & Cosgrove, 1992), *"it may be within the power of state government to raise the quality of early care and education, should the commitment be there to do so"* (Roach, Riley, Adams, & Edie, 2005, p. 83). In-service teachers' participation in professional development activities, which have predicted a higher level of quality in early childhood education classrooms in several studies (e.g.,

Claire Son et al., 2013; Hughes-Belding et al., 2012; Slot et al., 2015), may be an effective solution for improving teacher qualifications in our context as well. As proposed in the professional development model of Pianta (2011), specifically, teachers should view multiple videos that depict effective teacher-child interactions, participate in a college course to increase their knowledge about effective teacher-child interactions, and receive repeated individualized feedback on their interactions with their students. Workshops, video-based self-reflection, peer coaching, and mentoring with a focus on the dimensions of CLASS, as Zan and Donegan-Ritter (2014) practiced, can help teachers considerably improve the quality of their interactions with children in their classrooms. As proposed by McKie, Butty, and Green (2012), face to face meetings can be organized to provide teachers with specific and detailed information regarding on how well a program meets its objectives based on external observations, and teachers should participate in monthly professional development activities, and receive ongoing mentoring and rapid and timely feedback for areas that require quality improvement.

Also critical for high quality teacher-child interaction quality in preschool classrooms is to raise teachers who can effectively interact with children via early childhood teacher education programs. The programs may not fully fulfill their promise given teacher performance shown in this study. The results on what in-service teachers are not doing effectively in their classrooms should be taken into account by teacher educators for the improvement of teacher education curriculum so that it would help early childhood teacher candidates to acquire knowledge, skills, and beliefs that will make them effective in supporting the whole development of children to the fullest extent. Specifically, given the findings in the current study, the areas that teacher educators should attend in programs are as follows: (a) engaging in interactions with children that will enrich their higher order thinking, (b) planning and practicing a range of activities that enrich children's development, (c) increasing productivity in the classrooms, (d) providing feedback that expands and contributes to children's development, (e) supporting children's language development through interactions, (f) responding to social and academic needs of individual children, (g) addressing children's interests, perspectives,

and autonomy in educational processes, and (h) establishing positive climate in classrooms and eliminating yelling as a form of communication. Hamre et al. (2012) demonstrated that a course on the basis of CLASS led to positive changes in participating teachers' knowledge, beliefs, and skills with regard to teacher-child interactions and developing children's literacy and language skills regardless of their level of education and the setting they work in. Thus, a course on effective teacher-child interaction can be developed and used to train teacher candidates in Turkey. In such courses, teacher educators should be aware of, consider, and challenge the beliefs of teacher candidates (Bruner, 1996; Nespor, 1987; Raths, 2001) because the beliefs they hold may intervene in their learning of effective teacher-child interaction. For the purpose of challenging pre-service teachers' beliefs, according to Pajares (1993), self-reflection and belief exploration should be made an important and legitimate feature of teacher education programs. Specifically, considering his suggestions, teacher educators may create cognitive conflict to foster beliefs change by asking their students to prepare and implement lesson plans that are inconsistent with their beliefs, providing new information that are incompatible with their existing beliefs from people who are perceived significant by their students, and showing the inconsistencies in the beliefs system of their students through Socratic method. These require teacher educators to redefine their curricular objectives and assess and monitor pre-service teachers' beliefs as part of their regular curriculum.

Developing teacher qualifications is important but what is also required is to improve teachers' desire to improve themselves for high quality early childhood education considering the evidence about teachers' lack of commitment in the current study. Thus, the efforts directed to improving teacher qualifications via teacher education programs and professional development models should also be followed with the efforts for increasing in-service and pre-service teachers' commitment to their students, schools, and teaching, if it is not feasible to select committed individuals to be teachers. One way to motivate teachers to improve the quality of their classroom may be the establishment of a system that monitors classroom quality in early childhood education programs. In the USA, several states established quality rating and improvement systems for early

childhood education. Williams, Landry, Anthony, Swank, and Crawford (2012) argued that quality improvement systems are beneficial because they provide information to families on the selection of programs for their child and provide information to providers on their quality and make them accountable for improving their practices. Some studies also revealed that quality improvement systems contribute to the improvement of classroom quality in the field of early childhood education (e.g., Hooks, Scott-Little, Marshall, & Brown, 2006; Ma et al., 2011). It is suggested that how well such systems can be implemented and how well they can contribute to quality improvement in educational settings in the public schooling context of Turkey be discussed by educational researchers, policy makers, and practitioners in Turkey thoroughly.

The beliefs of early childhood teachers were desirable to a great extent in the current study given their level of efficacy and support for DAP. Yet the results still pointed to a need for challenging some aspects of the beliefs system of preschool teachers for educational effectiveness as there were some evidence that these beliefs were associated with teacher-child interaction quality in the classrooms. First, early childhood teachers' beliefs about general teaching efficacy were not as strong as their beliefs about personal teaching efficacy. Teachers' faith in the role of teaching to influence students regardless of their home environment should be strengthened to flourish accountability in educational organizations. Otherwise, preschool teachers would be more likely to blame external sources for negative consequences rather than develop a sense of ownership over their job. Given the suggestion of Bandura (1977, 1997), vicarious experiences such as learning from the experience of early childhood teachers who successfully perform in classes with students living in deprived homes, and also verbal persuasions such as hearing from experts that teachers could make a difference regardless of children's characteristics could be helpful for improving general teaching efficacy. Second, preschool teachers should adopt DAP to a greater extent as it was associated with the level of instructional quality in classrooms. Consistently, the beliefs which are not developmentally appropriate should be challenged for quality improvement although it may be hard to alter them (Pajares, 1992). The teacher beliefs that primarily warrant

attention in teacher education programs and professional development activities for quality improvement in early childhood education pertain to teachers' support for children's cognitive and language development along with their social-emotional development and teachers' use of guided inquiry methods along with independent exploration in educational processes.

The change efforts should be especially directed to preschool teachers with least desirable beliefs because teachers with the least desirable beliefs appeared less enthusiastic in their interactions with children in their classrooms compared to teachers with the most desirable beliefs in this study. Also, as shown by the canonical correlation analysis, less positive were teacher efficacy and beliefs about DAP, lower was the level of teacher-child interaction in the classrooms. Of note is that the interventions should address teachers' beliefs about DAP, DIP, and personal and general teaching efficacy distinctly as they seem to be separate constructs to a great extent. Given the model of Guskey (2002), to change teachers' beliefs, in-service and pre-service teachers should be convinced that their inappropriate beliefs obstruct student learning in practice and personally experience how desirable beliefs contribute to student learning and development in preschool classrooms. Pajares (1993) argues that individuals need to see a reason for changing their beliefs and showing how teacher beliefs influence practices, students, and educational outcomes can fulfill this requirement to an extent. Creating efficacy doubts, as suggested by Wheatley (2002), can also be critical for developing a sense of need for self-improvement in early childhood teachers. A change toward quality improvement is considered unachievable with teachers who believe that they are highly effective in classrooms.

Moreover, the current study indicates that teachers are not the only barriers to effective classroom practice. The context of teaching should be improved for quality assurance in early childhood education in Turkey. The change of work context may help preschool teachers act consistently with their efficacy beliefs and beliefs about teaching. First, it is recommended that the efforts be taken to improve parents' misconceptions about early

childhood education. As Cottle and Alexander (2012) stated, the stakeholders should engage in critical reflective dialogue with each other about what is good for young children. Through dialogues, professionals can challenge parents' perceptions about the role of early childhood education and arrive at an agreement with them on its essentials. Parent education as part of parent involvement already constitutes a component of teacher qualifications in Turkey (MoNE, 2008). Teachers may focus on changing the misconceptions of parents about early childhood education as part of parent education activities they carry out in their schools. Also notable for high quality preschool education is the improvement of physical conditions in classrooms. Specifically, the teachers in the present study advocate that class sizes be reduced, and class environments be transformed into more inspiring learning places that involve a variety of educational materials to support children's learning and development effectively. Also, teachers' work schedule should allow them to have some private time during school hours. Otherwise, they feel exhausted and less willing to establish supportive interactions with children in their classrooms. The barriers related to work conditions are considered having mostly financial roots so that their solution may be possible with increased government funding for early childhood education services in Turkey as advised by the World Bank (2013).

5.5. Implications for Further Research

The focus of the current study was on the quality of preschool classrooms in public independent pre-primary schools in Ankara, Turkey. Apparently, the classrooms were similar to each other in teacher-child interaction quality given small standard deviations obtained in this study. The lack of diversity in public classrooms is considered a threat to quantitative studies that aim to explain variance in classroom quality. It is suggested that scholars who are primarily concerned with identifying some factors that distinguish effective classrooms from ineffective classrooms attempt to increase the variation in their data. Ensuring variation in the sample can be a solution for this end, for instance. The literature showed the difference in classroom quality in non-profit and for-profit early

childhood education centers (e.g., Cleveland & Krashinsky, 2009; Sosinsky et al., 2007). Some studies in Turkey similarly figured out the differences in classroom quality of public and private schools (e.g., Baştürk & Işıkoğlu, 2008; Erbay & Ömeroğlu, 2009; Karaküçük, 2008). Therefore, future quantitative research in Turkey may study teacher-child interaction quality in different type of early childhood education centers to capture differences and put forward the factors that explain variations in different type of schools in Turkey, if there is any.

The sophisticated nature of classroom quality is not well-defined in the unique case of public schools that have similar educational contexts, if not identical, regarding teachers' academic qualifications, curriculum, and physical environment. Therefore, the use of inductive methods are considered highly critical for future research on quality in the centralized education system in Turkey. It is highly recommended that follow-up studies with qualitative methods be conducted to examine the reasons in-depth for ineffective classroom practices in public preschool classrooms and also identify the differences in teachers in the most effective and least effective classrooms. Qualitative studies, especially with ethnographic designs, can illustrate variables key to classroom quality in early childhood education, which can lay the foundation for subsequent large-scale quantitative studies. It must be keep in mind that the qualitative findings in the current study are based on the comparison of teachers who were extremely different from each other regarding the level of teacher-child interaction quality in their classrooms and their level of efficacy and support for DAP. Future qualitative studies may employ different sampling methods and use different samples considering teachers' educational background, experience in teaching, and work contexts.

Teachers hold various types of beliefs at varying strength and any standardized tool would be limited in depicting the nature of teacher belief system completely. The open-ended inquiry methods along with quantitative measures that address different facets of teacher beliefs can shed light into the central beliefs that strongly determine teacher behaviors in early childhood education classrooms and contribute to our understanding of the

mechanisms through which these beliefs influence teacher actions. Future research should address the beliefs of pre-service early childhood teachers in addition to beliefs of in-service teachers because teachers already form their beliefs before they enter the profession. Longitudinal studies via qualitative and quantitative methods are considered paramount to indicating how pre-service teachers form, maintain, and change their beliefs through their experience in teacher education programs and later in profession. As this study points to a gap between teacher beliefs and classroom practices in early childhood education classrooms, it is recommended that future research investigate how teachers perceive, explain, and cope with the discrepancy between their beliefs and practices.

Classroom observations that are conducted by trained observers can provide valid and rich data to judge teacher effectiveness and provide good feedback for teachers regarding their strengths and weaknesses; however it needs to be acknowledged that there is not any single measure that could capture all aspects of teacher effectiveness (Goe, Bell, & Little, 2008). The current study judged the quality of classrooms based on the CLASS measure that focuses on teacher-child interactions in educational settings. Future research should apply other measures of quality to study various facets of classroom quality in early childhood education in Turkey. Using multiple measures of observation in the same study can indeed improve reliability, predictive power, and also the potential for diagnostic feedback for teachers to improve their practices (Kane & Staiger, 2012). Especially important is to conduct future studies on the experiences of individual children in early childhood education centers as this is neglected in studies that focus on global classroom quality like the present one. Indeed, it may be misleading to assume that children who attend the same classroom experience an equal level of quality (Hallam et al., 2009; Jeon et al., 2010).

According to Lee and Walsh (2004), two major ways for conceptualizing quality in early childhood education have been standards-based quality and outcome-determined quality in research. This study adopted a standards-based approach to the study of classroom

quality in preschool education as classroom quality was evaluated considering how well they meet the standards determined by CLASS. However, outcome-based studies are required to empirically examine how well classroom practices contribute to various aspects of child development. As an extension of this study, future research should delve into the association between process quality and outcome quality and specifically should test the relation of CLASS to children's gains in early childhood education classrooms in Turkey. Moreover, using the framework of Katz (1993b), the quality should not be only defined from above by researchers. The future research in Turkey should also investigate the perceptions of children, teachers, parents, and other key stakeholders about the status of early childhood education classrooms, the reasons for ineffective practices, and also the solutions for quality improvement. The use of postmodernist approaches in future research is highly recommended to unearth the variations in the definitions of quality by various stakeholders and cultural values about early childhood education in Turkey.

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APPENDICES

APPENDIX A: SAMPLE ITEMS FROM TEACHER BELIEFS SURVEY

BENİM EĞİTİM FELSEFEME GÖRE,	Hiç önemli değildir	Çok az önemlidir	Orta düzeyde önemlidir	Oldukça önemlidir	Son derece önemlidir
2. Etkinliklerin çocukların ilgi alanlarına göre düzenlenmesi	(1)	(2)	(3)	(4)	(5)
5. Her bir eğitim alanının (matematik, Türkçe, fen vb.) farklı zamanlarda birbirinden bağımsız biçimde ayrı ayrı öğretilmesi	(1)	(2)	(3)	(4)	(5)
7. Öğretmen-çocuk etkileşiminin çocukların öğrenmeye karşı olumlu tutum geliştirmelerini desteklemesi	(1)	(2)	(3)	(4)	(5)
10. Anaokulunda sözcük ve harf tanımaya yönelik eğitim verilmesi	(1)	(2)	(3)	(4)	(5)

**APPENDIX B: SAMPLE ITEMS FROM TEACHER SELF-EFFICACY SCALE FOR
EARLY CHILDHOOD EDUCATION**

	Hiç	Çok az	Biraz	Çok	Son derece çok				
1. Eğitsel etkinliklere ilgi göstermeyen çocukları etkinliklere aktif olarak katılmaları için ne kadar iyi motive edebilirsiniz?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2. Çocukların üst düzey düşünme becerilerini kullanmalarını sağlayan öğretim yöntemlerini (beyin fırtınası yapma, tahminde bulunma, problem çözme vb.) ne kadar iyi uygulayabilirsiniz?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5. Çocukların ailelerinin sınıf ve okul etkinliklerine katılımlarını ne kadar iyi sağlayabilirsiniz?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. Çocukların farklı alanlardaki (bilişsel, sosyal duygusal, motor, dil) gelişimini ne kadar iyi değerlendirebilirsiniz?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7. Sınıfınızda öğrenme ortamını olumsuz yönde etkileyebilecek davranışların oluşmasını ne kadar önleyebilirsiniz?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

APPENDIX C: SAMPLE ITEMS FROM TEACHER EFFICACY SCALE

	Kesinlikle katılmıyorum					Kesinlikle katılıyorum
1. Bir çocuğun ne kadar öğrenebileceği öncelikle onun aile özelliklerinin nasıl olduğuna bağlıdır.	(1)	(2)	(3)	(4)	(5)	(6)
3. Ev ortamının çocukların başarısı üzerindeki etkisi oldukça fazla olduğundan bir öğretmenin başarabilecekleri oldukça sınırlıdır.	(1)	(2)	(3)	(4)	(5)	(6)
5. Eğer bir çocuk önceki bir etkinlikte kazandırdığım bir bilgiyi hatırlayamazsa, öğrendiklerini kalıcı hale getirmek için sonraki etkinliklerde onun için ne yapmam gerektiğini bilirim.	(1)	(2)	(3)	(4)	(5)	(6)
6. Eğer sınıftaki bir çocuk sınıfta gürültü yapıp etrafı rahatsız ederse, onun uygun davranışlara yönlendirilmesini hızlı bir şekilde sağlayacak bazı teknikleri bildiğimden eminim.	(1)	(2)	(3)	(4)	(5)	(6)

APPENDIX D: TEACHER INTERVIEW QUESTIONS

1. Kaliteli okul öncesi eğitim denilince aklınıza neler geliyor?

- Öğretmenlerin beklentilerini düşünürseniz, onlar için kaliteli okul öncesi eğitim neleri kapsar?
- Sizce veliler kaliteli okul öncesi eğitimi nasıl tanımlarlar?
- Sizce çocuklara göre kaliteli okul öncesi eğitim ne anlama gelir?
- Sizce toplumun genel olarak okul öncesi eğitimin kalitesine ilişkin tarifi nasıl olur?
 - Okul öncesi eğitime sizce toplum ne düzeyde değer veriyor? Öğretmenlerin rolünü ne derece anlıyor?

2. Kaliteli okul öncesi eğitim için eğitim programının özellikleri sizce nasıl olmalıdır?

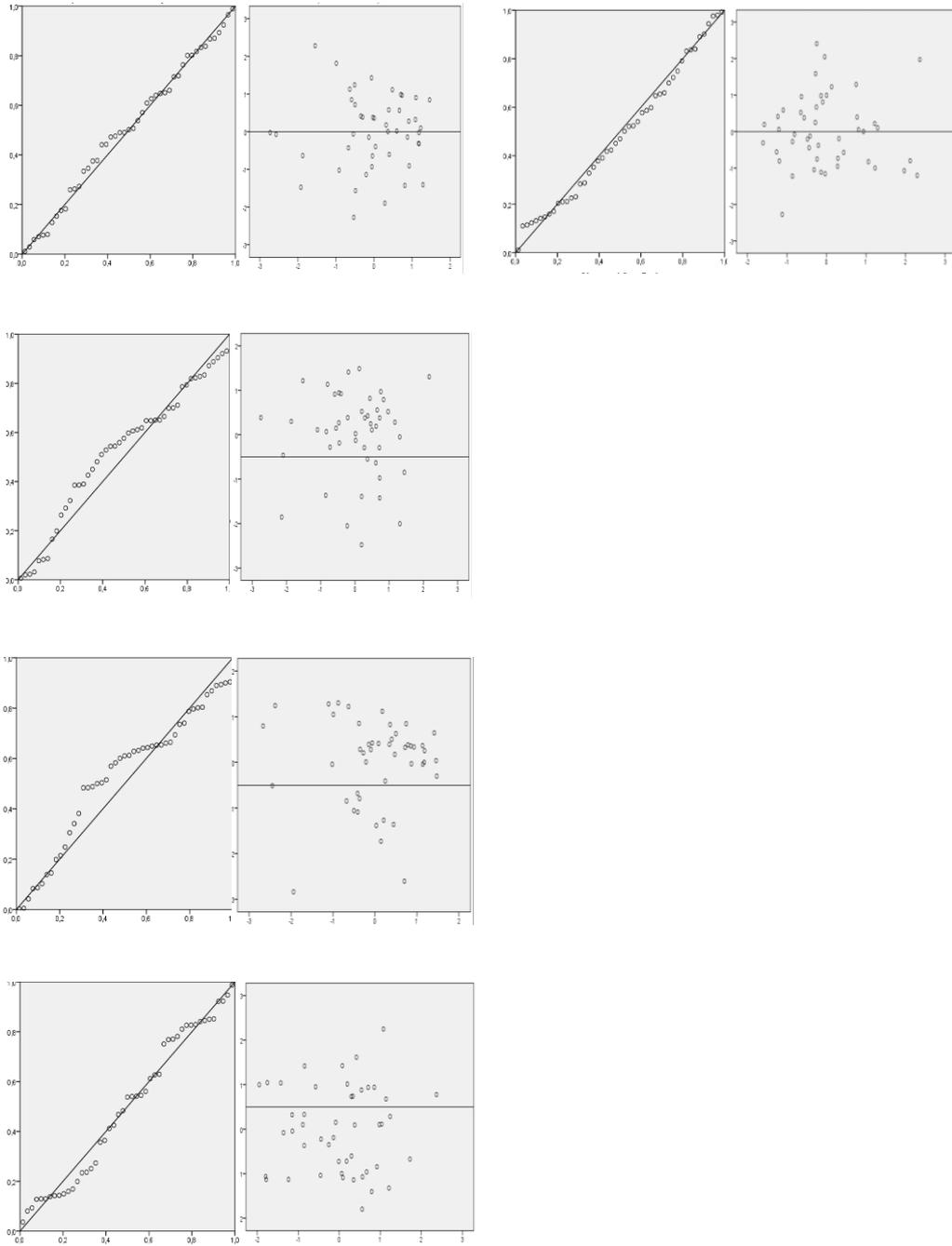
- Kaliteli olması için okul öncesi eğitimin amaçları neler olmalıdır?
- Kaliteli okul öncesi eğitim için öğretmenlerin özellikle hangi alanlarda yeterli olması gerektiğini düşünüyorsunuz?
- Kaliteli olması için öğrenme-öğretme süreçleri nasıl tasarlanmalıdır?
 - Kaliteli okul öncesi eğitimde öğretmenin başlıca rolünü nasıl tarif edersiniz?
 - Kaliteli bir eğitim olması için çocukların öğretim sürecinde rolü sizce nasıl olmalıdır?
 - Alan yazın, okul öncesi eğitime ilişkin iki temel yaklaşım öne sürmektedir. Bunlardan birisi öğretmenin etkinlikleri belirlediği, grup odaklı ve bilgi aktarmaya yönelik bir eğitim vermeye çalıştığı akademik odaklı yaklaşımdır. Diğeri ise, bunun aksine etkinliklerin çocuk tarafından belirlendiği ve çocuğun daha çok kendi kendisine bilgiye ulaşmaya çalıştığı çocuk merkezli yaklaşımdır. Siz bu iki zıt yaklaşımın okul öncesi eğitimdeki yeri hakkında neler düşünüyorsunuz. Sizce öğretim süreçleri bu yaklaşımlardan hangisini esas almalıdır?
- Kaliteli okul öncesi eğitim için sizce çalışma koşulları / eğitim ortamı nasıl düzenlenmelidir?
- Okul öncesi eğitimde kaliteyi yakalamak için aileler neler yapmalıdır? Öğretmen-ebeveyn ilişkisi nasıl kurulmalı ve yürütülmelidir?

3. Genel olarak Türkiye’de okul öncesi eğitimin kalitesi hakkında ne düşünüyorsunuz?

- Sizce okul öncesi eğitime katılan çocukların gelişimine ne düzeyde katkı sağlanıyor?
- Velilerin beklentilerinin ne düzeyde karşılandığını düşünüyorsunuz?
- Çocuklar sizce okul öncesi eğitimden ne kadar yararlanabiliyorlar? Bu eğitim sürecinde ne düzeyde mutlular?
- Sizce öğretmenler çalışma şartlarından ne kadar memnunlar?
- Sizce mevcut sistemde okul öncesi eğitim toplumsal beklentileri ne düzeyde karşılayabiliyor?

4. Eğer varsa bu konu ile ilgili diğer eklemek istedikleriniz nelerdir?

APPENDIX E: NORMALITY PROBABILITY PLOTS AND SCATTERPLOTS



APPENDIX F: ETHICS APPROVAL OF RESEARCH BY METU

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01MART 2016

Gönderilen: Yrd.Doç.Dr. Yeşim ÇAPA- AYDIN

Eğitim Bilimleri

Gönderen: Prof. Dr. Canan SÜMER

İnsan Araştırmaları Komisyonu Başkanı

İlgi: Etik Onayı

Sayın Yrd.Doç.Dr. Yeşim ÇAPA-AYDIN'ın danışmanlığını yaptığı doktora öğrencisi Rahime ÇOBANOĞLU'nun "Okul Öncesi Eğitimde Öğretmen-Öğrenci Etkileşiminin Kalitesi ile Öğretmen İnançları Arasındaki İlişki " başlıklı araştırması İnsan Araştırmaları Komisyonu tarafından uygun görülerek gerekli onay 2016-EGT-021 protokol numarası ile 22.02.2016-10.08.2016 tarihleri arasında geçerli olmak üzere verilmiştir.

Bilgilerinize saygılarımla sunarım.

Prof. Dr. Canan SÜMER

Uygulamalı Etik Araştırma Merkezi
İnsan Araştırmaları Komisyonu Başkanı

Prof. Dr. Meliha ALTUNIŞIK

İnsan Araştırmaları Komisyonu

Üyesi

Prof. Dr. Mehmet UTKU

İnsan Araştırmaları Komisyonu

Üyesi

Prof. Dr. Aydan BALAMİR

İnsan Araştırmaları Komisyonu

Üyesi

Prof. Dr. Ayhan SOL

İnsan Araştırmaları Komisyonu

Üyesi

APPENDIX G: ETHICS APPROVAL OF RESEARCH BY MoNE



T.C.
ANKARA VALİLİĞİ
Milli Eğitim Müdürlüğü

ÖİÖR

Sayı : 14588481-605.99-E.3820543
Konu : Araştırma İzni

05.04.2016

ORTA DOĞU TEKNİK ÜNİVERSİTESİNE
(Öğrenci İşleri Daire Başkanlığı)

İlgi: a) MEB Yenilik ve Eğitim Teknolojileri Genel Müdürlüğünün 2012/13 nolu Genelgesi.
b) 24/03/2016 tarihli ve 1309 sayılı yazımız.

Üniversiteniz Eğitim Bilimleri Anabilim Dalı Eğitim Programları ve Öğretim Programları doktora öğrencisi Rahime ÇOBANOĞLU'nun "Okul Öncesi Eğitimde Öğretmen-Öğrenci Etkileşiminin Kalitesi ile Öğretmen İnançları Arasındaki İlişki" konulu araştırma kapsamında uygulama talebi Müdürlüğümüzce uygun görülmüş ve uygulamanın yapılacağı İlçe Milli Eğitim Müdürlüğüne bilgi verilmiştir.

Görüşme formunun (11 sayfa) araştırmacı tarafından uygulama yapılacak sayıda çoğaltılması ve çalışmanın bitiminde bir örneğinin (cd ortamında) Müdürlüğümüz Strateji Geliştirme (1) Şubesine gönderilmesini arz ederim.

Müberra OĞUZ
Müdür a.
Şube Müdürü

07-04-2016 - 6143

Güvenli Elektronik İmza ile
Aslı ile Aynıdır.

07/04/2016

Müberra OĞUZ
Şef

Konya yolu Başkent Öğretmen Evi arkası Beşevler ANKARA
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APPENDIX H: TURKISH SUMMARY

Türkçe Özet

Giriş

Okul öncesi eğitim programlarının çocukların gelişimine sağladığı katkı pek çok çalışmada ortaya konmuştur (örn., Camilli, Vargas, Ryan ve Barnett, 2010; Gilliam ve Zigler, 2001; Gormley, Gayer, Phillips ve Dawson, 2005; Kılıç, 2008; Lazar ve diğerleri, 1982; Loeb, Fuller, Kagan ve Carrol, 2004; Magnuson, Ruhm ve Waldfogel, 2007; Sparling ve Miller-Johnson, 2002). Heckman ve Masterov'a (2007) göre, erken çocukluk dönemindeki müdahaleler özellikle çocuklara motivasyon ve başarı yönelimli tutumlar kazandırarak onların sonraki okul aşamalarında daha başarılı olmalarını sağlamakta ve dolayısıyla uzun vadede daha kaliteli bir iş gücünün ve toplumsal yapının ortaya çıkmasına katkı sağlamaktadır. Erken çocukluk eğitiminin öneminin anlaşılmaya başlanması ile birlikte birçok ülke okul öncesi eğitim hizmetlerini yaygınlaştırmak amacıyla yoğun çaba sarf etmiştir (OECD, 2014). Okul öncesi eğitim kurumlarına devam eden çocukların sayısını arttırmaya yönelik bu çabalara programların niteliğini iyileştirmeye yönelik çabaların eşlik etmesi büyük önem taşımaktadır. Zira bugüne kadar yapılan birçok çalışma, okul öncesi eğitiminden edinilen kazanımların programların niteliğine bağlı olarak ortaya çıktığını göstermiştir (örn., Keys ve diğerleri, 2013; Love, Schochet ve Meckstroth, 1996; NICHD 2001, 2002, 2004, 2005; Peisner-Feinberg ve diğerleri, 2001; Sylva, Melhuish, Sammons, Siraj-Blatchford ve Taggart, 2011). Her şeyden önce, bireylerin tam gelişimine katkıda bulunan eğitime erişim olanağı Birleşmiş Milletler (1948) tarafından evrensel bir insan hakkı olarak tanınmıştır.

Hem bireysel gelişim hem de toplumsal kalkınma için nitelikli okul öncesi eğitimin önemi ortadayken, eğitimde niteliğin nasıl tanımlanacağı önemli bir soru olarak karşımıza çıkmaktadır. Lee ve Walsh (2004) yüz kırk değerlendirme raporunu analiz ettikleri çalışmalarında okul öncesi eğitimde niteliğin sonuç, standart ve gelişimsel uygunluk odaklı tanımlandığına dikkat çekmiştir. Buna göre, okul öncesi eğitimde nitelik

değerlendirilirken çocukların kazanımlarına, belirlenmiş standartların programlarda karşılanma düzeyine ve uygulamaların gelişimsel olarak uygun uygulamalar yaklaşımına uygunluğu göz önünde bulundurulmaktadır. Okul öncesi eğitimde niteliği tarif etmenin tek yolu olmasa bile, çocuklar için eğitim süreçlerinde nelerin önemli olduğuna dair kılavuzluk eden bazı çerçeveler bugün mevcuttur. Örneğin, okul öncesi eğitim alanında Amerika'da öncü kuruluşlardan birisi olan NAEYC (2008) nitelikli okul öncesi eğitim için çocuklarla olumlu ilişkiler geliştirmek, çocukların her alandaki gelişimini desteklemek, programlarda çocuk gelişimi veya okul öncesi eğitimi konusunda eğitim görmüş ve mesleki eğitim faaliyetlerine devam eden öğretmenler istihdam etmek ve aileler ile karşılıklı güven ve saygıya dayalı ilişkiler kurmak ve onların çocuklarının eğitimine katılımlarını desteklemek gibi bazı hususlara dikkat çekmiştir. Avrupa Birliği de üye ülkelerde izlenmesi gereken ortak politika kapsamında nitelikli erken çocukluk eğitimi tarif ederken şu noktalara değinmiştir: (a) güvenli ve uyarıcı bir öğrenme ortamının sağlanması, (b) personelin çocukları desteklemesi ve cesaretlendirmesi, (c) çocuklar için çok sayıda sözlü ve sosyal etkileşim fırsatının sunulması, (d) programlarda çocukların bilişsel, fiziksel ve sosyal-duygusal gelişimlerini sağlayacak uygun yaşantıların sunulması (European Commission, 2014). Bu çerçevelerde görüldüğü üzere, okul öncesi eğitimde kalitenin en belirleyici unsurlardan birisi hiç şüphesiz öğretmenlerdir. Hanushek (2011) düşük performans sergileyen öğretmenlerin sistemden elenmesi ve iyi öğretmenlerin maddi olarak ödüllendirilmesi ve kalabalık sınıflara atanması ile eğitim çıktılarında belirgin bir iyileşmenin sağlanacağını ileri sürmüştür. Darling-Hammond (2000) öğretmenlerin bilgi ve becerileri ile öğrenci başarısının yakından ilişkili olduğunu ortaya koymuştur. Öğretmenlerin eğitim süreçlerinde yarattığı fark nedeniyle eğitim araştırmalarının bir bölümü öğretmen etkinliğini belirleyen faktörlerin belirlenmesine odaklanmıştır. Bu çalışmalarda, öğretmenlerin psikolojik özellikleri, öğretim stilleri, davranışları, bilgi ve inançları ile öğrencilerin gelişimi arasındaki ilişki araştırılmıştır (Campbell, Kyriakides, Muijs ve Robinson, 2003).

Bu çalışmada da bazı yönleriyle öğretmen etkinliği araştırılmıştır. Özellikle, okul öncesi eğitim sınıflarındaki öğretmen-çocuk etkileşiminin niteliği ile öğretmen inançları

arasındaki ilişki incelenmiştir. Öğretmenlerin eğitimi, deneyimi, davranışları ve kişisel özelliklerinin yanı sıra değer ve inançları da eğitimde kalitenin belirleyicilerinden birisidir (Feeney ve Chun, 1985). Zira öğretmenlerin zihinsel süreçleri onların karar ve davranışlarını etkileyebilir (Clark ve Yinger, 1977). Ne var ki, öğretmenlerin eğitime yönelik inançları her zaman etkin yaklaşımlarla uygun olmayabilir (Floden ve Klinzing, 1990) ve bu durum eğitimdeki çıktıları olumsuz yönde etkileyebilir. Ayrıca, istendik inançlar geliştirmiş olsalar bile, öğretmenler her zaman inandıkları şekilde sınıflarında hareket etmeyebilirler (Clark ve Peterson, 1984). Pajares'e (1992) göre eğitim araştırmaları öğretmen inançları ile sınıf uygulamaları arasındaki etkileşimi aydınlatmadığı sürece, çok şey başarılmış sayılamaz. Kagan'ın (1992) da belirttiği gibi öğretmen inançları üzerine yapılacak çalışmalar etkili öğretmenlik hakkındaki bilgimizin artmasına önemli katkılar sağlayacaktır.

Bu çalışmada, öğretmen-çocuk etkileşiminin niteliği, Katz'ın (1993a) tanımladığı şekliyle yukarıdan aşağıya doğru bir perspektif ile ele alınmış ve sınıfların kalitesi modernist yaklaşım çerçevesinde (Logan ve Sumsion, 2010) belirlenmiş ölçütler ışığında değerlendirilmiştir. Öğretmen inançları kapsamında, gelişimsel açıdan uygun olan ve uygun olmayan uygulamalarla ilgili öğretmen inançları ve öğretmen özyeterlik ve genel öğretmen yeterlik algısı ele alınmıştır. Gelişimsel açıdan uygun olan ve uygun olmayan uygulamalar (DAP ve DIP) yaklaşımı etkili erken çocukluk eğitimi için yol göstermek amacıyla NAEYC tarafından önerilmiştir. Bu yaklaşım, okul öncesi eğitimde sınıf uygulamalarının çocukların yaşı ve gelişimsel durumlarına ve bireysel ve kültürel özelliklerine göre düzenlenmesi gerektiğini vurgulamaktadır (Copple, Bredekamp, Koralek ve Charner, 2013). Öte taraftan, öğretmen özyeterliği, belirli öğretim görevlerini yerine getirme hususunda bir öğretmenin kendisini ne kadar yeterli gördüğünü (Tschannen-Moran, Woolfolk Hoy ve Hoy, 1998) ve genel öğretmen yeterliği, bir öğretmenin herhangi bir öğretmenin öğrenciler üzerindeki etkisine dair inançlarını (Gibson ve Dembo, 1984) tanımlamaktadır. Bu çalışmada özellikle şu araştırma sorularına yanıt aranmıştır:

1. Gözlemlenen sınıflarda öğretmen-çocuk etkileşiminin niteliği ne düzeydedir?

2. Gözlemlenen sınıflarda okul öncesi öğretmenlerinin özyeterlik ve genel öğretmen yeterliği ne düzeydedir?
3. Gözlemlenen sınıflarda okul öncesi öğretmenleri gelişimsel olarak uygun olan ve uygun olmayan uygulamaları ne düzeyde desteklemektedirler?
4. Gözlemlenen sınıflarda öğretmen-çocuk etkileşiminin niteliği ile öğretmen inançları arasında anlamlı bir ilişki var mıdır?
5. Gözlemlenen sınıflarda öğretmen inançları öğretmen-çocuk etkileşiminin niteliği üzerinde doğrudan veya dolaylı bir etki yaratmakta mıdır?
6. Yüksek ve düşük nitelikli sınıflardaki öğretmenlerin nitelikli okul öncesi eğitim hakkındaki temel inançları nelerdir? Yüksek ve düşük performans sergileyen bu öğretmenlerin nitelikli okul öncesi eğitim hakkındaki inançları arasında bir benzerlik ve farklılık var mıdır?
7. Daha yüksek seviyede yeterlik algısına sahip olan ve gelişimsel olarak uygun uygulamaları daha güçlü düzeyde destekleyen okul öncesi öğretmenleri ile daha düşük düzeyde yeterlik algısına sahip olan ve gelişimsel olarak uygun uygulamaları daha düşük düzeyde destekleyen okul öncesi öğretmenlerinin sınıf uygulamalarının temel özellikleri nelerdir? Bu öğretmenlerin sınıf uygulamaları arasında bir benzerlik ve farklılık var mıdır?

Bugüne kadar yapılan pek çok çalışma okul öncesi eğitim programlarının niteliğinin istenilen düzeyde olmadığını gösterilmiştir (örn., Bryant, Clifford ve Peisner, 1991; Goelman ve diğerleri, 2006; Herrera, Mathiesen, Merino ve Recart, 2005; Howes ve Smith, 1995; Tayler, Ishimine, Cloney, Cleveland ve Thorpe, 2013; Villalón, Suzuki, Herrera ve Mathiesen, 2002). Kaliteye duyulan ihtiyaç ortadayken, bu çalışmada yapılmaya çalışıldığı gibi okul öncesi eğitim kurumlarında kalite ile ilişkili faktörlerin ortaya konulması eğitim uygulamalarını iyileştirilmesine önemli katkılar sunabilir. Öğretmen etkinliğini anlamak, öğretmenlerin yetiştirilmesi, atanması, değerlendirilmesi ve geliştirmesi gibi önemli konularda doğru kararlar alınmasına yardımcı olacaktır (Stronge, Ward ve Grant, 2011). Türkiye’de 2015-2016 akademik yılı için okul öncesi eğitim kurumlarına devam eden çocuk sayısı on iki milyonu aşmasına rağmen (Ministry

of National Education Strategy Development Presidency, 2016), okul öncesi eğitim sınıflarının niteliği üzerine çok fazla sayıda çalışma yapılmamıştır. Bilindiği kadarıyla Türkiye’de sadece üç çalışmada gözlem yöntemi kullanılarak (Baştürk ve Işıkoğlu, 2008; Ertürk, 2013; Güçhan Özgül, 2011) okul öncesi eğitimde genel sınıf niteliği üzerine odaklanılmış ve iki çalışmada (Erbay ve Ömeroğlu, 2009; Karaküçük, 2008) fiziksel çevrenin kalitesi incelenmiştir. Okul öncesi öğretmenlerinin sınıf uygulamalarına ilişkin yapılan araştırmaların birçoğunun sınıf gözlemleri yerine öğretmen raporlarına dayandırılması önemli bir sınırlılık olarak karşımıza çıkmaktadır. Sınıf niteliğini gözlem yolu ile ölçen ve yapısal bazı faktörler yerine öğretmen-çocuk etkileşime ve öğretmen inançlarına odaklanan bu çalışmanın alan yazında önemli bir eksikliği gidermesi beklenmektedir.

Yöntem

Bu çalışmada karma yöntem araştırma deseni kullanılmıştır. Özellikle bir araştırma yönteminin diğer araştırma yöntemine göre ikincil bir role sahip olduğu gömülü karma araştırma deseni ile nitel araştırma yöntemi nicel araştırma yönteminin içerisine yerleştirilmiştir (Creswell ve Plano Clark, 2007). Greene, Caracelli ve Graham'ın (1989) çerçevesi ile değerlendirildiğinde, bu çalışmada nitel veriler tamamlayıcı bir role sahiptir ve öncelikli olarak elde edilen nicel sonuçların bazı yönlerinin detaylandırılmasına ve açıklanmasına katkı sağlamaktadır. Nicel araştırma boyutunda, bağıntısal araştırma yöntemi kullanılmış ve nicel veriler öğretmen anketi ve yapılandırılmış sınıf gözlemi yolu ile toplanmıştır. Nitel araştırma boyutunda ise olgubilim ve kültür analizi desenleri kullanılmış ve nitel veriler yarı yapılandırılmış öğretmen görüşmeleri ve yapılandırılmamış sınıf gözlemi ile elde edilmiştir.

Bu çalışmada beş farklı örneklem yer almaktadır. Örneklem 1 (273 katılımcı) ve Örneklem 2 (251 katılımcı) öğretmen inançlarının ölçülmesinde kullanılan ölçeklerin geçerlik ve güvenilirlik çalışmasında kullanılmıştır. Örneklem 3 (47 katılımcı) ile kullanılan gözlem aracının geçerlik ve güvenilirliği test edilmiş ve çalışmanın nicel soruları

cevaplandırılmıştır. Nicel araştırma boyutunda ana veri setini oluşturan bu örneklem küme örnekleme yöntemi ile seçilmiştir. Bu örnekleme Ankara'nın sekiz merkez ilçesinde 28 farklı okulda görev yapan okul öncesi öğretmeni yer almaktadır. İlçelere göre katılımcı öğretmenlerin dağılımı göz önüne alındığında, en fazla katılım Altındağ (%19.1, 9 katılımcı) ve Çankaya (%19.1, 9 katılımcı) ilçelerinden sağlanmış ve onları sırasıyla Etimesgut (%14.9, 7 katılımcı), Sincan (%12.8, 6 katılımcı), Yenimahalle (%12.8, 6 katılımcı), Keçiören (%8.5, 4 katılımcı), Mamak (%8.5, 4 katılımcı) ve Gölbaşı (%4.3, 2 katılımcı) ilçeleri takip etmiştir. Katılımcı öğretmenlerin en dikkat çekici özellikleri büyük çoğunluğunun (%89.4) lisans derecesine sahip olması ve ortalama 11 yıldır ($SS=6.42$) öğretmenlik yapıyor olmalarıdır. Örneklem 4 (4 katılımcı) ve Örneklem 5 (4 katılımcı) bu çalışmanın nitel araştırma boyutunda kullanılmıştır. Her iki örnekleme katılımcı öğretmenler aykırı durum örnekleme yöntemi ile seçilmiştir. Örneklem 4 ile yüksek performans sergileyen iki öğretmen ile düşük performans sergileyen iki öğretmenin nitelikli okul öncesi eğitime yönelik görüşleri incelenmiştir. Örneklem 5 ile gözlemlenen öğretmenler arasında en yüksek seviyede yeterlik algısına sahip olan ve gelişimsel olarak uygun uygulamaları en güçlü düzeyde destekleyen iki öğretmen ile en düşük düzeyde yeterlik algısına sahip olan ve gelişimsel olarak uygun uygulamaları en düşük düzeyde destekleyen iki öğretmenin sınıf uygulamaları araştırılmıştır.

Nicel veriler yapılandırılmış sınıf gözlemi ve öğretmen anketi ile toplanmıştır. Yapılandırılmış gözlemlerde Pianta, La Paro ve Hamre (2008) tarafından geliştirilmiş olan Sınıf Değerlendirme Puanlama Sistemi (Classroom Assessment Scoring System [CLASS]) kullanılmıştır. CLASS, sınıf kalitesini 7 puanlık ölçekte (1-2: düşük aralık, 3-4-5: orta aralık, 6-7: yüksek aralık) üç boyutta değerlendirmektedir. Bu boyutlar duygusal destek, sınıf organizasyonu ve öğretim desteğidir. Bu üçlü yapı bu çalışmada duygusal destek boyutundaki olumsuz iklim göstergesi çıkarılarak doğrulanmıştır. Öğretmen anketi ise şu üç ölçekten oluşmaktadır: Öğretmen İnançları Anketi, Okul Öncesi Eğitim için Öğretmen Özyeterlik Ölçeği ve Öğretmen Yeterlik Ölçeği. *Öğretmen İnançları Anketi*, Kim ve Buchanan (2009) tarafından NAEYC tarafından önerilen gelişimsel olarak uygun uygulamalar (DAP) yaklaşımına göre geliştirilmiştir. Bu çalışmada Türkçeye uyarlanan

bu ölçek için “gelişimsel olarak uygun uygulamalara yönelik inançlar” ve “gelişimsel olarak uygun olmayan uygulamalara yönelik inançlar” olmak üzere iki alt boyut bulunmuştur. *Okul Öncesi Eğitim için Öğretmen Özyeterlik Ölçeği*, bu çalışma kapsamında okul öncesi öğretmenlerinin özyeterlik algılarının ölçülmesi amacıyla geliştirilmiştir. Geçerlik ve güvenilirlik çalışması sonuçlarına göre bu ölçek okul öncesi öğretmenlerinin özyeterlik algılarını “öğretime yönelik özyeterlik” ve “aile katılımına yönelik özyeterlik” olmak üzere iki boyutta ölçmektedir. *Öğretmen Yeterlik Ölçeği*, Gibson ve Dembo'nun (1984) öğretmen yeterlik ölçeğinin kısaltılmış halinin Çapa (2005) tarafından düzenlenmiş halidir. Bu çalışmada Türkçeye uyarlanan bu ölçek için “kişisel yeterlik” ve “genel öğretim yeterliği” olmak üzere ikili faktör yapısı doğrulanmıştır. Çalışmanın nitel boyutunda, veriler yarı yapılandırılmış öğretmen görüşmeleri ve ucu açık sınıf gözlemi ile toplanmıştır. Nitel çalışma bulgularının geçerlik ve güvenilirliği için uzun süreli etkileşim, uzman incelemesi, ayrıntılı betimleme ve tutarlılık incelemesi yöntemlerine başvurulmuştur. Nicel verilerin analizinde betimsel istatistikler ve korelasyon, kanonik ve yol analizleri kullanılmıştır. Nitel veriler ise içerik analizi yöntemi ile analiz edilmiştir.

Bulgular

Bu çalışmada okul öncesi eğitim sınıflarının gözlemlenen niteliği, duygusal destek boyutunda orta aralıkta ($Ort. = 4.97, SS = 0.90$), sınıf organizasyonu boyutunda neredeyse yüksek aralıkta ($Ort. = 5.79, SS = 0.87$) ve öğretim desteği boyutunda ise düşük aralığa yakın ($Ort. = 2.47, SS = 0.57$) olarak tespit edilmiştir. Bütüncül bir değerlendirme yapıldığında, öğretmen-çocuk etkileşiminin niteliği sınıflarda orta düzeydedir ($Ort. = 4.41, SS = 0.67$). Sınıfların kalite puanlarının birbirine yakın olması dikkat çekici bulgulardan birisidir. Tek yönlü varyans analizi, boyutlar arasındaki puan farklılıklarının istatistiksel olarak anlamlı olduğunu ortaya koymuştur, $F(2, 92) = 521.95, p = .00$, kısmi $\eta^2 = .92$. Sınıfların niteliği, sınıf organizasyonu boyutunda duygusal destek ve öğretim desteği boyutlarına göre ve duygusal destek boyutunda öğretim desteği boyutuna göre anlamlı düzeyde daha yüksektir. Öğretmenlerin en başarılı olduğu konu sınıf

organizasyonu boyutunda davranış yönetimi (*Ort.* = 6.27, *SS* = 1.22) ve en başarısız oldukları konu öğretim desteği boyutunda kavram gelişimidir (*Ort.* = 2.26, *SS* = 0.60).

Katılımcı öğretmenlerin özyeterlik inançlarının ortalaması, hem öğretime (*Ort.* = 7.30, *SS* = 0.67) hem de aile katılımına (*Ort.* = 7.46, *SS* = 1.00) yönelik olarak 9lu derecelendirme sisteminde 7 üzerinde bulunmuştur. Bu örneklem için genel öğretim yeterliğinin ortalaması, 6lı derecelendirme sisteminde 4 üzerinde hesaplanmıştır (*Ort.* = 4.17, *SS* = 1.01). Okul öncesi öğretmenlerinin kişisel yeterlik algılarının (*Ort.* = 5.03, *SS* = 0.79) genel öğretim yeterliğine yönelik algılarına göre daha olumlu olduğu dikkat çekmiştir. Tek yönlü varyans analizi, bu farklılığın istatistiksel olarak anlamlı olduğunu ortaya koymuştur ($F(1, 46) = 19.59, p = .00$, kısmi $\eta^2 = .30$). Okul öncesi öğretmenlerinin kendilerini en yüksek düzeyde yeterli gördükleri konu değerlendirme sürecinde gelişimi diğerlerinden farklı olan çocukları tespit edebilmek (*Ort.* = 7.62, *SS* = 0.96) ve kendilerini en düşük düzeyde yeterli gördükleri konu ise eğitsel etkinliklere ilgi göstermeyen çocukları etkinliklere aktif olarak katılmaları için motive edebilmektir (*Ort.* = 6.64, *SS* = 1.28).

Bu çalışmada, okul öncesi öğretmenlerinin gelişimsel olarak uygun uygulamalar yaklaşımını (*Ort.* = 4.46, *SS* = 0.37) gelişimsel olarak uygun olmayan uygulamalar yaklaşımına (*Ort.* = 2.77, *SS* = 0.64) kıyasla daha güçlü benimsemiş oldukları bulunmuştur. Tek yönlü varyans analizi sonuçlarına göre, öğretmenlerin bu iki yaklaşıma katılım oranları arasındaki fark istatistiksel olarak da anlamlıdır ($F(1, 46) = 273.71, p = .00$, kısmi $\eta^2 = .86$). Her ne kadar gelişimsel olarak uygun uygulamalar bu örneklemde daha güçlü desteklenmiş olsa da, çalışmaya katılan öğretmenlerden yaklaşık %34'ünün gelişimsel olarak uygun olmayan uygulamalar yaklaşımını en az orta düzeyde destekledikleri tespit edilmiştir. Okul öncesi öğretmenlerinin en çok destekledikleri uygulama, öğretmen-çocuk etkileşiminin çocukların öğrenmeye karşı olum tutum geliştirmelerini desteklemesidir (*Ort.* = 4.85, *SS* = 0.36). Diğer taraftan, okul öncesi öğretmenlerinin en düşük düzeyde önemli gördükleri uygulama ise çocukların ilgi alanları ya da mevcut durumları düşünülmeden önceden hazırlanmış eğitim programının

olduđu gibi takip edilmesidir ($Ort.= 1.97$, $SS = 1.29$). Gelişimsel açıdan uygun olmayan fakat okul öncesi öğretmenleri tarafından en fazla desteklenen uygulama ise gerçekten hiç katılmak istemedikleri etkinlikler olduğunda çocukları motive etmek için öğretmenlerin ödüllere başvurmalarıdır ($Ort. = 3.83$, $SS = 1.05$).

Korelasyon analizinde öğretmenlerin hem aile katılımına hem de öğretime yönelik özyeterlik algıları ile öğretmen-çocuk etkileşiminin sınıf organizasyonu boyutu arasında anlamlı ve pozitif yönlü bir ilişki bulunmuştur (.31). Öğretime yönelik özyeterlik algısı ayrıca sınıfların aldıkları toplam CLASS puanı ile de anlamlı derecede ilişkili bulunmuştur (.30). Bunun yanı sıra, öğretmen-çocuk etkileşiminin üç boyutunun birbiri ile ilişkili olduğu saptanmıştır. Korelasyon katsayısı duygusal destek ile sınıf organizasyonu boyutları arasında .70, duygusal destek ile öğretim desteđi boyutları arasında .65 ve sınıf organizasyonu ve öğretim desteđi boyutları arasında .42 olarak hesaplanmıştır. Öğretmen inançlarının birbiri ile ilişkisine yönelik olarak bulgular, gelişimsel olarak uygun uygulamalara yönelik inançların öğretime yönelik özyeterlik algısı (.49), aile katılımına yönelik özyeterlik algısı (.43) ve kişisel yeterlik algısı (.50) ile istatistiksel olarak anlamlı düzeyde ilişkili olduğunu göstermiştir. Gelişimsel açıdan uygun olmayan uygulamalara yönelik inançlar ise genel öğretim yeterliđi ile istatistiksel olarak anlamlı düzeyde ilişkili çıkmıştır (-.35).

Kanonik analizi sonuçları, öğretmen inançlarına yönelik deđişkenlerinden oluşan küme (öğretime yönelik özyeterlik, aile katılımına yönelik özyeterlik, genel öğretim yeterliđi, gelişimsel olarak uygun uygulamalara yönelik inançlar, gelişimsel açıdan uygun olmayan uygulamalara yönelik inançlar) ile öğretmen-çocuk etkileşiminin boyutlarından oluşan küme (duygusal destek, sınıf organizasyonu, öğretim desteđi) arasındaki ilişkinin istatistiksel olarak önemli olmadığını ortaya koymuştur. Ancak, ilk kanonik deđişken çifti arasındaki korelasyonun (.39, $\chi^2(15) = 11.77$, $p = .70$) ortak %15'lik varyansı açıklaması anlamlı bir bulgu olarak yorumlanmıştır. Bu ilişkiye ait kanonik yükler göz önünde bulundurulduğunda, öğretmenlerin özyeterlik algısı ve genel öğretim yeterlik algısı düşükçe ve gelişimsel olarak uygun uygulamalara yönelik destekleri azaldıkça,

öğretmen-çocuk etkileşiminin niteliğinin duygusal destek, sınıf organizasyonu ve öğretim desteği boyutlarında azalmakta olduğu sonucuna ulaşılmıştır.

Yol analizi sonuçlarına göre, öğretime yönelik özyeterlik algısı gelişimsel olarak uygun uygulamalara yönelik inançları ve genel öğretim yeterlik algısı ise gelişimsel olarak uygun olmayan uygulamalara yönelik inançları önemli ölçüde yordamaktadır. Okul öncesi öğretmenlerinin özyeterlik ve genel öğretim yeterliği algısı bu örnekleme gelişimsel olarak uygun uygulamalara yönelik inançlardaki varyansın %26'sını ve gelişimsel açıdan uygun olmayan uygulamalardaki varyansın %14'ünü açıklamıştır. Bu bulgulara göre, okul öncesi öğretmenlerinin öğretime yönelik özyeterlik düzeyleri arttıkça gelişimsel olarak uygun uygulamalara katılım oranları artmakta ve öğretmenlerin genel öğretim yeterliği düzeyleri arttıkça gelişimsel açıdan uygun olmayan uygulamalara yönelik katılımları azalmaktadır. Öğretmenlerin özyeterlik ve genel öğretim yeterliği algılarının öğretmen-çocuk etkileşiminin niteliği üzerinde anlamlı ve dolaylı bir etkiye sahip olmadığı görülmüştür. Bu örneklem için öğretmen yeterlik algıları duygusal destek boyutunda %2'lik, sınıf organizasyonu boyutunda %1'lik ve öğretim desteği boyutunda %2'lik bir varyans açıklamıştır. Öğretmenlerin gelişimsel olarak uygun olan ve uygun olmayan uygulamalara yönelik inançlarının sınıf organizasyonu ve duygusal destek boyutlarında öğretmen-çocuk etkileşiminin niteliği üzerinde önemli bir etkisinin olmadığı bulunmuştur. Ancak, okul öncesi öğretmenlerinin gelişimsel olarak uygun uygulamalara yönelik inançlarının öğretim desteği boyutunda öğrenci-çocuk etkileşiminin niteliği üzerinde istatistiksel olarak önemli ve doğrudan bir etkisinin olduğu dikkat çekmiştir. Öğretmenlerin gelişimsel olarak uygun olan ve uygun olmayan uygulamalara yönelik inançları öğretim desteği boyutunda sınıf kalitesindeki varyansın %9'unu açıklamıştır. Bu bulguya dayanarak çok büyük bir etki büyüklüğüne sahip olmasa bile, okul öncesi öğretmenlerinin gelişimsel olarak uygun uygulamalara katılım düzeyi arttıkça sınıflarındaki gözlemlenen kalite düzeyinin öğretim desteği boyutunda istatistiksel olarak önemli düzeyde arttığı söylenebilir.

Çalışmanın nitel bulgularına göre sınıflarındaki performansı yüksek ve düşük olarak gözlemlenen öğretmenlerin okul öncesi eğitime dair görüşlerinin bazı konularda benzer, bazı konularda ise farklı olduğu görülmüştür. Çalışmaya katılan dört öğretmen benzer şekilde okul öncesi eğitimde çocuk merkezli eğitimin önemine dikkat çekmiştir. Özellikle, öğretmenler okul öncesi eğitimin çocukların sosyal duygusal gelişimindeki rolüne değinmişlerdir. Ancak çocukların nasıl daha iyi öğrendikleri ve okul öncesi eğitimin öncelikli hedefleri konularında daha etkili ve daha etkisiz öğretmenlerin inançlarının birbirlerinden bir ölçüde farklılaştığı saptanmıştır. Bu çalışmada daha etkili oldukları gözlemlenen öğretmenler çocukların kendi kendilerine bilgiyi yapılandırabilecekleri yaklaşımına kuşku ile yaklaşırken, daha az etkili oldukları gözlemlenen öğretmenler kendi kendine öğrenme fırsatı sunan serbest oyun zamanlarının okul öncesi eğitimdeki önemini vurgulamışlardır. Okul öncesi eğitimin amaçlarından bahsederken daha az etkili öğretmenler çocukların mutlu olmalarının ve iyi bireyler olarak yetişmelerinin önemini vurgularken, daha etkili olduğu gözlemlenen öğretmenler daha çok çocuklarda bir fark yaratmaya hedefleyen müdahaleci olarak tanımlanabilecek bir yaklaşımı eğitim felsefelerinde ön plana çıkarmışlardır.

İstendik inançlara daha ileri düzeyde sahip olan okul öncesi öğretmenleri (daha yüksek seviyede yeterlik algısına sahip olmak ve gelişimsel olarak uygun uygulamaları daha güçlü düzeyde desteklemek) ile istendik inançlara daha düşük düzeyde sahip olan okul öncesi öğretmenlerinin (daha düşük düzeyde yeterlik algısına sahip olmak ve gelişimsel olarak uygun uygulamaları daha az desteklemek) sınıf uygulamalarının nitel analizi de bu öğretmenler arasında bazı benzerlik ve farklılıkların olduğunu göstermiştir. Bu çalışmaya katılan istendik inançlara daha yüksek ve düşük seviyede sahip olan dört öğretmenin sınıflarında benzer şekilde etkili olmayan bazı uygulamalar gözlenmiştir. Değişen derecede olsa da, eğitime ve yeterliklerine dair inançları fark etmeksizin öğretmenlerin zamanı bazen verimsiz kullandıkları, çocukların ileri düşünme becerilerini sınırlı düzeyde destekledikleri, çocukların öğrenmesini desteleyecek nitelikte değil de daha çok övgü şeklinde geri bildirim sağladıkları, çocuklara zaman zaman bağırdıkları ve bilginin doğrudan aktarıldığı akademik odaklı etkinlikler yaptıkları tespit edilmiştir. Bu

örnekleme öğretmenler arasında gözlemlenen tek fark ise, istedik inançlara daha ileri düzeyde sahip olan okul öncesi öğretmenlerinin istedik inançlara daha düşük düzeyde sahip olan öğretmenlere göre çocuklarla ilişkisinin daha olumlu olmasıdır. Kendilerini daha yeterli gören ve gelişimsel olarak uygun uygulamaları daha güçlü destekleyen öğretmenlerin diğer öğretmenlere kıyasla sınıflarında çocuklara daha sıcak davrandıkları ve onlarla etkileşimlerinde daha istekli oldukları gözlenmiştir.

Öğretmen görüşmelerinden edinilen nitel bulgular aynı zamanda okul öncesi eğitimde öğretmenlerin uygulamalarının kalitesini etkileyen bazı faktörlere de işaret etmiştir. Bu çalışmaya katılan öğretmenler, ailelerden, öğretmenlerden ve çalışma koşullarından kaynaklı bazı etmenlerin okul öncesi eğitimi olumsuz yönde etkilediğini belirtmişlerdir. Ailelerin okul öncesi eğitime yönelik yanlış kanılara sahip olmaları öğretmenlerin şikâyet ettikleri konulardan birisini oluşturmaktadır. Öğretmenler, bazı ailelerin okul öncesi eğitimi sadece bakım odaklı değerlendirdiklerine, bazılarının ise akademik odaklı bir eğitim beklentisi içerisinde olduklarına dikkat çekmişlerdir. Öğretmenlere göre ailelerin memnuniyet düzeyinin artırılması için yapılması bazı uygulamalar da okul öncesi eğitimde kalite için bir tehdit oluşturmaktadır. Katılımcı öğretmenler öğretmen kaynaklı etmenler arasında öğretmen yetersizliklerinden bahsetmişlerdir. Özellikle bu bağlamda, öğretmenler çocukların yaratıcılıklarını ve ileri düşünme becerilerini geliştirecek etkinlikler yerine bir ürün ortaya çıkartmaya yönelik etkinliklere yoğunlaşmaları nedeniyle meslektaşlarını eleştirmişlerdir. Dahası, yetişen öğretmenlerin de çocuk merkezli yaklaşımı uygulayamama ve öğretmenlik mesleğine bağlı olmama gibi bazı konularda yetersiz olduklarına dikkat çekmişlerdir. Çalışma koşullarına dair, mevcut sınıf ortamı, büyüklüğü ve mevcudunun öğretmenlerin sınıf uygulamalarını olumsuz yönde etkilediği katılımcı öğretmenler tarafından dile getirilmiştir. Okul öncesi öğretmenlerinin ağır çalışma koşulları da nitelikli okul öncesi eğitim için bir diğer engel olarak görüşmelerde ortaya çıkmıştır. Bu kapsamda okul öncesi öğretmenleri, mola almadan ve sınıflarda çocuklara karşı tek sorumlu olarak çalışmanın onlar için oldukça yorucu olduğundan yakınmışlardır.

Tartışma ve Sonuç

Bulgular, gözlemlenen 47 sınıfta öğretmen-çocuk etkileşim niteliğinin genel olarak orta aralıkta olduğunu ortaya koymuştur. Önceki bazı çalışmalar benzer şekilde okul öncesi eğitim programlarının niteliğinin orta seviyede olduğunu göstermiştir (örn., Helburn ve Howes, 1996; Herrera ve diğerleri, 2005; Peisner-Feinberg ve diğerleri, 2001; Tayler ve diğerleri, 2013). Bu örnekte öğrenci-çocuk etkileşiminin üç boyutunda da yüksek niteliğe sahip bir sınıf bulunamamış olması alan yazındaki bazı çalışmalarla örtüşmektedir (örn., Pessanha, Aguiar ve Bairrao, 2007; Vermeer ve diğerleri, 2008). Çalışma bulguları sınıflardaki öğretmen-çocuk etkileşiminin niteliğinin öğretim desteği boyutunda en kötü ve en düşük düzeyde olduğunu ortaya koymuştur. Alan yazında çocukların bilişsel gelişiminin okul öncesi eğitim programlarında yalnızca minimum düzeyde desteklendiği pek çok çalışmada gösterilmiştir (örn., Chen ve de Groot, 2014, Denny, Hallam ve Homer, 2012; Doherty, Forer, Lero, Goelman ve LaGrange, 2006; La Paro ve diğerleri, 2009; Sandstrom, 2012; Tayler ve diğerleri, 2013). Bu çalışmadaki gözlem verilerinin nitel analizi de okul öncesi eğitim sınıflarındaki uygulamalarda bazı sorunlar olduğunu konusunda nicel analizleri desteklemiştir.

Bu bulgular, özellikle Ankara'daki devlet anaokulları bağlamında sınıfların niteliğinin geliştirilmesine yönelik dikkate değer bir ihtiyacın olduğunu ortaya koymaktadır. Sınıflardaki öğretmen-çocuk etkileşiminin niteliği ile çocukların kazanımları arasındaki ilişkiyi ortaya koyan çalışmalar ışığında (örn., Curby ve diğerleri, 2009; Downer ve diğerleri, 2012; Hamre, Hatfield, Pianta ve Jamil, 2014; Mashburn ve diğerleri, 2008; Rimm-Kaufman, Curby, Grimm, Nathanson ve Brock, 2009), okul öncesi eğitim sınıflarında öğretmen-çocuk etkileşiminin niteliğini artırmak için adımların atılması büyük önem taşımaktadır. Aksi takdirde, erken çocukluk eğitiminin sıklıkla bahsedilen faydalarının ortaya çıkması mümkün olmayacaktır. Birçok çalışma, özellikle yoksun ev koşullarına sahip çocukların sağlıklı gelişimi için kaliteli okul öncesi eğitim sınıflarının önemini vurgulamıştır (örn., Connor, Son, Hindman ve Morrison, 2005; Dearing, McCartney ve Taylor, 2009; McCartney, Dearing, Taylor ve Bub, 2007; Nye,

Konstantopoulos ve Hedges, 2004; Vandell, 2004). Türkiye’de dezavantajlı ailelerden gelen çocukların daha çok devlet anaokullarına devam ettiği göz önüne alındığında, yüksek nitelikli sınıflara en çok ihtiyaç duyan çocukların gelişiminin daha büyük bir risk altında olduğu söylenebilir. Zira bu çocuklar için ev ortamlarında karşılaştıkları sınırlamaların üstesinden gelebilmeleri için devlet okulları tek fırsatları olabilir. Bu çalışmadaki nitel analiz bulgularına dayanarak, sınıflardaki düşük nitelik ailelerin okul öncesi eğitime dair görüşleri, öğretmen yeterlikleri ve çalışma koşulları ile açıklanabilir. O halde, ailelerin okul öncesi eğitimin önemi ve rolü hakkında bilinçlendirilmeleri, hizmet içi eğitimlerde ve öğretmen yetiştirme programlarında nitelikli öğretmen-çocuk etkileşiminin nasıl sağlanacağına odaklanılması ve sınıf ortamı ve çalışma koşullarının yeniden düzenlenmesi okul öncesi eğitimde niteliğin iyileşmesine katkı sağlayabilir. Öncelikli olarak öğretim desteği ve duygusal destek boyutlarında öğretmen-çocuk etkileşiminin niteliğin iyileştirilmesine yönelik olarak çaba sarf edilmesi önerilmektedir. Hamre ve arkadaşları (2012), CLASS üzerine yapılandırılmış bir dersin, öğretmen-çocuk etkileşimi açısından katılımcı öğretmenlerin bilgi, inanç ve becerilerini olumlu yönde etkilediğini ve bu çocukların dil becerilerinin geliştirilmesine katkı sağladığını göstermiştir. Türkiye’de de hem öğretmenlere hem öğretmenlere adaylarına yönelik olarak etkili öğretmen-çocuk etkileşimi üzerine bir ders geliştirilebilir.

Bu çalışmada, önceki bazı çalışmalarda olduğu gibi (örn., Cobanoğlu ve Capa-Aydın, 2015; Gömleksiz ve Serhatlıoğlu, 2013; Kotaman, 2010; Sarı, Çeliköz ve Seçer, 2009; Şenol ve Ergün, 2015) okul öncesi öğretmenlerinin özyeterlikleri hakkında olumlu bir algıya sahip oldukları saptanmıştır. Katılımcı öğretmenlerin genel öğretim yeterliğine yönelik algıları, genel olarak olumlu olmakla birlikte kişisel yeterlik algılarından istatistiksel olarak anlamlı düzeyde düşük seviyede bulunmuştur. Bu bulgu göz önünde bulundurularak, öğretmenlerin inanç sisteminde özellikle öğretmenliğin olumsuz ev ortamlarından gelseler bile öğrenciler üzerinde bir etki yaratabileceğine dair inançların güçlendirilmesi gerekli görülmektedir. Katılımcı okul öncesi öğretmenlerinin gelişimsel olarak uygun uygulamaları daha güçlü destekliyor olması da alan yazın ile örtüşmektedir (örn., Demircan ve Tantekin Erden, 2015; Erdiller ve McMullen, 2003; McMullen ve

diğerleri, 2005). Nitel araştırma verileri de çocuk merkezli eğitim, eğitim süreçlerinde esneklik ve aile katılımı gibi konularda okul öncesi öğretmenlerinin görüşlerinin gelişimsel olarak uygun uygulamalar yaklaşımına yakın olduğunu ortaya koymuştur. Ne var ki, okul öncesi öğretmenlerinin gelişimsel olarak uygun uygulamaları destekliyor olmaları onların gelişimsel olarak uygun olmayan uygulamaları benimsemediği anlamını taşımamaktadır. Nitekim Demircan ve Tantekin Erden (2015) tarafından da belirtildiği gibi, bu çalışmada okul öncesi öğretmenlerinin gelişimsel açıdan uygun olmayan uygulamaları tamamıyla reddetmedikleri görülmüştür. Nitel araştırma bulguları da öğretmenlerin okul öncesi eğitimin hedefleri ve çocukların öğrenme biçimi hakkında gelişimsel açıdan bazı uygun olmayan görüşlere sahip olduklarına işaret etmiştir. Örneğin, okul öncesi eğitimde çocukların sosyal-duygusal gelişimine odaklanılması gerektiğine dair görüşler okul öncesi eğitimde çocukların tüm alanlardaki gelişimin desteklenmesi gerektiği ilkesi (European Commission, 2014; NAEYC, 2008) ile ters düşmektedir. Çocukların kendi kendilerine serbest oyun zamanlarında en iyi öğrendiği görüşü, okul öncesi eğitimde serbest oyun zamanı ile öğretmen tarafından yönetilen etkinlikler arasında bir denge olması (Siraj- Blatchford, Taggart, Sylva, Sammons ve Melhuish, 2008) ve öğrenme sürecinde öğretmenlerin çocuklara kılavuzluk etmesi (Zuniga ve Howes, 2009) gerektiği ilkeleri ile tezat düşmektedir.

Öğretmen inançlarını değiştirmesi güç olsa bile, öğretmen kararlarını ve davranışlarını olumsuz yönde etkileyebilecek (Pajares, 1992) bu istenmeyen inançların öğretmen yetiştirme programlarında ve hizmet içi eğitimlerde sorgulanması okul öncesi eğitimde kalitenin iyileştirilmesi için önemli görülmektedir. Bu çalışmada gelişimsel olarak uygun olan inançlar ile uygun olmayan inançlar ve öğretmen özyeterliliği ile genel öğretim yeterliliği birbirinden bağımsız yapılar olarak ortaya çıktığı için, öğretmen inançlarına yönelik planlanan müdahalelerde öğretmen inançlarının farklı boyutlarının ayrı ayrı ele alınmasının daha etkili olacağı düşünülmektedir. Özellikle öğretmen ve öğretmen adaylarının okul öncesi eğitimde çocukların zihinsel ve dil gelişiminin desteklenmesine ve öğretmenlerin öğrenme sürecinde çocuklara sağlayacakları kılavuzluk rollerine dair uygun görüşler oluşturmaları onların sınıflarda daha etkin olmalarına katkı sağlayabilir.

Guskey'in (2002) sunduğu model çerçevesinde değişim için ikna olmaları için okul öncesi öğretmenlerine uygunsuz inançlarının öğrencilerinin öğrenmesini nasıl engellediği ve istendik inançlarının öğrencilerinin gelişimine nasıl katkıda bulunduğu gerçek sınıf ortamında gösterilmelidir. Ayrıca, Wheatley'in (2002) belirttiği gibi, okul öncesi öğretmenlerinin özyeterliklerine şüpheyle yaklaşmalarını sağlamak onların kendilerini geliştirmeye yönelik bir ihtiyaç duymalarını için kritik öneme sahip olabilir.

Çalışmanın nicel bulguları genel olarak okul öncesi öğretmenlerinin yeterlik algılarının ve gelişimsel açıdan uygun olan ve uygun olmayan uygulamalara yönelik inançlarının sınıflarda gözlemlenen öğretmen-çocuk etkileşiminin niteliği üzerinde büyük bir etkisi olmadığını göstermiştir. Ayrıca, nitel bulgular da istendik yönde inançlara sahip olan ve olmayan okul öncesi öğretmenlerinin sınıf uygulamalarının bazı yönlerden birbirine benzer olduğuna dikkat çekmiştir. Bu bulgulardan yola çıkılarak, bazı önceki çalışmalarda olduğu gibi (örn., Hegde ve Cassidy, 2009; McMullen ve diğerleri, 2006; Vartuli, 1999) okul öncesi öğretmenlerinin inançlarının onların sınıf uygulamalarından daha uygun olduğu sonucuna ulaşılmıştır. Bu bulgular şaşırtıcı bulunmamıştır zira alan yazında okul öncesi öğretmenlerinin eğitime dair inançları ile sınıf uygulamaları arasında önemli fark olduğunu dair çalışmalara rastlanmaktadır (örn., Blay ve Ireson, 2009; Cheung, 2012; Gilbert, 2009; Kim, Kim ve Maslak, 2005; Wen, Elicker ve McMullen, 2011; Wilcox-Herzog, 2002). Öğretmenlerin özyeterlik algılarının onları sınıflarında daha etkin yapmadığına dair kanıtlar da literatürde mevcuttur (örn., Engstrand ve Roll-Pettersson, 2014; Guo, Dynia, Pelatti ve Justice, 2014).

Öğretmen inançları ile öğretmen-çocuk etkileşimi arasında güçlü bir etkileşimin olmaması öğretmen inançlarının tamamıyla önemsiz olduğu şeklinde yorumlanmamalıdır. Örneğin, göreceli olarak az bir varyans açıklamış olsa bile, yol analizi bulgularına göre okul öncesi öğretmenlerin gelişimsel olarak uygun uygulamalara yönelik destekleri arttıkça sınıflarında çocuklara sağladıkları öğretim desteğinin de kalitesi artmaktadır. Bu bulgu bir açıdan, gelişimsel olarak uygun uygulamalar yaklaşımının okul öncesi eğitimde kalite ölçütlerinden birisi olduğunu (Lee ve Walsh,

2004) doğrulamaktadır. Nitel analizler de öğretmen inançlarının öğretmenler üzerindeki etkili olabileceğine dair bazı kanıtlar sunmuştur. Örneğin, sınıflarında daha az etkili olduğu gözlemlenen okul öncesi öğretmenleri daha etkili bulunan öğretmenlerden farklı olarak belki de çocukların kendi kendilerine öğrenmesini önemli buldukları için onların öğrenme süreçlerine daha az müdahalede bulunmuş olabilirler. Bu öğretmenlerin okul öncesi eğitimde özellikle çocukların mutlu olmalarını ve iyi bireyler olarak yetişmelerini önemsedikleri için bilinçli olarak bu çalışmada ölçüldüğü şekliyle öğretim desteği sağlamamış oldukları söylenebilir. Kowalski ve arkadaşlarının (2001) belirttiği gibi, okul öncesi eğitimde çocukların sosyal-duygusal gelişimine odaklanmak zihinsel ve dil gelişimini destekleyecek fırsatlardan onların yoksun bırakılmalarına neden olmuş olabilir. Ayrıca, nitel analizler sonucunda istedik inançlara daha güçlü düzeyde sahip olan okul öncesi öğretmenlerinin böyle olmayan öğretmenlere göre çocuklarla etkileşimlerinde daha arzulu oldukları gözlenmiştir. Bu farklılık öğretmenlerin inançları ile açıklanabilir. Zira öğretmen özyeterlik algıları öğretmen isteğini (Tschannen-Moran ve Hoy, 2001), öğretmenlik mesleğine bağlılığı (Coladarcı, 1992), öğretmen duygusal tükenmişliğini (Coladarcı, 1992) ve öğretmenliğe karşı duyulan sevgiyi (Guskey, 1988) etkilemiş olabilir. Daha istedik inançlara sahip olan öğretmenlerin çocuklarla daha sıcak bir ilişki kurmuş olmalarının nedeni gelişimsel olarak uygun yaklaşıma karşı desteğin duygusal destek boyutunda sınıf kalitesi ile ilişki olması olabilir (Zinser ve diğerleri, 2014).

Sonuç olarak, bu çalışmanın bulgularına göre öğretmen inançlarının okul öncesi eğitimde niteliği garantilemediği ancak sınıf uygulamaları üzerinde tamamıyla da etkisiz olmadığı söylenebilir. Öğretmenlerin sınıf ortamındaki davranışlarını onların zihinsel süreçleri dışında etkileyen birçok farklı sebep olduğu (Shavelson ve Stern, 1981) göz önünde bulundurulduğunda bu sonuç şaşırtıcı bulunmamıştır. Öğretmen inançları ile uygulamaları arasındaki fark, fiziksel çevreden ya da okul yönetimi, toplum ve eğitim programları gibi bazı dış etkilere otürü ortaya çıkabilir (Clark ve Peterson, 1984). Okul öncesi eğitimde öğretmen inançları ile sınıf uygulamaları arasındaki farkın nedeni okul müdürleri, aileler, yönetmelikler, çocuklar ve öğretmenlerin kendileri olabilir (Wilcox-Herzog, 2002). Bu çalışmada öğretmenler tarafından okul öncesi eğitimde uygulamaları

olumsuz etkilediđi öne sürülen ailelerden, öğretmenlerden ve çalışma koşullarından kaynaklı etmenler öğretmen inançları ile sınıf uygulamaları arasında güçlü bir etkileşim bulunamamış olmasını açıklayabilir.

Bu çalışma bazı sınırlılıklara sahiptir. Örnekleme, Ankara'daki bağımsız devlet anaokullarından seçilmiş sınıflarda görev yapan öğretmenlerle sınırlandırılmıştır. Sonraki çalışmalarda devlet okullarında ilköğretime bağlı anasınıflarında ve özel okullarda görev yapan okul öncesi öğretmenlerine ulaşılması ve daha çok sayıda sınıfın gözlemlenebileceđi büyük ölçekli çalışmaların daha genellenebilir sonuçların elde edilmesi bakımından önemli görölmektedir. Bu çalışmada uygulanabilirlik nedeniyle öğretmenler sadece bir kez gözlemlenmiştir. Gelecek çalışmalarda öğretmenlerin farklı günlerde birkaç kez gözlemlenmesi sınıfların niteliđine dair daha geçerli bulguların elde edilmesine katkı sağlayacaktır. Ayrıca, okul öncesi eğitimde nitelik belirlenirken öğretmen-çocuk etkileşimine odaklanılmış ve modernist bir yaklaşımla ölçümlerde CLASS kullanılmıştır. Eğitimde kaliteyi tanımlayan pek çok ölçüt olduđu göz önüne alındığında gelecekteki çalışmalarda okul öncesi eğitimin niteliđi farklı boyutlarıyla da araştırılmalıdır. Özellikle, postmodernist yaklaşımlar benimsenerek farklı paydaşların (örn., çocuk, öğretmen, aile, eğitimde politika belirleyiciler) okul öncesi eğitimin niteliđine yönelik görüşleri incelenebilir. Aynı sınıfa devam eden her bir çocuk için öğretmenlerin eşit düzeyde etkin olduđunu varsaymak yanıltıcı olabilir (Hallam, Fouts, Bargreen ve Caudle, 2009; Jeon ve diđerleri, 2010). Bu nedenle, gelecek çalışmalarda çocukların bireysel olarak sınıflarda neler deneyimlediklerine odaklanılabilir.

APPENDIX I: CURRICULUM VITAE

RAHİME ÇOBANOĞLU

EDUCATION

MS: Curriculum and Instruction, Middle East Technical University, Ankara, Turkey (2008-2011)

Thesis: Teacher self-efficacy and teaching beliefs as predictors of curriculum implementation in early childhood education

BS-Major: Early Childhood Education, Middle East Technical University, Ankara, Turkey (2003-2008)

(Second best ranked student at Middle East Technical University, First ranked student at the Faculty of Education and at the Department of Elementary Education at Middle East Technical University)

BS-Minor: Psychology, Middle East Technical University, Ankara, Turkey (2005-2008)

INTERNATIONAL EDUCATIONAL EXPERIENCE

Visiting Scholar, Indiana University, Bloomington, Indiana, the USA (2014 August-2015 July)

Erasmus Student, Utrecht University, Utrecht, the Netherlands (2010 February-2010 June)

WORK EXPERIENCE

Research Assistant, Department of Educational Sciences, Middle East Technical University, Ankara, Turkey (2009-present)

RESEARCH INTERESTS

Early Childhood Education, Teacher Effectiveness, Teacher Thinking, Teacher Beliefs, Curriculum Implementation

SELECTED WORK

Cobanoglu, R. (2015). A review on research in Turkey on beliefs about teaching. *Hacettepe University Journal of Education*, 30(3), 48-59.

Cobanoglu, R., & Capa Aydin, Y. (2015). When early childhood teachers close the door: Fidelity to a mandated curriculum and teacher beliefs. *Early Childhood Research Quarterly*, 33, 77-86.

Cobanoglu, R., & Engin Demir, C. (2014). The visible side of the hidden curriculum in schools. *Elementary Education Online*, 13(3), 776-786.

Cobanoglu, R., & Capa-Aydin, Y. (2013, April). *Exploring the beliefs of pre-service teachers about teaching: A navigator or a mincing machine?* Paper presented at American Educational Research Association, San Francisco, USA.

Cobanoglu, R., & Capa-Aydin, Y. (2013, August). *Student evaluation of teaching: Perceptions of college students.* Paper presented at the 15th Biennial Conference of European Association for Research in Learning and Instruction (EARLI), Munich, German.

APPENDIX J: TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü	<input type="checkbox"/>
Sosyal Bilimler Enstitüsü	<input checked="" type="checkbox"/>
Uygulamalı Matematik Enstitüsü	<input type="checkbox"/>
Enformatik Enstitüsü	<input type="checkbox"/>
Deniz Bilimleri Enstitüsü	<input type="checkbox"/>

YAZARIN

Soyadı : Çobanoğlu

Adı : Rahime

Bölümü : Eğitim Bilimleri Bölümü, Eğitim Programları ve Öğretim

TEZİN ADI (İngilizce) : A Mixed Methods Study of Teacher-Child Interaction Quality and Teacher Beliefs in Early Childhood Education

TEZİN TÜRÜ : Yüksek Lisans Doktora

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir.
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir.
3. Tezimden bir (1) yıl süreyle fotokopi alınamaz.

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: