TEACHER SELF-EFFICACY AND TEACHING BELIEFS AS PREDICTORS OF CURRICULUM IMPLEMENTATION IN EARLY CHILDHOOD EDUCATION

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Approval of the Graduate School of Social Sciences

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ABSTRACT

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The aim of this investigation was to predict the extent of curriculum implementation in early childhood education from several variables defined as (1) school related factors, (2) teacher demographics, (3) teaching beliefs, and (4) teacher self-efficacy beliefs. A total of 308 early childhood teachers employed in public schools in the central districts of Ankara, Turkey, selected through cluster sampling, composed the sample of this study. Data were collected with the instrument including Curriculum Implementation Scale, Turkish Version of the Teachers' Sense of Efficacy Scale, Teacher Beliefs Survey, and Personal Information Form. Exploratory and confirmatory factor analyses were conducted to provide evidence for validity and reliability of the scales. Two separate hierarchical multiple regression analyses were, moreover, employed at the alpha level of .025 to answer research questions.

The results overall demonstrated that teacher self-efficacy and teaching beliefs significantly predicted the extent early childhood teachers implemented current curriculum as regards content selection and learning process, while teacher demographics were only significant for the extent of curriculum implementation regarding learning process. On the other hand, school related factors did not contribute to the extent of curriculum implementation for both content selection and learning process.

In particular, constructivist teaching beliefs and teacher efficacy beliefs for student engagement and instructional strategies explained the extent of curriculum implementation regarding content selection. Considering the implementation of learning process, teachers' years of experience was, moreover, found to be a significant predictor along with constructivist teaching beliefs and teacher efficacy beliefs for student engagement and instructional strategies.

Keywords: Early Childhood Education, Curriculum Implementation, Teacher Self-Efficacy Beliefs, Teaching Beliefs, Constructivist Teaching Beliefs

ÖZ

OKUL ÖNCESİ EĞİTİMDE
EĞİTİM PROGRAMI UYGULAMASININ YORDAYICILARI OLARAK
ÖĞRETMEN ÖZYETERLİK VE ÖĞRETMENLİK İNANÇLARI

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Bu çalışmada, (1) okulla ilişkili etmenler, (2) öğretmen demografikleri, (3) öğretmenlik inançları ve (4) öğretmen özyeterlik inançları ile okul öncesi eğitimde eğitim programı uygulamasının yordanması amaçlanmıştır. Çalışmanın örneklemini Ankara'nın merkez ilçelerinden küme örneklemesi yoluyla seçilmiş ve devlet okullarında çalışan 308 okul öncesi öğretmeni oluşturmuştur. Veriler, Eğitim Programı Uygulaması Ölçeği, Öğretmen Özyeterlik Ölçeği, Öğretmen İnançları Anketi ve Kişisel Bilgi Formu'ndan oluşan veri toplama ölçeği ile toplanmıştır. Ölçeklerin geçerlik ve güvenilirlik çalışması açıklayıcı ve doğrulayıcı faktör analizleri ile yapılmıştır. Araştırma soruları ise alfa değerinin .025 olarak belirlendiği iki ayrı hiyerarşik regresyon analizi kullanılarak cevaplandırılmıştır.

Genel olarak araştırma bulguları, öğretmen özyeterlik ve öğretmenlik inançlarının okul öncesi öğretmenlerinin eğitim programı uygulamasını hem içerik seçimi hem de öğrenme süreci bakımından anlamlı derecede yordadığını ve öğretmen demografiklerinin ise sadece öğrenme sürecinin uygulanmasına anlamlı bir katkı sağladığını ortaya koymuştur. Ayrıca, okulla ilişkili etmenlerin eğitim programının uygulanması üzerinde önemli bir etkisinin olmadığı tespit edilmiştir.

Okul öncesi eğitim programının içerik seçimi açısından uygulanmasını önemli ölçüde etkileyen değişkenler, oluşturmacı öğretmenlik inançları ile öğrenci katılımına ve öğretim stratejilerine yönelik öğretmen özyeterlik inançları olarak belirlenmiştir. Öğrenme sürecinin uygulanması için ise, oluşturmacı öğretmenlik inançlarının ve öğrenci katılımına ve öğretim stratejilerine yönelik öğretmen özyeterlik inançlarının yanı sıra öğretmenlik tecrübesinin de önemli bir yordayıcı olduğu ortaya konmuştur.

Anahtar Kelimeler: Okul Öncesi Eğitim, Eğitim Programı Uygulaması, Öğretmen Özyeterlik İnançları, Öğretmenlik İnançları, Oluşturmacı Öğretmenlik İnançları

To Annecik and Babacık,
who make the life better for me

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CHAPTER I

INTRODUCTION

The purpose of this introductory chapter which is divided into four sections is to lay foundation for the topic of interest. The first section provides chief information as regards the influence of teachers on educational change, while the second section describes the purpose of this investigation with reference to research questions. In addition, the third section outlines the significance of the study for both literature and educational practice. Finally, the fourth section presents operational definitions of several key variables of current investigation.

1.1. Background of the Study

Current society has dramatically changed its clothing while undergoing a transformation from industrial age to information age. Correspondingly, the most salient objectives to describe today's world have been flexible, vulnerable, diverse, global, and interconnected (Hargreaves & Shirley, 2009). Twenty-first century indeed has been the era, more but not less, yearning for the individuals who can learn "to know, to do, to live together and to be" (Delors et al., 1996, p.35). Consistently, the present role of the citizens in knowledge society has chiefly been identified as to be creative, innovative, flexible, problem solver, team worker, community builder, and democratic (Hargreaves, 2009).

Encountered with such emerging societal demands, individuals primarily seek for the help of education which is viewed to be the only social institution to contribute to their coping ability with change (Stager & Fullan, 1992). It seems to be predominantly because of the fact that educators and schools as a natural part of their profession considerably gain expertise to deal with the change, for they are morally aimed at making difference in the lives of students, requiring continuous improvement and renewal (Fullan, 1985; Stager & Fullan, 1992). That is, change is

per se the way of life in the field of education. Given that change is a natural character of educational process, the more critical task then becomes to determine its direction. Obviously, not all educational reforms would be meaningful in terms of their consequences.

Hargreaves and Fink (2000) contend that all-important feature for a successful educational reform is to (1) beget in-depth and significant student learning, (2) have an enduring impact over a long period of time, and (3) extend its impact to other settings and conditions. Accordingly, a successful educational change "is a Picasso, not a Rembrandt. It approaches change not from one or two dimensions, but like a cubist painter, from all three" (Hargreaves & Fink, 2000, p. 30).

Moreover, Fullan (2007, p. 30) in his multidimensional model of innovation defines three major components of educational change for the implementation of any policy or program like the following: (1) change of materials (resources or technologies), (2) change of teaching approaches (strategies, methods, or activities), and (3) change of beliefs (pedagogical assumptions or educational theories). A curriculum design with its four basic components defined as objectives, content, instructional strategies-resources, and evaluation means (Ornstein & Hunkins, 2004, p. 236) can obviously act as an ideal vehicle to contribute to the change process described above since change in the materials, teaching approaches, and beliefs is simply the change of a curriculum. Consequently, it is not anymore hard to comprehend why changing the curriculum has been the most frequently applied medium to achieve educational change and so improvement (Montero-Sieburth, 1992).

Nevertheless, in spite of intense efforts and great investments for the development of various educational programs, the experience of years unfortunately reveals that curriculum change has made no or only a little difference in classroom settings (Curtner-Smith, 1999; Fullan, 1995; Gordon & Patterson, 2008; Herron, 1971). What was observed with the innovations was classically that proposed changes were rarely implemented as intended or even if so, they did not last long due to lack of long term

commitment of target organizations or due to non achievement of desired consequences (Waks, 2007).

When the failure of curriculum change is thoroughly investigated, Herron (1971) brought one of the key factors to the front, the *teachers*. He described the best condition for the innovation to have teachers with an adequate perception of curricular innovation and with views in agreement with it. Otherwise, teachers would be more likely to adapt the new curriculum to their existing perspectives and ideologies (Curtner-Smith, 1999). That's why, Lewin and Grabbe (1945) in their pioneer study proposed re-education for the complete change, a process, as they defined, in which individuals accept new set of values and beliefs as they transform their old cognitive structure.

Change in beliefs and values, thus, is often discussed to lay the foundation for change in behaviors because by the change "a new god is introduced who has to fight with the old god, now regarded as devil" (Lewin & Grabbe, 1945, p. 60). Therefore, also pointed by the theory competition approach, it becomes essential but not optional for both curriculum builders and implementers to address and challenge each other's beliefs and values in change situations in order to develop a shared motivation for the intended innovations (Timperley & Parr, 2005).

Eventually, there is obviously a pressing need to pay attention to a number of teacher characteristics in any educational innovation including curricular change as teachers are likely to determine their destiny (Synder, Bolin, & Zumwalt, 1992). For the success of educational innovations, it then seems that it is particularly vital to deal with what teachers think and do (Fullan, 1991), which essentially makes up the core of this study.

1.2. Purpose of the Study

There has been a top-down curriculum innovation in early childhood education in 2006 in Turkey. The new centralized early childhood curriculum is stated to be essentially grounded on the principles of constructivism, characterized by child-centered approach (Ministry of National Education [MoNE], 2006). Five years have already passed away its implementation phase. It is now of high interest of educational research to explore what has indeed changed in early childhood learning environments as a result of this curriculum innovation.

This study was, consequently, intended to describe to what extent early childhood teachers today fulfill their intended roles as constructivist teachers in their classes. Moreover, going one step further, it strived for finding out the factors which are likely to influence the extent early childhood teachers implement basic principles and activities which are proposed by MoNE in the program booklet. The aim of current study can then be stated to predominantly delve into the practices of early childhood teachers particularly in the light of their teaching and self-efficacy beliefs and several other characteristics identified in the literature to be influential on teacher practices as teacher demographics like teachers' years of experience and teachers' degree of education and also some school related factors like class size, age of the students, length of the program, type of the school, and existence (nonexistence) of a teacher aide for the class.

1.3. Significance of the Study

The great bulk of educational policy and innovation many times did not get implemented as intended (Fullan, 1995). Teachers as the implementers of educational change have often been a source of blame for this consequence since they may resist changing not to risk failure (Guskey, 1986). It is, thus, worthwhile to investigate current situation in Turkey at the level of early childhood education after five years from the launch of curriculum reform.

Investigation of implementation on its own is vital to adjudge the character of change if there is any and to grasp the reasons for the failure or success of educational innovations (Fullan & Pomfret, 1977). Current literature with its stress more on elementary school curriculum appears to provide a dearth of knowledge regarding curriculum implementation in early childhood education. As a contribution to curriculum evaluation studies, this study to a certain degree endeavors to yield information as regards the level of use of current early childhood curriculum in Turkey based on teacher reports. Describing the extent that basic principles and activities of early education are practiced by the teachers as stated by MoNE, current research may, therefore, inform educational policy makers about how well experienced curriculum in the classrooms corresponds to written curriculum in the booklet.

In addition, this investigation deals with the influence of teacher beliefs on educational practices, which seems to be often neglected in educational change. Unless curriculum developers take into consideration the beliefs of teachers, it is now widely acknowledged that curriculum change is more likely to fail (Cotton, 2006; Johns, Ha, & Macfarlane, 2001). In case of Turkey, it appears that it is taken for granted that teachers would be willing and eager to apply constructivist approaches into their practices.

However, there is still likelihood that teachers have developed their own philosophies of education incongruent with that of national curriculum, which can in return stymie intended educational change. For the constructivist curriculum implementation, this threat also seems to be valid as in some studies it is argued that beliefs of the majority of the teachers are incompatible with constructivist way of learning and teaching in spite of intense advocacy of the reformers (e.g., Jambunathan, 2005; Prawat, 1992; Yang, Chang, & Hsu; 2009). The inquiry of teacher beliefs regarding traditional and constructivist ideas of education, hence, may stimulate new discussions or relieve existing ones in the unique context of Turkish

education system concerning the acceptance of constructivist methods of education by early childhood teachers.

Inspecting the role of teacher beliefs in the implementation of curricular reforms can provide a direction for teacher education programs or in-service training programs to decide upon what to do with existing teacher beliefs as well. As beliefs do not require a condition of truth but involve judgment and evaluation, different from knowledge based on objective facts (Nespor, 1985), changing teachers' belief system to change their practices then remains to be a promising idea in the field of education. Consistently, numerous researchers have already endeavored to intervene in teacher beliefs to make them aware of and reflect on them (Stuart & Thurlow, 2000; Trepanier-Street, Adler, & Taylor, 2007; Wood & Bennett, 2000).

Finally, to deal with early childhood teacher beliefs seems to be far more significant because they are detected to be studied less compared to teacher beliefs in other areas (Lee, 2006; McMullen, 2001; Rivilland, 2007). Kim and Kim (2010) recognized that self-efficacy beliefs of early childhood teachers were often excluded in teacher self-efficacy studies as the sample of those studies was more likely to involve kindergarten and upper grade level teachers.

1.4. Definitions of Key Terms

The operational definitions of several important terms for this study are outlined below:

Early childhood teacher: Teachers who educate children between the ages of 3 and 6.

Public independent preprimary school: Public and independent schools which are composed of classes of children between the ages of 3 and 6.

Public preprimary class: The classes of children of 5-6 years of age in public elementary schools.

Early childhood curriculum: The national educational program designed under the supervision of Ministry of National Education in 2006 for the education of children between 36 and 72 months old.

Teaching beliefs: The self-reported assumptions or claims of early childhood teachers indicating their agreement with the statements on the principles of constructivist and traditional view of education.

Teacher self-efficacy beliefs: The self reported views of early childhood teachers on their perceived abilities to carry out general teaching tasks in early childhood classes particularly regarding student engagement, instructional strategies, and classroom management.

Curriculum implementation: Based on the fidelity perspective, the extent of the practice of basic principles and activities proposed in the National Early Childhood Curriculum as reported by early childhood teachers.

CHAPTER II

LITERATURE REVIEW

In this chapter, the primary emphasis is on curriculum implementation and teacher beliefs. The discussion begins with examining the context of early childhood education and the latest curricular reform movement in Turkey. Then, the concept of curriculum implementation is presented, paying attention to key role of the teachers in the implementation process, perspectives used in curriculum implementation studies, and curriculum implementation studies conducted in Turkey. Finally, the chapter is ended with reviewing the nature of teacher beliefs, their relation to educational practice, and a brief summary of related literature.

2.1. A Brief Outlook on Early Childhood Education in Turkey

History of early childhood education in Turkey goes back to the Ottoman period, when children at the age of 5 and 6 were basically given a religious education in schools called *Sibyan Mektepleri* (Kapci & Guler, 1999). After the establishment of Turkish Republic, it was not until 1950s that early childhood education came into question as it is considered today, for the limited budget of young state had to be used for elementary schooling to before all else resolve high illiteracy rate prevalent in the society (Oktay, 2000).

In the years following 1960s, consistent with the global trends, a speedy increase has been experienced in the number of early childhood centers mainly owing to women's increasing participation rate in labor force in Turkey (Atay-Turhan, Koc, Isiksal, & Isiksal, 2009). The establishment of General Directorate of Preschool Education under the supervision of MoNE in 1992 is considered to be yet another historical milestone as a sign of formal recognition of the significance of early education at the state level, considered to be facilitating the improvement of early childhood education by developing policies and coordinating practices so far.

Coming back to present time, early childhood services in Turkey are currently provided by two main bodies, MoNE with a focus on early education and Social Services and Child Protection Agency (SHCEK) with an emphasis on early care. Private and public independent schools of preprimary education, private and public preprimary classes in elementary schools, and practical kindergartens and preschools of Girls' Vocational Schools are supervised by MoNE, whereas SHCEK is the responsible organization for private and public crèches and daily care centers and children's homes (Yazıcı, Yoltar, & Kılıç, 2009). Moreover, though limited in number, municipalities and several non-governmental organizations also provide early childhood education and care services presently (Yazıcı et al., 2009).

Considering educational organization in Turkey, early childhood education today constitutes the first level of education, which is optional for 36 and 72 months old children (EURYDICE, 2009). However, as a result of the pilot project implemented in 2009/10 education semester, schooling of children between 5 and 6 years old has been compulsory in selected 32 provinces in Turkey (EURYDICE, 2010).

As described in the national early childhood curriculum by MoNE (2006), the aim of early childhood education is in general to (1) prepare children for elementary education, (2) enable children to speak Turkish properly and accurately, (3) provide children with physical, cognitive, and affective development and also with good habits, and (4) provide children with such competencies as love, respect, cooperation, responsibility, tolerance, solidarity, unity, sharing, imagination, creative and critical thinking, communication, and expression of the feelings.

The field of early childhood education in Turkey is not, nonetheless, without problems currently. It can be described to be still in a developing phase in terms of both its quantity and quality. The schooling rate, which is only 22.9%, 33%, and 50% among 36-72, 48-72, and 60-72 months old children respectively by 2009, considerably falls behind the schooling rate in other OECD countries, which is almost close to 100% (Aydagül, 2009). To overcome this problem, in the national

strategic plan of education, the nationwide expansion of early childhood education up to 70% was identified as a prior goal to be achieved by 2014 (MoNE, 2010).

Moreover, in a comprehensive report titled as *Right Start: Early Childhood Education in Turkey*, Bekman and Gürlesel (2005) pointed out that accessibility of early childhood education centers more in big cities and at the west side of the country put healthy development of children particularly coming from the most disadvantaged environments at a greater risk. Their analyses fundamentally indicated such limitations of early education in Turkey as: (1) institution based model of early education as the common practice, but inadequacy of other alternative models like home-based and community-based models, (2) early childhood education services more for the purpose of preparing children for elementary education, but not for early intervention or risk elimination, (3) non-standardized practices of early childhood education centers and also non-standardized teacher qualifications working under the control of MoNE and SHCEK, (4) centralized curriculum unresponsive to the needs of children at particular regions of the country, and finally (5) school inspectors with insufficient knowledge of early childhood education.

2.2. Curriculum Reform Movement in Turkey

A nationwide elementary school curriculum reform in Turkey was initiated in 2005. The Board of Education and Discipline (2005) announced the reasons for this change like the following: (1) scientific and technological advancements, (2) recent advances in teaching and learning approaches, (3) need for the improvement of educational quality and elimination of educational inequalities, (4) need for a more sensitive education to democracy and economics, (5) need for the development of global values in students, (6) need for the establishment of program coherence across all levels and all subjects through eight year compulsory education, and (7) failure in international examinations like Programme for International Student Assessment (PISA), Trends in International Mathematics and Science Study (TIMSS), and Progress in International Reading Literacy Study (PIRLS).

The new elementary school curriculum, essentially shifting its focus from teaching to learning, primarily underwent below described changes (Aksit, 2007; Board of Education and Discipline, 2005; Koc, Isiksal, & Bulut, 2007):

1. Shift from a rigid behaviorist way of education to a constructivist way of education,
2. An enlarged focus not only on instruction but also on education,
3. Consideration of European Union and other international norms in education,
4. Identification of core competencies of education across curriculum, which are defined as the development of Turkish language skills, critical thinking skills, creative thinking skills, communication skills, problem solving skills, research skills, decision making skills, information and communication technology skills, and entrepreneurship skills,
5. Placement of sports, health, environment, guidance, career counseling, entrepreneurship, and disaster consciousness at the spine of the curriculum,
6. Increase in the number of activities while narrowing the scope of content,
7. Highlight on the development of Turkish language skills and history awareness in the students,
8. Shift from a product-oriented assessment and evaluation to a process-oriented approach,
9. Stress on the involvement of the families in the educational process of the students,
10. Promotion of learning at least one foreign language,
11. Development of enthusiasm for lifelong learning.

Corresponding to this movement, early childhood curriculum was revised in 2006 as well. Considering all curricular changes from past to present time, it can basically be argued that what has considerably changed in early childhood curriculum is simply a shift from a content-centered approach of education to a child-centered education. Güler (2001) illustrated this progress from 1978 to 1994, explaining the nature of early childhood curriculum development in Turkey. As she mentioned, it was in 1978 that development of an early childhood curriculum for the first time was

handled scientifically under a project named as *Early Childhood Child Development and Education in Turkey*, led by Boğaziçi University. This project, piloted but failing to expand in the country, was then followed by 1989 educational program, designed for 4-5 years old children. It was mainly based on units and influenced predominantly by content-centered approach of education (Güler, 2001).

When arrived to 1994, Turkey had its most comprehensive program for all ages from 0 to 6, which were 0-3 years old crèche program (*Kreş programı*), 4-5 years old preprimary school program (*Anaokulu programı)*, and 6 years old preprimary class program (*Anasınıfı programı*). However, it was highlighted that 1994 educational program was not implemented as it was planned as teachers still practiced a content-based teaching, albeit 1994 educational program was in fact child-centered, primarily because of misperception and misuse of the content list proposed in the program booklet (Güler, 2001).

Afterwards, 2002 early childhood curriculum was proclaimed as a remedy to overcome the drawbacks of previous educational programs. When the program booklets of 2002 and 2006 early childhood curriculum are in detail examined, there does not seem to exist great differences in the philosophy of education planned to be applied although the new curriculum seems to be considerably improved in terms of the objectives and behaviors to be developed in children, having a more obvious and stronger explanation for its constructivist way of education. Consistently, as perceived by early childhood teachers, compared to 2002 educational program, current curriculum is found to be more comprehensive and richer in terms of learning activities, with a stronger focus on family involvement, and more clear-cut in its articulation of the objectives (Gündoğdu, Turan, Kızıltaş, Çimen, & Kayserili, 2008).

Below are the differences captured when the program booklets of 2002 and 2006 early childhood curricula (MoNE, 2002, 2006) are contrasted:

To begin with, different from 2002 educational program, objectives for language development are in the new program separated from those for cognitive development. New objectives and competencies in this domain of development are also added to the curriculum such as expression of what is listened, reading visual materials, expression of the self, and expanding vocabulary. In addition, current curriculum emphasizes the developmental milestones of children, grouping them as 36-48, 48-60, and 60-72 months old unlike the previous one which grouped them as 36-60 and 60-72 months old. This may indicate adoption of a more sensitive approach toward developmental differences in the education of young children.

What is more is the addition of several new objectives and competencies in the area of cognitive development which require children to use higher order thinking skills such as preparing graphs and reading them, making measurement, finding relationship between parts and a whole, and developing a pattern and finding relationships in it. Furthermore, as another noteworthy distinction in the new curriculum, a separate section is devoted to elaborate on such significant and also controversial issues to enlighten teachers as quality in early childhood education, professional ethics and teacher qualifications, behavior management, child and creativity, responsibility, sensitivity for the environment, respect education for the diversity, inclusive education, learning process of the children, and arrangement of the learning environment.

Eventually, as announced by MoNE, the General Directorate of Early Childhood Education (2006), current early childhood curriculum is mainly the outcome of the feedback taken from the implementation of 2002 educational program, analyses of scientific and technologic advancements, and early childhood education practices in other European countries. Designed for 36-72 months old children, the new curriculum, excluding any units or content to be taught, is principally introduced to be flexible and child-centered, aiming at the actualization of the objectives and competencies chiefly through problem solving and play (MoNE, 2006). Moreover, creative development of children in any available opportunities, involvement of the

families in the educational process, consideration of daily experiences of children, and taking advantage of nearby opportunities in children's close environment are among other general features highly characterizing the nature of the program booklet.

2.3. Curriculum Implementation

Curriculum implementation, as defined by Ornstein and Hunkins (2004), is chiefly the delivery process of a curriculum to promote students' learning while endeavoring to transform "knowledge, actions, and attitudes" of the educators (p. 299). In their comprehensive review on curriculum and instruction implementation, Fullan and Pomfret (1977) also delineate implementation as the actual usage of an innovation in the practice. To Fullan and Pomfret, implementation in general entails change of practice at least in five domains, namely "materials, structure, role/behavior, knowledge and understanding, and value internalization" (p. 336).

To bring about such changes is so complex and time consuming that implementing an educational innovation or idea necessitates the application of various types of interventions throughout the process including arrangement of the logistics and resources in the organizations, training of the teachers, continuous provision of personalized assistance to the teachers, and as well assessment and evaluation of the teachers (Hord & Hulling-Austin, 1986). As implementers are expected to acquire new knowledge and practice new skills, their provision with recurrent feedback, technical and psychological support becomes the leverage point to slacken their anxiety and uncertainty considerably pressurizing the initial stages of any significant change (Fullan, 1985).

House (1996), moreover, provides an alternative framework to further comprehend this sophisticated nature of curriculum implementation, applying transaction-cost economics to education. Simply, conceiving the reform as a contract among reformers, teachers, students, and parents, House underlies the consideration of three

key attributes, *bounded rationality*, *opportunism*, and *asset specificity*, in the implementation of any educational reform. Given such attributes, it is assumed that teachers who are with their limitations like anyone else, never fully altruistic or obedient and unintelligent or lazy, may sometimes be opportunist. Thus, they may analyze expected costs-benefits of a reform and do not to risk themselves to change.

Furthermore, Corbett and Rossman (1989) move attention to three interacting paths to successful curriculum implementation based on cultural, technical, and political dynamics. In this broad network of implementation fraught with numerous preceding, intervening and concluding variables, according to Corbett and Rossman, previous norms and beliefs at the cultural level, staff workload at the technical level, and structure of organizational subunits and other competing demands at the political level may change the direction of the implementation process. Correspondingly, membership in compact teams, which is related with higher frequency of meeting with them, is in turn likely to increase teachers' encouragement, which is also in direct relationship with trial use of the innovation, acceptance of new norms and beliefs and judgments about the appropriateness of new practices for classrooms and teaching styles.

To be successful in the implementation process of educational innovations, Rogan and Grayson (2003) as well stipulate for the alignment among three constructs, namely profile of implementation, capacity to support, and outside support. This theory of curriculum implementation in essence concerns the degree of the implementation of ideal practice within unique capacity of each educational organization and the development of its capacity for new demands by the help of outside agencies. Accordingly, Zone of Feasible Innovation is heralded to accentuate the notion that each school needs a particular developmental planning corresponding to their capacity and readiness to implement innovations in order to strategically identify the manageable sequence of steps on a continuum to be accomplished in a given period of time and support (Rogan, 2006; 2007).

2.3.1. Predictors of Curriculum Implementation

Curriculum implementation due to its multidimensional nature is likely to be influenced by a diversity of factors. Investigating on this issue, Evans (2001), for instance, demonstrated that implementation of a program was higher when attitude toward the program was more positive and years of experience was less. Maxwell, McWilliam, Hemmeter, Ault, and Schuster (2001), on the other hand, explained almost half of the variance in observed classroom practices in early childhood education by (1) classroom characteristics like grade, class size, number of children with disabilities, (2) teacher characteristics like level of education and years of experience, and (3) teacher beliefs like developmentally appropriate beliefs and developmentally inappropriate beliefs. Besides, early childhood teachers' area of certificate and their perceived influence on what happens in the classrooms were stated to be significantly predicting developmentally inappropriate practices after classrooms variables like grade, class size, number of children with disabilities, and number of children with free or reduced lunch were controlled (Buchanan, Burts, Bidner, White, & Charlesworth, 1998).

Moreover, when examined broadly, characteristics of the innovation, characteristics of the adopting unit, strategies used, and the characteristics of macro sociopolitical units are likely to be influential on the implementation process as suggested by Fullan and Pomfret (1977, p. 367) and summarized in Figure 2.1. This model of implementation succinctly addresses the significance of the establishment of a clear definition for the innovations to overcome their complexity and as well importance of considering implementer and organizational features in order to capture the way they interfere with the process of implementation. Moreover, it compels attention to the influence of strategic interventions during the course of implementation via feedback mechanisms, in-service training, resource supply, and gaining participation of the implementers. Furthermore, the model enlarges the borders of the factors likely to manipulate implementation by dealing with the socio-political dynamics of the innovations in terms of their design, evaluation, and sustainability.

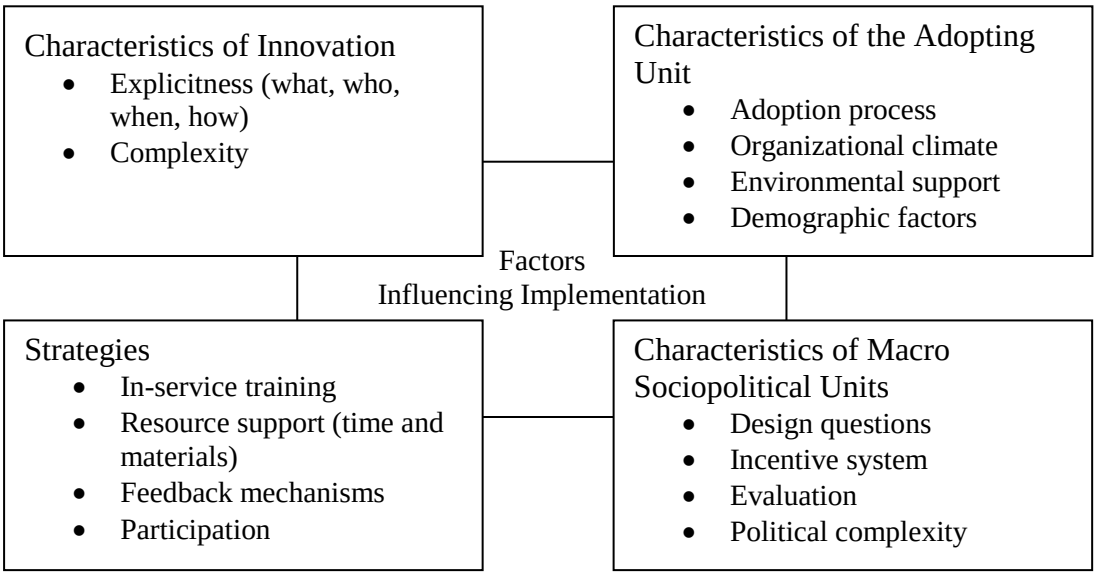

Figure 2.1. Factors influencing curriculum implementation. Note. Adapted from "Research on Curriculum and Instruction Implementation," by Fullan and Pomfret (1997)

Among all these variables, teachers are assumed to make up the adopting unit for educational innovations. Being central change agents in the educational organizations, they deserve a special attention if curriculum implementation goals are to be realized, albeit the reformers in education are often inclined to ignore them (Coenders, Terlouw, & Dijkstra, 2008). Commonly supported belief is that change should be given a start primarily by changing the reformers' misleading view of the teachers from solely technicians to respectful individuals with wisdom, which is essential for gaining teacher engagement and to overcome teacher resistance (Johns, 2002). That simply depicts the facilitating impact of constructing a feeling of ownership in the implementers in times of change (Elizondo-Montemayor, Hernanez-Escobar, Ayala-Aguirre, & Aguilar, 2008).

Significance of teachers' participation and cooperation in curriculum change can be accounted by the fact that not the written curriculum designed by curriculum developers, but its "dereification" by the teachers determines the direction of their practices (Fernandez, Ritchie, & Barker, 2008). That is, a curriculum, viewed as a *black box* in its document, eventually becomes something in the hands of the

teachers via their practices. Use of a curriculum, thereby, is not only about teachers' reading it, but also their evaluating and eventually adapting it, which is a typical illustration of the strong influence of personal context on professional identity of the teachers (Drake & Sherin, 2006).

In relation to this view, teachers while making key decisions with respect to adapting or totally ignoring an innovative idea are likely to behave like "curriculum and instructional gatekeepers who filter proposals from outside through their own beliefs and routines in teaching, their perception of students, and their view on the organizational feasibility of the suggestions" (Van den Akker & Kuiper, 1993, p. 301). Accordingly, they shape their involvement with change movements in the way they wish and at the pace they like, top-down reforms notwithstanding (Cowley & Williamson, 1998).

2.3.2. Orientations in Curriculum Implementation Studies

Research on implementation with its general scope on organizational and curriculum change is subsumed under two main approaches, fidelity of implementation and process of implementation (Fullan & Pomfret, 1977). Fidelity perspective, used predominantly in curriculum implementation studies, aims at identifying the extent of congruence between the actual use of an innovation and its planned and prescribed practice, whereas process orientation is more concerned with the modification of change during the process of implementation in relation to context-specific conditions and so emergence of individual versions of the same curriculum (Marsh & Willis, 2003). Synder et al. (1992), additionally, entitles a third orientation, curriculum enactment, referring to school experiences which are not mandated but created by teachers and students together as opposed to the fidelity to curriculum.

The question of selecting which orientation to scrutinize curriculum implementation then inevitably poses an area of discussion in the literature, centering broadly on fidelity versus variation in curriculum implementation. In response to this issue,

Huberman and Crandall (1983) asserted that in cases where the school autonomy is not an particular area of concern, well developed innovations in the initial phases of implementation demand more fidelity than variation, for the degree of change would be downgraded by the users otherwise (as cited in Fullan, 1985). However, teachers in the practice are already found to have a tendency to make adaptations to the implementation of a program regardless of their level of support for it (Datnow & Castellano, 2000), which makes the variation inevitable in curriculum implementation.

Consistent with the fidelity perspective, Hall and Loucks (1977) presented a developmental model to capture the levels of use of an innovation as they claimed that it is highly critical to know whether a treatment is actually implemented or not to determine if something has indeed changed or not. Hypothesizing that level of implementation may differentiate the results associated with the innovation, they eventually identified eight levels of use to describe teacher behaviors in relation to innovation as nonuse, orientation, preparation, mechanical use, routine, refinement, integration, and renewal.

Extending this model, the Concerns Based Adoption Model (CBAM) was proposed to empirically inquire into implementation of educational innovations, measuring the individual change in the light of such concepts as Stages of Concern (SoC), Levels of Use (LoU), and Innovation Configurations (IC). According to CBAM, as cited by Anderson (1997), teachers express some sort of concern as they move along the process of implementation, entitled as awareness, informational, personal management, consequence, collaboration, and refocusing. Moreover, they demonstrate various patterns of use at different points in the process like nonuse, orientation, preparation, mechanical, routine, refinement, integration, and renewal. Aside from these two dimensions, still important is the fact that different versions of implementation are likely to emerge, which may include the essentials of the innovation or may not. Overall, with its three dimensional structure, dealing with both fidelity and variation, CBAM is viewed to yield substantial information to

develop and deliver required interventions to guide and facilitate the users of implementation.

2.3.3. Curriculum Implementation in Turkey

Implementation of the new constructivist curriculum appears to comprise an area of serious concern in the context of schools in Turkey. Report of the commission of the professors in the area of Curriculum and Instruction (2005), analyzing and evaluating the new elementary school curriculum, substantially criticizes it for its theoretical foundation grounded on only one educational philosophy and for adapting the curricula of other countries, largely ignoring the country specific needs and interests. Moreover, Bıkmaz (2006) pointed out that several slogan ideas of the constructivist curriculum such as considering individual differences, promoting active learning in students, assessing and evaluating students, and redefined teacher role are highly likely to bring about mental ambiguity in educational settings during the process of implementation as they are very much open to misunderstanding on the part of the teachers.

Confirming these concerns, several evaluation studies mainly based on teacher, administrator, inspector and parent reports present various problems associated with the implementation of constructivist curriculum. These problems are typically indicated to result from crowded classroom size, limited instructional time, ineffective teacher training, teachers' lack of understanding of the new curriculum, ineffective and inadequate in-service training of the teachers, lack of necessary educational materials and equipment in the schools, lack of high quality course books, incompatible nature of the examinations for entrance to secondary and higher education with the curriculum, ambiguity in terms of process-oriented assessment and evaluation means, insufficient technology at the schools, parents' lack of knowledge about the curriculum, lack of relation among different subject areas, and teachers' resistance for change (e.g., Bulut, 2007; Çınar, Teyfur, & Teyfur, 2006; Eğitim Reformu Girişimi, 2005; Ekiz, 2003; Ersoy, 2007; Karadağ, 2007; Karakuş &

Kösa, 2009; Kay & Halat, 2009; Kayıkçı & Sabancı, 2009; Keleş, Bakar, & Koçakoğlu, 2009; Kırkgöz, 2007; Korkmaz, 2006, 2008; Sert, 2008; Yaman, 2009; Yapıcı & Demirdelen, 2007; Yıldırım, 2008).

Given the implementation of early childhood curriculum, Uzun (2007) based on the reports of early childhood teachers working at public and private preprimary classes in the sample of Malatya reported that teachers to a large degree practiced the requirements of the constructivist curriculum (2002 early childhood curriculum). However, it was revealed that they rarely organized field trips, which was influenced by years of teaching, class size, and the school's socio-economic environment.

Moreover, Erden (2010) evaluated the implementation of current educational program in the sample of Ankara with 223 early childhood teachers. This study put forward that early childhood teachers confronted problems in their practices primarily regarding physical environment of early childhood settings such as teaching at crowded and small classrooms and evaluation and assessment of the students like conducting portfolios, anecdotal and observation records. In addition, early childhood teachers in this study reported that they faced with difficulties in the areas of planning science and mathematics activities, arranging field trips, involving families and including students with special needs. Moreover, Erden demonstrated that these problems associated with early childhood curriculum implementation significantly differed between public and private schools, but did not change in relation to teachers' degree of education, area of specialization, teachers' years of experience, and teachers' participation in-service training programs.

Furthermore, Düşek (2008) in her study, conducted in the sample of Ordu to examine the perception of 29 school inspectors, 38 school principals and 114 early childhood teachers toward current early childhood curriculum, revealed that 21.2% of early childhood teachers did not implement the curriculum. This study particularly illustrated the challenge of family involvement and inclusion in education for early childhood teachers. It also underlined the nonexistence of a teacher aide for the

classroom as a problem in front of curriculum implementation in addition to physical inadequacies in terms of class space and materials and equipment. In a similar fashion, Kandır, Özbey, and İnal (2009), studying with 154 participants in Afyon and Ankara, figured out that early childhood teachers confronted major obstacles to implementation of the new curriculum more frequently as regards determining objectives and competencies for learning, evaluating students, teaching at crowded classrooms, preparing and selecting educational materials, and arranging learning environment.

2.4. The Nature of Beliefs

Belief, defined differently by numerous researchers, is referred as a *messy construct* by Pajares (1992), noting the following:

> Defining beliefs is at best a game of player's choice. They travel in disguise and often under alias-attitudes, values, judgments, axioms, opinions, ideology, perceptions, conceptions, conceptual systems, preconceptions, dispositions, implicit theories, explicit theories, personal theories, internal mental processes, action strategies, rules of practice, practical principles, perspectives, repertories of understanding, and social strategy, to name but a few that can be found in the literature (p. 309).

Notwithstanding this ambiguity, Rokeach (1968) introduced a more organized view of beliefs, classifying them mainly into three categories: descriptive or existential beliefs, evaluative beliefs, and prescriptive or proscriptive beliefs (as cited in Rokeach, 1973, pp. 6-7). What distinguishes one from another is their distinct focus on concepts like true or false (descriptive or existential), good or bad (evaluative beliefs), and desirable or undesirable (prescriptive or proscriptive beliefs).

Though they may be given different names, beliefs at all hold five major characteristics differentiating them from knowledge as mentioned like the following:

1. Beliefs are subjective assumptions, neither factual propositions nor standardized truths;
2. Beliefs are not consensual, open to any sort of disagreement;

3. Beliefs embrace changing degrees of value, from strong to weak, classified as central and peripheral beliefs;
4. Beliefs involve an affective, episodic, and evaluative dimension (Turner, Christensen, & Meyer, 2009).

Given these attributes, Nespor (1985), providing a conceptual framework on the nature of belief systems, discussed the functions of beliefs under such domains as task definition and cognitive strategy selection, memory processes, and dealing with ill-structured problems. Broadly speaking, according to Nespor, belief systems are firstly likely to determine individuals' definition of the tasks and consistently their selection of strategies to carry out those tasks. Secondly, since beliefs include affective elements such as mood, feelings, emotions, and judgments, they are stored in the long-term memory in a more durable form, influencing individuals' learning and their use of what they have learnt. Thirdly and finally, beliefs appear to assist individuals to cope with various type of problems even in the most radical and unpredictable cases because they rely on personal experiences and are characterized by being unbounded in terms of their relevance to varying circumstances.

Apart from above mentioned functions of beliefs in cognitive and behavioral processes, what still remains to be noteworthy is their role in the course of individual change. The basic principle of belief system theory asserts that change of central beliefs, of foremost significance to the individual, appears to create far greater difference on behaviors (Grube, Mayton, & Ball-Rokeach, 1994). Accordingly, Rokeach (1973) cited self conceptions, which basically include all beliefs answering the question of *who I am* as the most critical element of the belief system and simply proposed to create a condition of self dissatisfaction by means of self confrontation to induce individual change (as cited in Quackenbush, 1989).

2.4.1. Relation of Teaching Beliefs to Educational Practice

Studying teacher beliefs has emerged as a new line of research in the literature owing to a shift of focus from observable teacher behaviors to teacher thinking processes in late 1960s to mid 1970s (Erdiller & McMullen, 2003). Traditional research on teaching, also called process-product research, has chiefly centered on the influence of observable actions of teachers on student achievement, while advances in cognitive psychology and research paradigms have moved attention to the mental constructs and processes which guide teacher behaviors (Fang, 1996).

Teaching beliefs research in essence appears to hold two major assumptions. First, uncertainties in teaching inevitably force teachers to form their own personal educational theories to cope with the unpredictable nature of classroom settings (Kagan, 1992). That is, teachers somehow act in the classrooms more based on their beliefs of education as they continuously make judgments and decisions based on their beliefs (Fang, 1996). Second, beliefs of the teachers influence their perceptions and behaviors; in other words, how they make sense of and react to the world (Fang, 1996; Haney, Lumbe, & Czerniak, 2002; Keys, 2007). Thus, capturing teachers' teaching beliefs at the core offers insight into the processes guiding teachers' decisions and actions (Pajares, 1992; Wood & Bennett, 2001).

Accordingly, predominant role of the beliefs in teaching can enlighten one part of the story regarding failure of educational innovations and can also provide explanation for frequently mentioned gap between theory and practice. Considering their decisive function, it can presumably be hypothesized that incongruence between teaching beliefs and educational innovations would inevitably be associated with low level of implementation or no implementation at all. In fact, several investigations conducted with early childhood teachers provide evidence for such kind of a relationship between teacher beliefs and their practice in the literature (e.g., Kagan & Smith, 1988; Lee, Baik, & Charlesworth, 2006; Maxwell, McWilliam, Hemmeter, Ault, & Schuster, 2001; McMullen, 1999; McMullen et al., 2005; McMullen et al., 2006;

Mitchell & Hegde, 2007; Murphy, 2004; Rivilland, 2007; Spodek, 1988; Stipek & Byler, 1997; Vartuli, 1999; Wang, Elicker, McMullen, & Mao, 2008)

Rivalland (2007), for instance, arrived a key conclusion in that beliefs in harmony with educational documents were clearly demonstrated in the practice, whereas those which were in conflict with them were enacted variously across different contexts. Consistent with this view, Murphy (2004), while discussing the practices in Irish infant classrooms, maintained that teacher-directed classroom practice observed in the study to some point resulted from teacher assumptions about play and learning conflicting with the constructivist curriculum framework. Spodek (1988), moreover, indicated the great variety in implicit theories of early childhood teachers, influencing their decisions in the classrooms. In this study, preschool, kindergarten, and first grade teachers had different beliefs about education and so varying priorities in their teaching.

Korean early childhood teachers, who experienced a discrepancy between their beliefs and practices, were in a similar manner more likely to implement developmentally appropriate practices when their beliefs were more in agreement with non-directive teaching strategies (Shim & Herwig, 1997). Likewise, Chinese early childhood teachers significantly reported a consistency between their practices and beliefs, highlighting a relationship between child-initiated learning and integrated curriculum beliefs and child-initiated, creative, and manipulative practices (Wang, Elicker, McMullen, & Mao, 2008).

Kagan and Smith (1988) similarly revealed how teacher beliefs shaped classroom practices of early childhood teachers. According to the results of this study, having higher scores on Idealist scale was related with more child-centered behaviors as observed with teachers' relatively less use of criticism and working and communicating with individual children or with small groups rather than whole class, whereas scores on Pragmatic and Realist scales were positively related with more teacher-centered approach of education. Yet in another study by Stipek and

Byler (1997), child-centered beliefs were associated with an observed positive climate in the class and negatively associated with skills-based education, similar to finding of the study by McMullen et al. (2005), presenting the significant relation between developmentally appropriate beliefs and practices in five different countries including the USA, Taiwan, Korea, Turkey, and China.

Vartuli (1999) also provided evidence for the relationship between self-reported beliefs and practices of early childhood teachers and their observed classroom practice, taking into consideration the influence of teachers' years of experience, grade level of the classes, and certificate of the teachers. Yet in another study, teachers practiced more child-centered, choice/play time, emergent language, and literacy activities when they endorsed more developmentally appropriate beliefs, whereas they focused more on consistent routines, organized classrooms, preplanned curriculum, and teacher-directed learning when they endorsed more traditional teaching beliefs (McMullen et al., 2006).

Nevertheless, other part of the story may also be explained by a counterargument suggesting that teachers do not implement the curriculum even though their beliefs agree with it; that is, "they just talk the talk but not walk the walk in the education" mainly due to lack of resources, time, and ongoing professional support (Keys, 2005, p. 499). Thus, there may not be a real relation between beliefs and actions of the teachers (Rentzou & Sakellariou, 2010; Wilcox-Herzog, 2002).

For instance, while American early childhood candidate teachers in one study were identified with having constructivist teaching beliefs (Aldrich & Thomas, 2005), it was contradictorily in another study noticed that a great deal of developmentally inappropriate practice was common in today's kindergartens in the USA (Charlesworth, Hart, Burts, & Hernandez, 1991). Similarly, Kwon (2004) figured out that Korean early childhood practices, which are characterized by extrinsic motivation, worksheets, teacher authority, whole class teaching, and separation of play time from work, were not still child-centered in spite of a child-centered

national curriculum and child-centered teacher beliefs mostly due to Korean culture, class size, and parental pressure.

Existence of such discrepancy indeed needs to be interpreted with care since the lack of relation between teaching beliefs and action revealed in some studies may be associated with measurement specificity, participants with extreme beliefs, situation factors, and depth and strength of the beliefs (Wilcox-Herzog, 2002). Moreover, McMullen (1999) pays attention to the cumulative influence of several personality characteristics probably mediating between teaching beliefs and practices, indicating a direct relation among developmentally appropriate beliefs, self-efficacy beliefs, and practices of early childhood teachers along with the influence of locus of control and professional experience on developmentally appropriate practices. Therefore, investigations involving multiple variables along with teacher beliefs, attempted to be achieved in this study, can better explain the relation between what happens in the mind of teachers and what happens in their classes.

2.5. The Nature of Self-Efficacy Beliefs

The concept of perceived self-efficacy is defined as "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 193). It does not measure the skills one has; on the contrary, deals with the beliefs regarding what one believes to be capable of doing in different contexts under various circumstances (Bandura, 1997).

Self-efficacy beliefs can also be perceived to be the most central mechanism of human agency persons use to make "intentional" actions in order to contribute to their functioning as they strongly strive for exercising control over life events (Bandura, 1995). This is simply because of that "If people believe they have no power to produce results -the condition of having low self-efficacy-, they will not attempt to make things happen" (Bandura, 1997, p. 3).

Consistently, according to Pajares (1996), self-efficacy beliefs can strongly determine the level of an achievement of a person provided that it is measured for specific tasks since the global measures which do not correspond to critical tasks certainly weakens the effect of self-efficacy beliefs in the studies. This influence of self-efficacy beliefs on human functioning is argued to come along four major processes identified as cognitive, motivational, affective, and selection by Bandura (1993).

Concerning its impact on cognition through personal goal setting, commitment to the goals, expectancy of attainment, and sense of control of the environment, it can be hypothesized that poor performance may result from low self-efficacy beliefs, but not because individuals are incapable (Bandura, 1993). In relation to motivational processes, self-efficacy beliefs might distinguish the nature of self-goals, the effort expended, and the level of resilience in case of the failures. For instance, individuals with a higher sense of perceived self-efficacy are likely to consider difficult tasks as challenges to be achieved rather than threats to be avoided. Consistently, they set more demanding goals for themselves with a strong commitment and consistently exert higher levels of effort (Bandura, 1997). Moreover, in terms of affective processes, self-efficacy beliefs may contribute to individuals' coping ability with stress and depression and may help decline or eliminate anxiety arousal (Bandura, 1997). Concerning selective processes, self-efficacy beliefs may determine the choices of the individuals and so their developmental pathway. To illustrate, Bandura (1993) validated the relation between self-efficacy beliefs and career options of the persons.

Given its paramount influence on human performance as described above, it ultimately becomes essential to distinguish the sources from which self-efficacy beliefs are constructed. Such knowledge can inform researchers with respect to the ways to alter self-efficacy beliefs. Bandura (1997) elucidates four major sources of information for the development of self-efficacy beliefs: enactive mastery

experiences, vicarious experiences, verbal persuasion, and physiological and affective states.

Asserted as the most influential source of self-efficacy beliefs by Bandura (1997), enactive mastery experiences are considered to assist formation of self-efficacy beliefs by relying on executed past actions in the light of personal memories considering difficulty of the tasks, the amount of effort expended, the amount of external support received, the circumstances action performed, and the pattern of success and failures. To Bandura (1997), vicarious experiences are, on the other hand, the model attainments used to appraise individual capabilities, which are highly shaped by performance and personal similarities, model competence and diversity, and modeling mastery. Furthermore, according to Bandura, verbal persuasion contributes to the formation of self-efficacy beliefs by significant others' expression of faith in the capabilities of individuals as they provide evaluative feedback on their performances. As expected, persuaders' knowledge and credibility along with perceived disparity between one's own beliefs and social appraisal are likely to be factors determining the consequences of this process. Finally, Bandura (1997) notes that somatic reactions in times of arousal, stress, and tension may convey information to make judgments about personal capabilities requiring health functioning and physical strength.

2.5.1. Relation of Teacher Self-Efficacy Beliefs to Educational Practice

When applied to education, teacher self-efficacy beliefs generally refer to the self evaluation of teachers in terms of their abilities to carry out actions to attain a particular teaching task in a specific context (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Guskey (1987) also views perceived teacher self-efficacy as "a teacher's belief or conviction that he or she can influence how well students learn, even those who may be difficult or unmotivated, which is in a sense a teacher's belief that I can make this happen" (p. 41).

Teacher self-efficacy beliefs, which attracted the attention of a growing number of researchers for many years, were identified to be a significant variable particularly for instructional and teacher effectiveness studies (Gibson & Dembo, 1984; Guskey & Passaro, 1994). Correspondingly, Berman and McLaughlin (1977) cited teacher self-efficacy beliefs to be the most powerful teacher characteristic explaining achievement of the project goals, student achievement, teacher change, and maintenance of the project materials and methods. Bandura (1993) similarly underlined the fact that affecting cognitive, affective, and selective process of the mind, teacher self-efficacy beliefs can indeed make difference in the atmosphere of a classroom a teacher develops and the type of learning taking place in a class.

In agreement with above studies, efficacy literature offers a number of investigations associating certain type of educational attributes and teacher behaviors to teacher self-efficacy beliefs. Gibson and Dembo (1984), for instance, reported that teachers with high self-efficacy allocate more time for academic learning and better help students with learning difficulties to be successful. Increasing perceived self-efficacy of teachers then seems to be a promising idea to improve teacher practices chiefly for difficult to teach students or students from diverse backgrounds (Tucker et al., 2005).

Teacher self-efficacy beliefs were also found to be considerably related with emotional intelligence, which may improve teachers' social skills when dealing with students, parents, and principals (Penrose, Perry, & Ball, 2007). Additionally, a high sense of teacher efficacy when combined with collective efficacy and academic climate is argued to be a strong pressure for effective teaching and learning since efficacious teachers would be more likely to perceive high expectations and standards for academic success (Chong, Klassen, Huan, Wong, & Kates, 2010).

Moreover, in the context of early childhood education, teacher self-efficacy beliefs can significantly influence children's gains in print awareness (Guo, Piasta, Justice, & Kaderavek, 2010), their beliefs regarding the importance of mathematics education, albeit they are not necessarily reflected in their observed practice (Brown,

2005), and establishment of a positive, cooperative, and supportive school climate (Kim et al., 2010). Chung, Marvin, and Churchill (2005) further demonstrated the role of teacher self-efficacy beliefs in the establishment of positive teacher-child and teacher-parent relationships. They were also shown to be related with pre-service teachers' choice of the instructional methods to be used to educate children with diverse educational needs (Wertheim & Leyser, 2002).

Gu and Day (2007), in addition, discussed the contribution of self-efficacy beliefs to the growth of a stronger sense of teacher resilience. Self-efficacy beliefs, besides, were detected to be related with the ways teachers use to solve problems in sample of Turkish participants, identified to be more constructive and productive approaches for teachers with a higher sense of self-efficacy like evaluation, planning, thoughtful, and self-confident rather than withdrawn and urgently (Kesgin, 2006). Citing a number of research studies in their review, Tschannen-Moran et al. (1998), furthermore, summarized the positive influence of teacher self-efficacy beliefs on such domains as teachers' persistence, enthusiasm, commitment, instructional behavior as well as student outcomes like achievement, motivation, and self-efficacy beliefs.

Furthermore, given the scope of this study, there seems to be a need to deal with the relation between teacher self-efficacy beliefs and educational change. McKinney, Sexton, and Meyerson (1999) provided sound evidence for the significance of efficacy beliefs to initiate and sustain educational change, stated to be consistent with previous findings in efficacy literature. In their efficacy based change model, they demonstrated that self-efficacy beliefs made an impact on the concerns individuals had and attribution processes they held in the phase of the implementation. The highlighted finding was that individuals with a higher sense of self-efficacy indicated less and different sort of concerns as they moved along the implementation of the innovation and viewed success to come as a result of effort rather than luck.

Supporting this view, in the study by Evers, Brouwers, and Tomic (2002), conducted with a random sample of 490 higher secondary school teachers in the Netherlands and analyzed with hierarchical regression, teacher self-efficacy beliefs were found to be significantly related with the burnout level of the teachers when implementing a new educational innovation. The study indicated that efficacious teachers tended to more willingly accept and practice educational changes. Ghaith and Yaghi (1997) in their study, conducted with a small sample of 25 teachers, still postulated a positive relationship between personal self-efficacy beliefs of teachers and their implementation of instructional innovations. They argued that efficacious teachers were more likely to perceive the innovation to be less difficult to implement, to be congruent with their current practices, and to be very significant.

Similarly, in the context of a development program, Cantrell and Callaway (2008) based on the interview data retrieved from 16 teachers revealed that teachers with a higher sense of self-efficacy exhibited higher implementation of the content as they were detected to be more likely to be persistent to cope with the barriers they encountered in the process of implementation. Nonetheless, Wheatley (2002) challenged all these findings about contributing role of self-efficacy beliefs in educational change. The author basically discussed that self-efficacy doubts, which may result in disequilibrium, reflection, motivation to learn, experiencing with different ideas, and collaboration, may foster teacher change and so benefit educational reforms predominantly of progressive nature, which is opposed to what is commonly assumed.

2.6. Summary of Literature Review

Curriculum implementation, standing for the actual practice of a curriculum, is argued to be influenced by a number of factors in the literature. One of the most critical ones coming into prominence in the literature is teacher characteristics, for teachers actively shape the practice of a curriculum, to a large degree determining its level and nature of use. Therefore, fidelity to curriculum versus variation of the

curriculum in the course of implementation because of teacher characteristics comprises a significant area of concern in the educational research.

Two salient variables commonly used in the literature to investigate teacher impact on curriculum implementation are teacher beliefs about teaching and teacher self-efficacy beliefs. This appears to be mainly because of the growing interest of educational research in the relationship between teacher thinking processes and their actions as beliefs are strongly considered to dominate and govern the profession of teaching.

Studies on the relation between teacher beliefs about teaching and their instructional practices chiefly deal with the teachers' perception of true education for their students and appear to depict inconsistent findings in the literature. Despite the presence of a variety of studies indicating the congruence between teacher beliefs and actions, there is still likelihood that teachers sometimes may not practice what they preach. On the other hand, teacher self-efficacy studies are in general likely to illustrate a positive influence of teacher self-efficacy beliefs on school and teacher effectiveness.

Early childhood education in Turkey, which underwent a curriculum change in 2006, then offers an ideal context to investigate the influence of teacher beliefs along with other teacher or beyond teacher attributes on the extent of the implementation of the new constructivist curriculum. It may, thereby, be probable to improve the extent early childhood teachers implement current curriculum and capture whether the intentions of the educational program are achieved or not.

CHAPTER III

METHOD

This chapter attempts to depict research methodology employed for the investigation. It begins with the introduction of research design. Next is the clear definition of research questions and variables of the study. Then, sampling, data collection instruments, and procedures are presented. Finally, the chapter is ended with the discussion concerning limitations of the study.

3.1. Research Design

Adopting quantitative assumptions, the current study was an associational type research. Associational research is basically attempted to examine relationships between variables without manipulating them (Fraenkel & Wallen, 2006). Moreover, as cited by Fraenkel and Wallen (2006), it is particularly called correlational research of predictive type, conducted with the purpose of predicting the outcome variable. In the present study, the outcome variable, the extent of curriculum implementation of Turkish early childhood teachers, was intended to be predicted from several predictors like teacher beliefs, teacher demographics, and school related factors.

3.2. Research Variables

The dependent variable for this study was identified as the extent of curriculum implementation of Turkish early childhood teachers in accordance with the key principals proposed by MoNE. Involving two dimensions, it was more specifically the extent of early childhood teachers' implementation of curriculum in terms of content selection and also the extent of their implementation of curriculum in terms of learning process.

Independent variables were, on the other hand, subsumed under four major themes for this research: (1) teacher self-efficacy beliefs, (2) teaching beliefs, (3) teacher demographics, and (4) school related factors. Teacher self-efficacy beliefs herein referred to efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management. Teaching beliefs were, moreover, identified as constructivist teaching beliefs and traditional teaching beliefs. Teacher demographics, besides, included such variables as teachers' years of experience, and teachers' degree of education. School related factors, furthermore, dealt with the variables defined as age of the students, class size, school type, length of the program, and existence (nonexistence) of a teacher aide for the class. The data collected regarding teachers' area of specialization were not included in the analyses as participants came from very similar fields, making their comparison difficult to interpret.

3.3. Research Questions

This study attempted to shed light into following research questions:

1. How well can the extent of curriculum implementation in early childhood education in relation to content selection be predicted from teacher self-efficacy beliefs, teaching beliefs, teacher demographics, and school related factors?
2. How well can the extent of curriculum implementation in early childhood education in relation to learning process be predicted from teacher self-efficacy beliefs, teaching beliefs, teacher demographics, and school related factors?

3.4. Sampling

The following sections present the sample selection procedure and characteristics of the sample.

3.4.1. Sample Selection

The accessible population for this study was early childhood teachers (N = 1445) working in the elementary and preprimary schools in Ankara in seven central districts identified as Altındağ (N = 104), Çankaya (N = 326), Etimesgut (N = 211), Keçiören (N = 252), Mamak (N = 148), Sincan (N = 128), and Yenimahalle (N = 276). The main reason for the choice of these districts was the presence of relatively higher number of early childhood teachers employed at schools there as indicated by statistical data retrieved from MoNE for 2010-2011. Moreover, only public schools were chosen as a measure of control to ensure that all schools implemented same curriculum proposed by MoNE.

The cluster sampling was utilized to reach group of the participants in the representative schools selected from the population of public schools in seven central districts of Ankara. The sample eventually consisted of 308 early childhood teachers after the exclusion of 22 cases with the number of missing data ranging from 3 to 12. Considering the formula of Dillman (as cited in Vaske, 2008), this sample size was assumed to be suitable for generalizing to the concerned population at a 95% level of confidence with a 5% margin of error since the calculated sample size to precisely represent the target population was 304. Furthermore, Little's Missing Completely at Random (MCAR) test displayed a random pattern of missing values, $\chi^2(2276, N = 308) = 2875.15$, $p = .09$. Therefore, the EM (expectation-maximization) method was applied in order to estimate the missing values.

3.4.2. Sample Characteristics

Table 3.1 displays general characteristics of the participating early childhood teachers and some aspects of their work conditions. Participants of the study were unsurprisingly all females, congruent with general characteristic of the profession of early childhood education as females make up 95% of the field across Turkey by the educational year 2009-2010 (MoNE, 2010). Teachers' years of experience ranging

from 1 year to 35 years was on average 14.04 (*SD* = 8.43). Of the sample, 72.7% of the participants (*n* = 224) had a Bachelor of Science degree, while 17.2% of them (*n* = 53) had an Associate degree. Teachers with an Open University degree (5.8%, *n* = 18) and a Master of Science degree (3.9%, *n* = 12), however, represented the minority group in relation to degree of education. Furthermore, participants' area of specialization was commonly either in the area of Early Childhood Education (58.8%, *n* = 181) or in the area of Child Development and Education (28.2%, *n* = 87).

Additionally, the size of the classes participating early childhood teachers were working ranging from 5 to 29 children was on an average 20 students (*SD* = 4.35). They were teaching mostly 5 and 6 years old children (76.3%, *n* = 235). In addition, by majority, the participants were providing service in the elementary schools (54.5%, *n* = 168), for half-day programs (62%, *n* = 191), and in the presence of a teacher aide for the class (68.8%, *n* = 212).

Table 3.1
Profile of Participating Early Childhood Teachers and Their Work Conditions

Gender	*f*	*%*
Female	308	100
Teachers' years of experience		
1-5 years	66	21.43
6-10 years	54	17.53
11-15 years	56	18.18
16-20 years	57	18.51
21-25 years	39	12.66
26-30 years	33	10.71
31-35 years	3	0.97
Teachers' degree of education		
Bachelor of Science degree	224	72.7
Associate degree	53	17.2
Open University degree	18	5.8
Master of Science degree	12	3.9
Area of specialization		
Early Childhood Education	181	58.8
Child Development and Education	87	28.2
Other	40	13
Age of the students		
Younger than 5 years old	69	22.4
5 and 6 years old	235	76.3
Class size		
5-9 students	2	0.65
10-14 students	34	11.04
15-19 students	91	29.55
20-24 students	125	40.58
25-29 students	56	18.18
Type of the school		
Elementary school	168	54.5
Independent preprimary school	138	44.8
Length of the program		
Half-day program	191	62
Full-day program	115	37.3
Existence (nonexistence) of a teacher aide for the class		
Yes	212	68.8
No	93	30.2

Note. Missing values are not demonstrated on the table.

Apart from these facts, as a contribution to the interpretation of research findings, to provide a more accurate portrayal of concerned sample, early childhood teachers were asked to rate the significance of their role in curriculum implementation and the

frequency they kept up with the publications related to their profession. The significance of the role of teachers in curriculum implementation was rated to be high by 95.5% of the participants (n = 294) as displayed in Table 3.2. Moreover, the majority of them (80.8 %, n = 249) reported that they either always or frequently kept track of publications related to early childhood education

Table 3.2
Teacher Ratings regarding the Significance of the Role of Teachers in Curriculum Implementation and Their Interest in Keeping up with the Publications

Significance of the role of teachers in curriculum implementation	*f*	*%*
High	294	95.5
Moderate	11	3.6
Low	1	0.3
None	1	0.3
Rate of keeping up with the publications		
Always	70	22.7
Frequently	179	58.1
Sometimes	45	14.6
Rarely	13	4.2
Never	1	0.3

Note. Missing values are not demonstrated on the table.

3.5. Data Collection Instrument

The following sections present the process of developing the data collection instrument, describing the procedures for assuring validity and reliability of the instrument and information about each subscale.

3.5.1. Instrument Description

The data collection instrument was composed of four main sections including a total of 64 items. Namely, it was consisted of subscales of Curriculum Implementation Scale, Turkish Version of the Teachers' Sense of Efficacy Scale, Teacher Beliefs Survey, and Personal Information Form.

The *Curriculum Implementation Scale* was developed by the researcher in the current study. It is designed as a 5-point rating scale ranging from "never" (1) to "always" (5). Involving 25 questions, items are likely to measure the extent of curriculum implementation in relation to particular skills and objectives to be brought in children and key considerations in their selection and learning process as well. The sample items include "I attempt to support creative development of children" (item 16), "I consider knowledge level of children before starting activities" (item 3), and "I pay attention to individual differences of children in the activities" (item 8). Development of the instrument and its factor structure are described in detail in the subsequent sections.

The *Turkish Version of the Teachers' Sense of Efficacy Scale*, used in this study, was developed by Tschannen-Moran and Woolfolk Hoy (2001) and adapted by Çapa, Çakıroğlu, and Sarıkaya (2005). The original scale has a long version with 24 items and a short version with 12 items. The short version of 12 items was herein administered for its ease of use. Items describe general tasks performed by teachers in relation to three factors: efficacy for student engagement (SE), efficacy for instructional strategies (IS), and efficacy for classroom management (CM). Sample items from each of three factors include "How well can you motivate students who show low interest in school work?" (Item 3, from the SE factor), "How well can you use different teaching methods in the class?" (Item 12, from the IS factor), and "How much can you get students to follow classroom rules?" (Item 6, from the CM factor). Items are on a 9-point rating scale ranging from "none at all" (1) "to a great deal" (9). Confirmatory factor analysis conducted with 898 pre-service teachers by Capa-Aydın, Sungur, and Uzuntiryaki (2009) provided evidence for the construct validity of this short version of the instrument, indicating an acceptable model fit with the following fit indices: Tucker Lewis Index (TLI) = .99, Comparative Fit Index (CFI) = .99, and Root Mean Square Error of Approximation (RMSEA) = .07. Moreover, concerning its reliability, the coefficient alpha values were calculated to be .75 for SE, .75 for IS, and .81 for CM.

The *Teacher Beliefs Survey*, recently revised by Gürbüztürk and Şad (2009), was administered to assess teacher beliefs about constructivist and traditional way of education. It is originally developed by Woolley, Benjamin, and Woolley (2004) and firstly adapted by Duru into Turkish (2006). The survey is composed of 17 items on a 6-point Likert type scale ranging from "strongly disagree" (1) "to strongly agree" (6). Sample items include "One of the most effective ways to plan educational and instructional activities is to get the opinion of students" (Item 1) and "The teacher should make the choices for students since they will not know what to learn" (Item 4). Exploratory factor analysis carried out with 318 pre-service teachers yielded support for a two factor structure which was named as constructivist teaching (CT) and traditional teaching (TT), explaining 35.2% of the variance (Gürbüztürk & Şad, 2009). Internal consistency coefficients of .77 for CT and .63 for TT, moreover, provided evidence for the reliability of this instrument. Nonetheless, wordings of several items (items1, 2, 3, 5, 6, 7, 8, 11, 15, 16, and 17) were in the present study revised without changing the content to improve its structural unity, relevance for early childhood education, and item clarity.

3.5.2. Development of Curriculum Implementation Scale

The theoretical model stated by Clark and Watson (1995) guided the scale development process for this study. Consistent with the proposal of the authors, in order to establish construct validity, the following main steps were respectively taken: (1) conceptualizing target construct, (2) developing an item pool, (3) pilot testing, and (4) conducting factor analysis.

Corresponding to the aim of the investigation, with the help of the literature, curriculum implementation is herein constructed under the approach of fidelity to curriculum. In particular, it is conceptualized as teachers' fidelity to chief proposals of national early childhood curriculum in Turkey. Therefore, the reference source was current early childhood curriculum booklet to create the item pool.

In the construction of the items, it was ensured that they overall reflected four main components of the curriculum, namely objectives, content, instruction, and evaluation. Initially, the item pool was comprised of 57 items derived from the educational program; however, the number of items was later decreased to 26 in order to shorten the time required for its administration based on the criterion that selected items represented the most critical aspects of the educational program.

After then, content validity and item wording of the scale were judged by three academicians from the field of early childhood education, one academician from the field of curriculum and instruction, one academician from the field of measurement and evaluation, and one early childhood teacher. This 26-item structure of the scale, revised consistent with suggestions of the experts, was subsequently tested in the pilot study to determine the validity and reliability of the items.

The pilot study was conducted via mailed survey with 157 early childhood teachers from different regions of Turkey selected based on convenient sampling. In general, participating early childhood teachers were found to be teaching on average for 5.8 years (*SD* = 5.24). By majority, their classes were composed of children who were at the age of 5 and/or 6 (84.1%, *n* = 132). They were also more likely to implement half day programs (69.4%, *n* = 109). Of the sample, 72% of the early childhood teachers (*n* = 113) had a Bachelor of Science degree and 77.7% of them (*n* = 122) had specialized in the area of early childhood education.

Reliability analysis of this preliminary study indicated an overall Cronbach's value of .89 for the Curriculum Implementation Scale. There were not any items substantially improving reliability if deleted except the item 7, "I aim to prepare children for elementary education", increasing α from .888 to .893. Moreover, correlation of this item with the overall scale was below .3, which is argued to be a considerable threat to the reliability (Field, 2005). However, concerning its importance, the final decision was to retain the item 7 in the instrument as a filter item, but to exclude it from the data analysis.

Exploratory factor analysis was, in addition, carried out to delve into factor structure of this new instrument. Though a satisfactory model could not be achieved mainly due to limited sample size, findings guided the researcher to revise the items. Considering possible factors which are likely to emerge, several items (items 4, 6, 12, 13, 14, 16, 18, 19, 21, and 22) were reworded to provide structural unity in terms of language. Additionally, item 13, "I evaluate my own performance", was determined to be excluded from the scale as it was viewed to be unrelated to any prospective factors.

3.6. Data Collection Procedures

The permissions from METU Human Subjects Ethics Committee and Ministry of National Education were primarily taken in order to initiate data collection process, approving that the present study conforms to the principles of ethical practice. Not only all sorts of discomfort for the subjects were eliminated in the process, but also only early childhood teachers who were volunteers to complete the instrument were involved in the study. Confidentiality of research data was also ensured by collecting questionnaires anonymously. All participants, moreover, were clearly informed about the aim and the content of the study.

Data collection process after then lasted for 4 weeks during the spring term of the schools. All schools were visited by the researcher. Surveys were often collected in a two- day interval schedule rather than immediately due to time limitation and heavy workload of the teachers. As the majority of teachers were not observed in the course of completing the questionnaires, it was eventually assumed that they responded to the scale independently, clearly comprehended all items without additional support from the researcher, and reflected their real thoughts rather than socially desirable answers.

3.7. Data Analysis

Considering research questions, multiple regression analyses were conducted to probe the relationship between several independent variables and the two dimensions of the dependent variable. With this analysis, it is simply intended to predict the value of a dependent variable from several independent variables and also to determine the significance of each predictor to the relationship (Tabachnick & Fidell, 2007). More specifically, hierarchical or sequential regression method was selected among different types of predictor entry approaches in multiple regression analysis. That is, independent variables were entered into the equation in an order predetermined by the researcher.

The order of entry was assigned by differentiating variables of major importance from nuisance variables, which is one of the considerations suggested in Tabachnick and Fidell (2007). In the present study, variables of greater theoretical importance like teaching beliefs and teacher self-efficacy beliefs were given later entry than such nuisance variables identified as teacher demographics and school related factors. As there were two outcome variables to be investigated, two multiple regression analyses were performed. In the interpretation of the results, to eliminate type 1 error, the Bonferroni correction was used, dividing the alpha value to the number of analyses, which was .025 (.05/2) for the present case.

In relation to measurement level of the variables, independent variables were both continuous and categorical. Continuous variables were constructivist teaching beliefs, traditional teaching beliefs, efficacy for student engagement, efficacy for instructional strategies, efficacy for classroom management, teachers' years of experience, and class size. The following categorical variables had two levels; thus, did not require any coding procedure: age of the students, type of the school, length of the program, and existence (nonexistence) of a teacher aide for the class. The degree of education, on the other hand, had four levels: Bachelor of Science degree,

Open University degree, Associate degree, and other. Therefore, three dummy coded variables were created using “other” category as the reference point.

3.8. Limitations

As any other study, the present study also has certain limitations. Firstly, in terms of the external validity, the sample is restricted to the population of early childhood teachers working in the public schools of Ankara in Turkey. Moreover, selection of the sample based on cluster sampling rather than simple random sampling is likely to increase the chance that it does not represent the target population (Fraenkel & Wallen, 2006). Nonetheless, the inclusion of a large number of schools in the study was considered as a precaution. A detailed description of the characteristics of the sample was, in addition, presented to contribute to a better evaluation of the generalizability of the results to the intended population.

Secondly, this study is mainly grounded on the assumption that participants report their ideas in an honest and accurate manner, which may present a threat to the internal validity of the study. Occurrence of unforeseen events during the course of administering the instruments, namely history threat can also influence the responses of the participants as participant teachers most of the time were not observed while completing the instruments. There may be as well location thereat to the internal validity considering that teachers were at different schools. However, every effort was made to keep the conditions similar.

Finally, this study implied relationships, but not causes. Any significant relationship may have resulted from another variable not measured herein, for there may be a multiple source of other variables affecting curriculum implementation such as the physical environment of the schools, characteristics of the school administrators, or attitudes of the teachers.

CHAPTER IV

RESULTS

This chapter aims to present research findings as regards predictors of the extent of curriculum implementation in early childhood education. First, validity and reliability analyses of data collection instrument are introduced. Next, descriptive statistics are illustrated concerning independent and dependent variables. Then, moving attention to inferential statistics, the assumptions of multiple regression analysis are discussed, followed by the presentation of relationship among predictor variables and their relation to dependent variables. Finally, the major results of hierarchical multiple regression analyses are introduced.

4.1. Validity and Reliability Analyses

Validity and reliability checks for each subscale used in the current study were performed based on 308 responses.

4.1.1. Validity and Reliability Analyses of Curriculum Implementation Scale

Exploratory factor analysis was performed to figure out the underlying structure for 24 items of the Curriculum Implementation Scale. Particularly, principal axis factor analysis with direct oblimin rotation was conducted as multivariate normality in the data was found to be violated and the factors were assumed to be correlated with each other.

The data were detected to meet two initial conditions for factor analysis identified as adequate sample size and moderate relationship between variables (Field, 2005). Kaiser-Meyer-Olkin measure was .897, recognized to be great in relation to sample adequacy (Field, 2005). Bartlett's test was also highly significant (p = .000), indicating relationship between variables. The determinant of correlation matrix

(.001) was, in addition, greater than necessary value of .00001, eliminating any problem of multicollinearity for these data.

Kaiser's criterion, retaining all factors with eigenvalues greater than 1, extracted six factors for this data set. However, as it is likely to overestimate the number of factors to retain (Field, 2005), factors were extracted in congruence with Catell's Scree test (Figure 4.1). In the light of the breaks in the plot, two factors at the point of the inflexion of the curve appearing relatively more important (Field, 2005) were determined to strongly contribute to the variance in the data set.

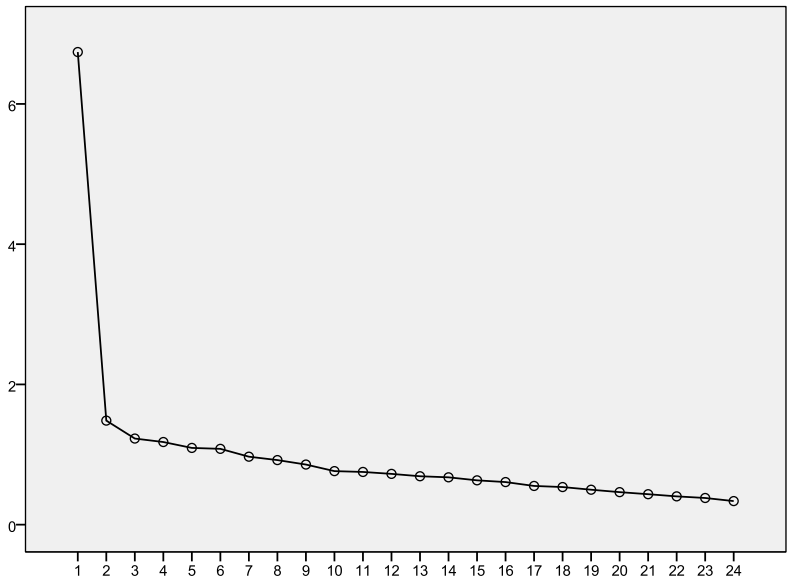

Figure 4.1. Scree plot

Considering the critical values proposed by Stevens (as cited in Field, 2005), the factor loading of .298 and above were determined to be significant for this sample of 308 participants. As a result, only item 6 ("I implement play based activities") with a factor loading of .290 was decided to be omitted, reducing number of items to 23 in the final version of the scale. Remaining items were fundamentally considered to manifest under such topics as *content selection* (CS; selection of certain objectives and competencies and key considerations in their selection) and *learning process* (LP; key pedagogical considerations in the practice). In the final structure, the first

factor (CS) accounted for 25.38% of the variance, while the second factor (LP) accounted for 3.44% of it. They overall explained 28.82% of the variance in the sample. Table 4.1 illustrates the items and factor loadings for the factors.

Table 4.1
Factor Loadings for the Rotated Factors

Item	Factor Loading	
	Content Selection	Learning Process
Item 23	**.71**	-.11
Item 13	**.69**	-.17
Item 14	**.64**	.02
Item 12	**.58**	.11
Item 24	**.55**	.10
Item 18	**.54**	-.01
Item 25	**.52**	.06
Item 22	**.52**	-.00
Item 16	**.49**	.19
Item 17	**.47**	-.06
Item 11	**.43**	.28
Item 3	**.39**	.01
Item 5	**.36**	.09
Item 19	**.34**	.05
Item 20	**.30**	.12
Item 8	**.30**	.10
Item 1	-.14	**.64**
Item 2	.07	**.49**
Item 9	.14	**.45**
Item 21	.07	**.45**
Item 10	.18	**.45**
Item 15	.24	**.39**
Item 4	.23	**.32**
Eigenvalues	5.84	0.8
% of variance	25.38	3.44

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Direct Oblimin.

In addition, the reliability values of the scale were .85 for CS and .73 for LP, meeting the lower limit agreed upon for Cronbach's alpha (Hair, Black, Babin, & Anderson, 1999).

4.1.2. Validity and Reliability Analyses of Turkish Version of the Teachers' Sense of Efficacy Scale (TTSES)

Confirmatory factor analysis via Amos 18 was conducted for current data set in order to test appropriateness of the three-factor structure of the Turkish Version of the Teachers' Sense of Efficacy Scale (TTSES), proposed by Capa et al. (2005). Model was specified with three correlated latent variables, namely efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management, each of which was assumed to be leading to four observed variables.

Maximum Likelihood (ML) was applied as the estimation method owing to its several advantageous statistical features (Harrington, 2009). Having a sample of 308 participants and measuring the variables on a 9-point rating scale, key requirements of ML in terms of sample size and continuous measurement were met. Though multivariate normality was violated in the data, it was not viewed to be at an extreme degree considering the fact that univariate skewness and kurtosis values ranged normally from -.92 to 2.09. That "ML estimation is robust to minor non-normality" (Harrinngton, 2009, p. 44) further strengthened its use as part of analysis properties.

Initially, three-factor 12 item model of TTSES did not fit well, resulting in a significant chi-square value of 219.58, a GFI value of .90, a CFI value of 90.4, and a RMSEA value of .10. To improve model fit, several reasonable error terms suggested by modification indices were allowed to be correlated with each other. These were either items on the same factor (e2-e3, e3-e4, e5-e10, e1-e8, e6-e7, and e7-e8) or items measuring a similar aspect of different factors like having efficacy in developing alternative approaches in relation to instructional strategies and classroom management (e8-e9). Although chi-square value was still significant in

this respecified model, decreasing to 126.50, other goodness of fit statistics like GFI greater than .90 (.93) and CFI greater than .95 (.954) indicated a well fitting model; and RMSEA value (.08) also represented a mediocre fit (Byrne, 2010).

Moreover, all parameters were recognized to be significant, providing evidence for the contribution of each item to the existing factor structure. Their standardized factor loadings ranged from .60 to .68 for efficacy for student engagement (SE), from .69 to .78 for efficacy for instructional strategies (IS), and from .60 to .80 for efficacy for classroom management (CM). Additionally, correlation among latent variables ranged from .81 to 93. Figure 4.2 displays the final model and standardized estimates.

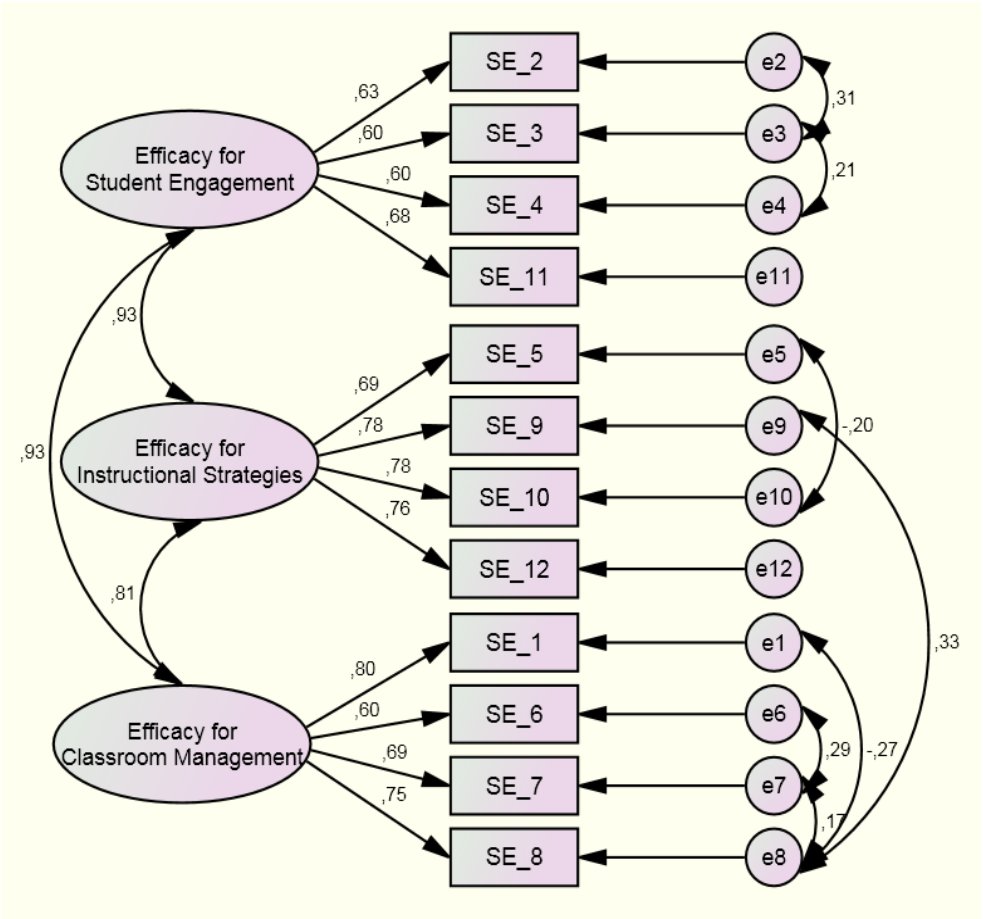

Figure 4.2. Respecified model of factorial structure for TTSES

Furthermore, to assess internal consistency of scores obtained from each factor of TTSES, Cronbach's alpha values were computed. The alpha values ranging from reasonable to good were .76, .83, and .81 for SE, IS, and CM respectively. In addition, correlation of each item with the corresponding factor was observed to be moderately high or high (.40 or above), indicating that they were a good component of the factor.

4.1.3. Validity and Reliability Analyses of Teacher Beliefs Survey (TBS)

Confirmatory factor analysis via Amos 18 was also conducted to test the two-factor 17 item model of the Teacher Beliefs Survey (TBS), previously suggested by Gürbüztürk and Şad (2009). Model specifically hypothesized that two latent variables correlated with each other, namely constructivist teaching beliefs (CT) and traditional teaching beliefs (TT) respectively resulted in seven and ten observed variables. The method of estimation was Maximum Likelihood (ML) despite the violation of multivariate normality considering that absolute values of skewness lower than 3.0 and those of kurtosis lower than 10.0, which was the case in this investigation, was not considered to pose a significant problem (as cited in Harrington, 2009) and ML can handle with moderate non-normality.

Initial model for the two-factor structure of TBS did not fit well, resulting in a significant chi-square value of 243.32, a GFI value of .92, a CFI value of 91, and a RMSEA value of .06. To improve model fit, some error terms suggested by modification indices were allowed to covary. These were yet again either items on the same factor (e4-e5, e11-e13, e12-e14, and e13-e17) or items dealing with a similar aspect of different factors like decisions on the content of the curriculum (e1-e4 and e4-e17).

Respecified model still brought about a significant chi-square value of 178.26; however, other goodness of fit statistics illustrated improvements in the model fit (GFI= .94, CFI= .95, and RMSEA= .04). Besides, all items significantly contributed

to proposed factor structure, estimations of which ranged from .49 to .67 for TT and from .38 to .69 for CT. Two factors were also found to be highly correlated with each other (.42). Figure 4.3 depicts the final model and standardized estimates.

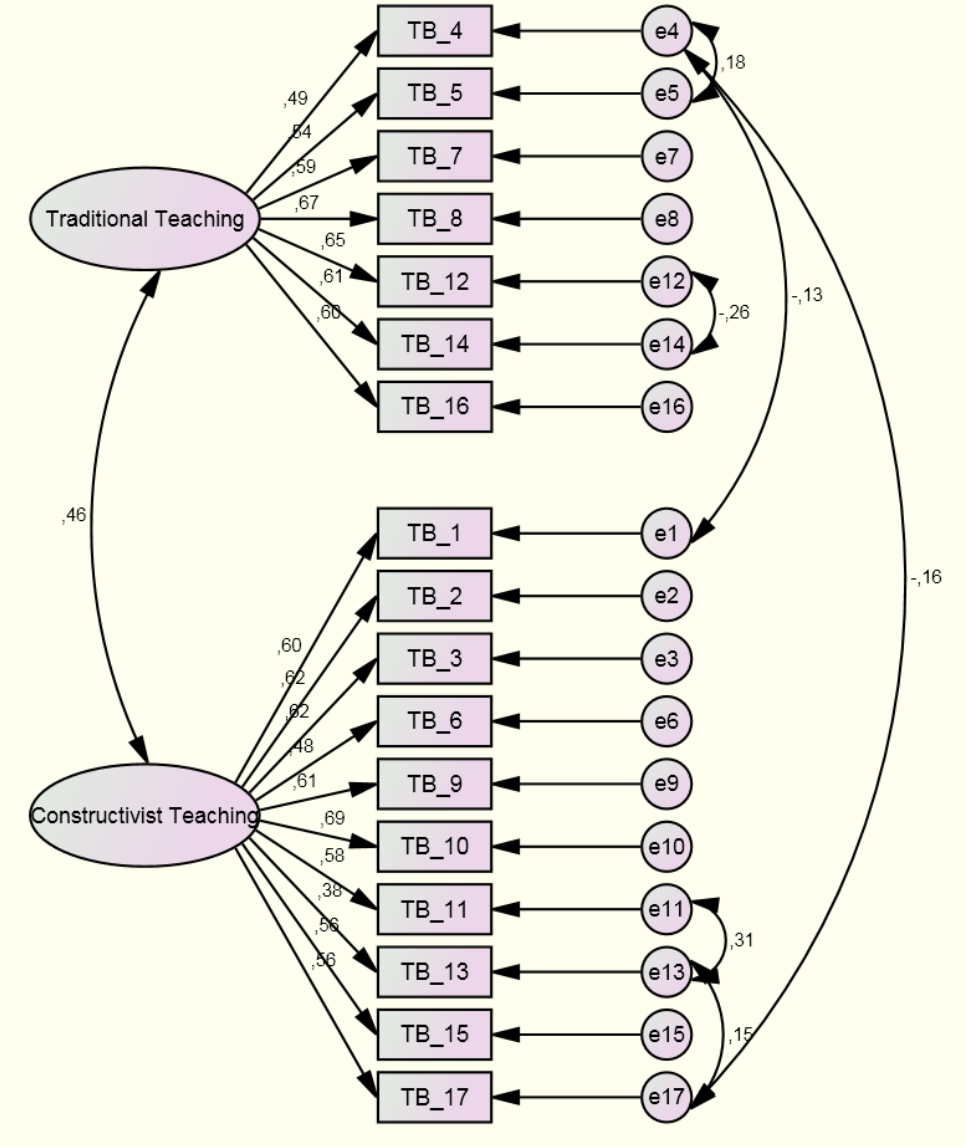

Figure 4.3. Respecified model of factorial structure for TBS

Furthermore, internal consistencies were calculated with Cronbach's alpha coefficient. The alpha values were .79 for TT and .82 for CT. When the correlation of each item with overall factor was examined, all items had high correlations (i.e.,

above .40), providing further evidence for the psychometric fit into the factor structure.

4.2. Results of Descriptive Statistics

Descriptive statistics were hereby calculated to describe participating early childhood teachers with respect to (1) their sense of self-efficacy for student engagement, for instructional strategies, and for classroom management, (2) their beliefs on teaching regarding constructivist and traditional way of education, and (3) the extent of their implementation of the curriculum in relation to content selection and learning process. Descriptions of other predictor variables like teachers' years of experience, class size, age of the students, school type, length of the program, teachers' degree of education, and existence (nonexistence) of a teacher aide for the class were already introduced while discussing the sample characteristics and their work conditions at section 3.4.2. Table 4.2 displays descriptive statistics for teacher beliefs, content selection, and learning process.

Table 4.2
Descriptive Statistics for Teacher Beliefs, Content Selection, and Learning Process

Variable	*M*	*SD*
Efficacy for student engagement	7.65	.86
Efficacy for instructional strategies	7.45	1.00
Efficacy for classroom management	7.31	.94
Traditional teaching beliefs	4.24	.88
Constructivist teaching beliefs	5.08	.59
The extent of curriculum implementation in terms of content selection	4.57	.32
The extent of curriculum implementation in terms of learning process	4.32	.41

In relation to teacher self-efficacy beliefs, mean score was 7.65 (*SD* = .86) for efficacy for student engagement, while it was 7.45 (*SD* = 1.00) for efficacy for instructional strategies and 7.31 (*SD* = .94) for efficacy for classroom management. On a 9-point rating scale, these findings pointed that mean self-efficacy scores of the participants were at the higher end of the scale. When the mean scores of all items of

TTSES were sorted, the highest mean score was detected to be in the area of student engagement (*M* = 7.96), which was item 3, "How much can you get students to believe they can do well in school work?" On the other hand, the lowest mean score was obtained in the area of classroom management (*M* = 7.01), which was item 8, "How well can you establish a classroom management system with each group of students?"

Concerning teacher beliefs on teaching, descriptive statistics revealed that mean score of constructivist teaching beliefs (*M* = 5.08, *SD* = .59) was somehow higher than that of traditional teaching beliefs (*M* = 4.24, *SD* = .88). Participating early childhood teachers had agreement most with item 2, "Doing necessary arrangements in the environment (like clustering desks and using tables) should be preferable so that students can work together" in the domain of constructivist teaching. They, moreover, had disagreement most with item 5, "Students should be evaluated based on the results of their products" in the domain of traditional teaching.

Additionally, given the extent of curriculum implementation of early childhood teachers, descriptive statistics were investigated as regards two dimensions: content selection and learning process. Calculated mean scores were 4.57 (*SD* = .32) for content selection and 4.32 (*SD* = .41) for learning process. On a 5-point scale, these scores indicated that the participants were implementing major principles of the curriculum proposed in the program booklet by MoNE as regards content selection and learning process somehow higher than "often". The lowest mean score was in the dimension of learning process (*M* = 4.01), which was item 7, "I involve families into education process effectively." The highest mean value was, however, in the dimension of content selection (*M* = 4.89), which was item 18, "I support children to speak Turkish accurately and well."

4.3. Results of Multiple Regression Analyses

Two hierarchical multiple regression analyses were conducted to predict the extent of curriculum implementation regarding content selection and learning process in early childhood education. The following predictor variables were entered into equation in four blocks in the same order for both analyses:

1. School related factors: class size, age of the students, school type, length of the program, and existence (nonexistence) of a teacher aide for the class;
2. Teacher demographics: teachers' years of experience and teachers' degree of education;
3. Teaching beliefs: constructivist teaching beliefs and traditional teaching beliefs;
4. Teacher self-efficacy beliefs: efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management.

In order not to increase the risk of committing Type I error, an alpha level of .025 was adapted to examine the findings of regression analyses.

4.3.1. Assumptions of Multiple Linear Regression Analysis

Assumptions of multiple linear regression for each dependent variable, to name the extent of curriculum implementation for content selection and the extent of curriculum implementation for learning process were evaluated on the basis of (1) sample size, (2) normality, linearity, homoscedasticity, and independence of residuals, (3) outliers, and (4) multicollinearity and singularity (Tabachnick & Fidell, 2007).

Firstly, sample size requirement was assessed considering the formulas suggested in Tabachnick and Fidell (2007). The minimum sample size suggested by the formula, $N \geq 50 + 8m$, where m stands for the number of independent variables, was 162. In the current study with 308 respondents and 14 independent variables, the number of

cases seemed to be satisfactory to meet the minimum requirement to conduct multiple linear regression.

Secondly, normality, linearity, homoscedasticity, and independence of residuals were checked by means of examining residuals scatterplot and normal probability plot. In the normality plot, a reasonable diagonal line was observed, providing evidence for the lack of major deviations from normality. In the scatterplot of the standardized residuals, the dots appeared to scatter, forming nearly a rectangular distribution with the most of the scores concentrated along 0 point, revealing a constant variance of the residuals and linearity in the data set. Moreover, Durbin-Watson value, providing evidence for the independence of the residuals if it is closer to 2 (Field, 2005), was 1.99 for content selection and 1.88 for learning process in this data set, meeting the assumption.

Thirdly, given that multiple linear regression is very vulnerable to outliers (Tabachnick & Fidell, 2007), the possibility of influential cases was inspected. Following the guideline proposed in Field (2005), primarily, the percent of cases with absolute standardized residual values above 2 and 2.5 was checked. When the dependent variable was the extent of curriculum implementation for content selection, the percent of cases with standardized residual values above 2 was less than 5% (3.7%) and the percent of cases with values above 2.5 was almost close to 1% (1.01%). Moreover, casewise diagnostics detected only 2 cases with standardized residual values above 3. Cook's distance ranged from .00 to .06, illustrating no value above 1 as desired. On the other hand, when the dependent variable was the extent of curriculum implementation for learning process, the percent of cases with standardized residual values above 2 was less than 5% (3.03%) and that above 2.5 was less than 1% (0.33%). There was only one case exceeding the standardized residual value of 3. Cook's distance was found to be within the required range, the largest value being less than 1 (0.13). Hence, the overall conclusion was the lack of outliers.

Finally, multicollinearity was ensured because highly correlated two or more predictors in a multiple regression model may result in extreme problems and inaccurate results in associational research (Leech, Barrett, & Morgan, 2005). Multicollinearity was herein evaluated by inspecting tolerance and Variance Inflation Factor (VIF) scores. Field (2005) cites the cut-off points to concern a problem with multicollinearity to be less than .10 for tolerance value and above 10 for VIF value. In the current model with the extent of curriculum implementation for both content selection and learning process, the tolerance statistics were all above .10 (between .18 and .91) and VIF statistics were well below 10 (between 1.10 and 5.59). Thus, it was concluded that there was no violation of multicollinearity assumption within this data set.

4.3.2. Intercorrelations among Predictor Variables and Their Relation to Dependent Variables

Before introducing combined impact of the predictor variables on the dependent variables, intercorrelations among them and also their relation to each dependent variable were examined. Table 4.3 illustrates the correlation of content selection and learning process with predictor variables and also the relationships among them.

Table 4.3
Intercorrelations for Content Selection, Learning Process, and Predictor Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Content selection	.52*	.51*	.44*	.38*	.08	.12*	.01	.02	.08	.04	-.07	.12*	.02	.03
Learning process	.50*	.49*	.40*	.32*	.10	.21*	-.01	.05	.06	.03	-.08	.21*	.05	-.23*
Predictor variables														
1. Efficacy for student engagement	-													
2. Efficacy for instructional strategies	.70*	-												
3. Efficacy for classroom management	.69*	.68*	-											
4. Constructivist teaching beliefs	.31*	.27*	.23*	-										
5. Traditional teaching beliefs	.06	.08	.10	.38*	-									
6. Teachers' years of experience	.15*	.11	.12*	.10	.13*	-								
7. Class size	-.12*	-.09	-.10	-.02	.04	-.02	-							
8. Class of children of younger than 5years old vs. class of children of 5-6 years old	-.01	.05	-.01	.01	.03	-.19*	-.04	-						
9. Independent preprimary school vs. elementary school	-.06	.06	-.00	-.04	-.09	-.43*	.16*	.41*	-					
10. Full-day program vs. half-day program	-.00	.06	.03	-.04	-.09	-26*	.10	.29*	.78*	-				
11. Existence of a teacher aide for the class vs. nonexistence of a teacher aide for the class	-.11	-.12*	-.01	-.03	.01	.13*	.15*	-.07	-.12*	-.06	-			
12. Associate degree vs. others	.14*	.08	.13*	-.04	.04	.46*	-.00	-.02	-.19*	-.20*	.02	-		
13. Open University degree vs. others	-.02	.02	.04	-.02	-.02	-.13*	-.04	.20*	.11	.06	.01	-.11*	-	
14. Bachelor of Science degree vs. others	-.13*	-.07	-.13*	.05	.05	-.30*	.06	-.07	.11	.13*	.02	-.75*	-.41*	-

*$p < .025$

Here included is a brief description of only statistically significant relationships among variables and their direction. Firstly, a positive and significant association was observed between the extent of curriculum implementation as regards content selection and three dimensions of teacher self-efficacy, constructivist teaching beliefs, teachers' years of experience, and having an Associate degree. In other words, results indicated that early childhood teachers were more likely to implement early childhood curriculum in terms of content selection when they had a higher sense of self-efficacy, favored more constructivist teaching beliefs, had more teaching experience, and held an Associate degree.

Secondly and similarly, all three dimensions of teacher self-efficacy beliefs, constructivist teaching beliefs, teachers' years of experience, and having an Associate degree led to a positive and significant correlation with the extent of curriculum implementation as regards learning process. However, having a Bachelor of Science degree was found to be significantly and negatively associated with it. In other words, early childhood teachers were more likely to implement early childhood curriculum in terms of learning process when they had a higher perception of self-efficacy, favored more constructivist teaching beliefs, had more teaching experience, and also owned an Associate degree. Nonetheless, early childhood teachers who were graduated from four year undergraduate programs were less likely to implement it.

Thirdly and finally, considering intercorrelations among independent variables, firstly noticed was the positive and significant correlation among factors determining teacher self-efficacy beliefs. In addition, constructivist teaching beliefs were significantly and positively associated with all three factors of teacher self-efficacy as well as with traditional teaching beliefs. Moreover, teachers' years of experience formed a positive and significant correlation with efficacy for student engagement, efficacy for classroom management, and traditional teaching beliefs. Class size was, moreover, determined to be significantly and negatively related with efficacy for student engagement. It was, in addition, found to be significantly and positively

associated with the school type, independent preprimary school and existence of a teacher aide for the class. Additionally, in relation to teachers' degree of education, having an Associate degree was recognized to be significantly and positively associated with efficacy for student engagement and efficacy for classroom management, while the direction of these associations for teachers who had a Bachelor of Science degree was significantly negative for efficacy for student engagement and efficacy for classroom management.

4.3.3. Predictors of the Extent of Curriculum Implementation Regarding Content Selection

When the influence of predictor variables on the dependent variable was investigated hierarchically, in the first step, school related factors did not predict the extent of curriculum implementation with respect to content selection in early childhood education, $F(5, 295) = 0.58$, $p > .025$. In the second step, after school related factors were controlled, teacher demographics were also non-significant, $F(9, 291) = 1.542$, $p > .025$. In other words, school related factors defined in this study as class size, age of the students, school type, length of the program, and existence (nonexistence) of a teacher aide for the class and as well teacher demographics like teachers' years of experience and teachers' degree of education did not result in a significant contribution to the extent early childhood teachers implemented content selection.

In the third step, after controlling for the effect of school related factors and teacher demographics, teaching beliefs significantly predicted the extent of curriculum implementation regarding content selection, $F(11, 289) = 6.23$, $p < .025$. This model explained an additional 15% of the variance in the implementation of content selection. However, only constructivist teaching beliefs resulted in a significant contribution to this result at the alpha level of .025, uniquely making up 14% of the variance, while traditional teaching beliefs did not influence it significantly. In other words, it indicated that early childhood teachers who favored more constructivist

teaching beliefs were more likely to implement early childhood curriculum in terms of content selection

In the last step, teacher self-efficacy beliefs, after controlling for the effect of school related factors, teacher demographics, and teaching beliefs, were not only significant, $F(14, 286) = 12.84$, $p < .025$, but also better, explaining an additional 19% of the variance in the extent of the implementation of content selection. Among teacher self-efficacy variables, efficacy for student engagement and efficacy for instructional strategies were significant at the alpha level of .025, each making a unique contribution of 2% to the total *R* squared, while efficacy for classroom management did not influence it significantly. It in that way addressed that early childhood teachers with a higher sense of self efficacy for student engagement and instructional strategies implemented the curriculum to a higher extent as regards content selection.

Overall, results of hierarchical regression analysis indicated that more than a third of the variability, to name 39% of the variance in the extent of curriculum implementation in terms of content selection can be accounted for by school related factors, teacher demographics, teaching beliefs, and teacher self-efficacy beliefs. To Cohen, this is a large effect, $R^2 > 0.35$ (as cited in Murphy & Myors, 2004). Among the predictors, three predictor variables, namely efficacy for student engagement, efficacy for instructional strategies, and constructivist teaching beliefs were significant. Considering the semi-partial correlations, constructivist teaching beliefs led to the strongest unique contribution to explaining the dependent variable, alone accounting for 14% of the variance. Teacher efficacy for student engagement and for instructional strategies, on the other hand, made a unique contribution of 2% to the total *R* squared. Table 4.4 indicates the findings resulted from hierarchical multiple regression of variables on the extent of curriculum implementation with respect to content selection.

Table 4.4

Summary of Hierarchical Regression Analysis of Content Selection by School Related Factors, Teacher Demographics, Teaching Beliefs, and Teacher Self-Efficacy Beliefs

Variable	*B*	*SEB*	*B*	sr^2	*R*	R^2	ΔR^2
Step 1: School related factors					.01	.01	.01
Class size	.00	.00	.01	.00			
Class of children of younger than 5 years old vs. class of children of 5-6 years old	-.02	.05	-.02	.00			
Independent preprimary school vs. elementary school	.07	.06	.10	.00			
Full-day program vs. half-day program	-.02	.06	-.03	.00			
Existence of a teacher aide for the class vs. nonexistence of a teacher aide for the class	-.04	.04	-.06	.00			
Step 2: Teacher demographics					.21	.05	.04
Teachers' years of experience	.01	.00	.16	.02			
Associate degree vs. others	.05	.11	.06	.00			
Open university degree vs. others	.03	.12	.02	.00			
Bachelor of Science degree vs. others	-.02	.01	-.02	.00			
Step 3: Teaching beliefs					.44	.19*	.15
Constructivist teaching beliefs	.22	.03	.41*	.14			
Traditional teaching beliefs	-.01	.02	-.07	.00			
Step 4: Teacher self-efficacy beliefs					62	.39*	.19
Efficacy for student engagement	.09	.03	.24*	.02			
Efficacy for instructional strategies	.08	.02	.24*	.02			
Efficacy for classroom management	.02	.02	.05	.00			

Note. *$p < .025$

4.3.4. Predictors of the Extent of Curriculum Implementation Regarding Learning Process

When the results of hierarchical multiple regression analysis were scrutinized in order to explore the influence of variables on the implementation of learning process, in the first step, school related factors did not predict it, $F(5, 295) = 0.63$, $p > .025$. That is, none of the school related factors, namely class size, age of the students, school type, length of the program, and existence (nonexistence) of a teacher aide for the class made a significant contribution to explaining the curriculum implementation regarding learning process.

In the second step, when teacher demographics were entered into the equation after controlling for the effect of school related factors, the model was, however, significant, $F(9, 291) = 4.07$, $p < .025$. This model explained an additional 10% of the variance in the extent of curriculum implementation as regards learning process. Among the variables, only teachers' years of experience, uniquely making up 4% of the variance, significantly explained the extent of curriculum implementation for learning process, while teachers' degree of education did not have a significant influence on it. That is, the extent early childhood teachers implemented learning process increased as their years of teaching experience increased.

In the third step, after controlling for the influence of school related factors and teacher demographics, teaching beliefs significantly predicted the model, $F(11, 289) = 7.06$, $p < .025$, accounting for an additional 10% of the variance in the data set. Only constructivist teaching beliefs made a significant contribution to this model, uniquely explaining 9% of the variance, whereas traditional teaching beliefs did not influence it significantly. This result, in other words, indicated that early childhood teachers were more likely to implement early childhood curriculum in terms of learning process when they endorsed more constructivist teaching beliefs.

In the last step, teacher self-efficacy beliefs, after controlling for the influence of school related factors, teacher demographics, and teaching beliefs, significantly predicted the model, $F(14, 286) = 12.66$, $p < .025$. It explained an additional 17% of the variation in curriculum implementation in terms of learning process. Among teacher self-efficacy variables, efficacy for student engagement and efficacy for instructional strategies were significant at the alpha level of .025, each uniquely contributing 3% to the total *R* squared, whereas efficacy for classroom management did not influence it significantly. That is, efficacious early childhood teachers in student engagement and instructional strategies implemented learning process to a higher extent.

Overall, results of hierarchical regression analysis indicated that the linear combination of school related factors, teacher demographics, teaching beliefs, and teacher self-efficacy beliefs accounted for 38% of the variance in the extent of curriculum implementation in terms of learning process. According to Cohen, this is a large effect, $R^2 > 0.35$ (as cited in Murphy & Myors, 2004). Four of these fourteen predictor variables, namely efficacy for student engagement, efficacy for instructional strategies, constructivist teaching beliefs, and teachers' years of experience resulted in a statistically significant contribution at the alpha level of .025 to the extent early childhood teachers implemented learning process. Given their semi-partial coefficients, constructivist teaching beliefs made the strongest unique contribution to explaining the dependent variable, alone accounting for 9% of the variance, followed by teachers' years of experience (4%), efficacy for student engagement (3%), and efficacy for instructional strategies (3%). Table 4.5 presents the summary of hierarchical multiple regression of the predictors on the extent of curriculum implementation with respect to learning process.

Table 4.5

Summary of Hierarchical Regression Analysis of Learning Process by School Related Factors, Teacher Demographics, Teaching Beliefs, and Teacher Self-Efficacy Beliefs

Variable	*B*	*SEB*	*β*	sr^2	*R*	R^2	ΔR^2
Step 1: School related factors					.10	.01	.01
Class size	.00	.00	-.00	.00			
Class of children of younger than 5 vs. class of children of 5-6 years old	.03	.05	-.02	.00			
Independent preprimary school vs. elementary school	.06	.08	.08	.00			
Full-day program vs. half-day program	-.04	.08	-.04	.00			
Existence of a teacher aide for the class vs. nonexistence of a teacher aide for the class	-.06	.05	-.07	.01			
Step 2: Teacher demographics					.33	.11*	.10
Teachers' years of experience	.01	.00	.26*	.04			
Associate degree vs. others	-.01	.13	-.01	.00			
Open university degree vs. others	-.03	.15	-.02	.00			
Bachelor of Science degree vs. others	-.17	.12	-.18	.01			
Step 3: Teaching beliefs					.46	.21*	.10
Constructivist teaching beliefs	.23	.04	.33*	.09			
Traditional teaching beliefs	-.02	.03	-.03	.00			
Step 4: Teacher self-efficacy beliefs					62	.38*	.17
Efficacy for student engagement	.13	.04	.26*	.03			
Efficacy for instructional strategies	.10	.03	.24*	.03			
Efficacy for classroom management	-.01	.03	-.02	.00			

Note. *$p < .025$

CHAPTER V

DISCUSSION

The last chapter aims to explain the meaning of findings as regards predictors of the extent of curriculum implementation in early childhood education. First, major results of the study are succinctly summarized. Next, their meaning is interpreted in relation to findings of similar studies. Alternative explanations are also provided to make conclusions from them. Finally, implications of the study for practice are discussed, followed by recommendations for future research.

5.1. Summary of the Results of the Study

The current study essentially scrutinized the influence of school related factors (class size, age of the students, school type, length of the program, and existence of a teacher aide for the class), teacher demographics (teachers' years of experience and teachers' degree of education), teaching beliefs (constructivist teaching beliefs and traditional teaching beliefs) and teacher self-efficacy beliefs (efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management) on the extent early childhood teachers implemented current curriculum in relation to content selection and learning process.

The results descriptively figured out that early childhood teachers had a positive perception of their capabilities to engage, instruct, and manage their students as they held a belief in that they could on average make above "a quite bit" influence on them. Moreover, they believed more in constructivist teaching than traditional teaching though they did not reject traditional teaching beliefs at all. Besides, the extent of curriculum implementation was captured to be higher than "often" even though it was identified to be higher for content selection than learning process.

Given the influence of ordered set of predictors, school related factors alone influenced neither content selection nor learning process in early childhood curriculum implementation. In addition, teacher demographics were only significant for the extent of curriculum implementation as regards learning process as early childhood teachers practiced the constructivist learning process to a higher extent when they were more experienced. Moreover, teaching beliefs and teacher self-efficacy beliefs uniquely and considerably explained the extent of curriculum implementation for both content selection and learning process. After controlling for the effect of school related factors and teacher demographics, early childhood teachers who endorsed more constructivist teaching beliefs and who were with a higher sense of self-efficacy for student engagement and instructional strategies were more likely to implement the premises of national early childhood curriculum.

5.2. Conclusions from the Results of the Study

To begin with, it is a highly promising result that early childhood teachers reported that they implemented constructivist curriculum to a high extent, consistent with the finding of Uzun (2007), revealing that those in the sample of Malatya practiced 2002 curriculum, which was also constructivist, to a large degree. Accordingly, self-reports of early childhood teachers might indicate that they tend to perceive themselves to fulfill their roles as constructivist teachers in their classes. As a result of their high fidelity to curriculum, they can, therefore, be considered to prevent the gap between the written and the implemented curriculum.

This finding in a way may be interpreted to reflect real phenomenon, assuming that Turkish early childhood teachers presently implement the curriculum as desired; in contrast, main trend portrays little or no use of educational innovations (Curtner-Smith, 1999; Fullan, 1995; Gordon & Patterson, 2008; Herron, 1971). It may also indicate that early childhood teachers show high fidelity to current curriculum despite several barriers they are likely to face in their classes as illustrated in the literature (e.g., Düşek, 2008; Erden, 2010; Kandır, Özbey, & İnal, 2009). In another

way, however, high level of use of the curriculum can be considered to be the mere illusion of the participants as they may have reported what they desired to do rather than what they actually did in their classes.

In addition, the finding that early childhood teachers perceived themselves to be highly efficacious is noticeable given the improving role of having a high sense of teacher self-efficacy on educational practices and outcomes as prevalently discussed in the literature (e.g., Bandura, 1993; Berman & McLaughlin, 1977; Brown, 2005; Chung, Marvin, & Churchill, 2005; Gibson & Dembo, 1984; Gu & Day, 2007; Guo, Piasta, Justice, & Kaswravek, 2010; Guskey & Passaro, 1994; Kim & Kim, 2010; Tschannen-Moran & Woolfolk Hoy, 2001; Tucker et al., 2005). So called teacher effectiveness commonly associated with teacher self-efficacy beliefs in the literature becomes strongly evident in the current study in the extent of the curriculum implementation of early childhood teachers, for those with a higher sense of self-efficacy were considerably more likely to practice the premises of constructivist curriculum with respect to content selection and learning process in early education.

In the light of the social cognitive theory of Bandura (1997), this may be mostly because of the fact that efficacious early childhood teachers would be more goal-oriented, committed to achievement, hard workers, and resilient and so more efficacious to respond to the demands of a constructivist curriculum. For, constructivist education, basically grounded on the consideration of active student participation in educational decisions and processes, flexible arrangement of class environment, integrated teaching, process-oriented evaluation, and family involvement, appears to demand a highly capable teacher who can engage, instruct, and manage students effectively.

Moreover, considering positive and significant relation between constructivist teaching beliefs and teacher self-efficacy beliefs, similar to finding of Gürbüztürk and Şad (2009), it is also possible to hypothesize that teacher self-efficacy beliefs contribute to curriculum implementation of the teachers by cultivating constructivist

teaching beliefs in them. McMullen (1999) also supported this argument, explaining that teachers perceiving themselves to be highly competent may be more innovative and risky in their teaching and so more likely to accept developmentally appropriate practices, which in turn may lead to more developmentally appropriate practices in their classes.

Nevertheless, not all dimensions of teacher self-efficacy, but particularly efficacy of student engagement and efficacy for instructional strategies made a considerable impact on the extent of curriculum implementation of early childhood teachers, whereas efficacy for classroom management did not have a significant influence on it. The basic explanation for this result might be that classroom management requires teacher qualifications substantially independent from those for curriculum implementation. To elaborate, teachers as the effective classroom managers seem to be heavily concerned with achieving "withitness, overlapping, continuity and momentum in the class, and challenge and variety in the assignments" (Brophy, 1985, p. 236) more with the purpose of preventing and handling student disruptive behaviors and maximizing instructional time, while teachers as the curriculum implementers are broadly interested in the delivery of learning experiences for the students more with the purpose of changing their knowledge, attitudes, and values (Ornstein & Hunkins, 2004). Therefore, based on these definitions, it can be considered that teachers who are efficacious as classroom managers may not be necessarily effective curriculum implementers as curriculum implementation noticeably goes beyond the organization and management of the class.

Moreover, in relation to teaching beliefs, agreement of early childhood teachers more with constructivist beliefs indicates that early childhood teachers today are fortunately accountable for practicing what they preach considering the fact that current early childhood curriculum is also grounded on the basic premises of constructivism. The acceptance of constructivist teaching beliefs is also in congruence with the first results of TALIS (Teaching and Learning International Survey), which inspected teachers in most countries including Turkey to strongly

endorse constructivism rather than direct transmission (OECD, 2009). Endorsement with constructivist beliefs might be explained by the grade level early childhood teachers teach since Vartuli (1999) discussed that practices became less developmentally appropriate by increase in the grade level due to increasing parental and administrative pressures and curricular and academic demands in the upper grades.

Furthermore, this acceptance seems to be a paramount strength for the achievement of intended curriculum change given the fact that teachers have the tendency to decide and act based on their existing beliefs (Fang, 1996; Haney, Lumbe, & Czerniak, 2002; Herron, 1971, Kagan, 1992, Lewin & Grabbe, 1945; Pajares, 1992; Wood & Bennett, 2001). Considering the literature demonstrating this harmonious link between teacher beliefs and teacher practices (e.g., Kagan & Smith, 1988; Lee, Baik, & Charlesworth, 2006; Maxwell, McWilliam, Hemmeter, Ault, & Schuster, 2001; McMullen et al., 2005; McMullen et al., 2006; Mitchell & Hedge, 2007; Murphy, 2004; Rivilland, 2007; Spodek, 1988; Stipek & Byler, 1997; Vartuli, 1999; Wang, Elicker, McMullen, & Mao, 2008), that's why it is herein consistently considered that early childhood teachers who believed more in constructivism were as well found to be considerably more likely to implement constructivist curriculum regarding content selection and learning process. That is, early childhood teachers in this study provided further evidence for a correspondence between the beliefs and actions rather than a state of inconsistency.

Furthermore, though traditional beliefs did not contribute to curriculum implementation of early childhood teachers as expected, what still remains to be true is that they are still prevalent among teachers, which may indicate that belief system of teachers may become so complex that it is likely to be composed of various ideas which may compete with each other occasionally. The positive and considerable relation captured herein between constructivist and traditional teaching beliefs can be explained by the study of Cheung and Wong (2002), similarly demonstrating that teachers valued all curriculum orientations regardless of their theoretically

contradicting assumptions, underlying that it would be certainly misleading to consider them as favoring only one curriculum orientation. Thus, in a sense, early childhood teachers' agreement with both constructivist and traditional teaching beliefs in the current study is the manifestation of eclecticism in their mind.

What is more is the considerable and positive influence of teachers' years of experience on the extent of curriculum implementation particularly regarding learning process. At the first look, this result seems to be interesting considering that some studies indicated more experienced early childhood teachers to support more traditional beliefs (Buchanan, Burts, Bidner, White, & Charlesworth, 1998; Vartuli, 1999), which was also true herein. This is mainly based on the argument that newer teachers have been exposed to constructivist principles more frequently, while teachers with higher experience have been socialized more in traditional educational settings (Buchanan et al., 1998). Nonetheless, participating early childhood teachers in this study already reported that they often kept up with the recent publications in the field of early childhood education, assumed to remove so called disadvantage of experienced early childhood teachers to get familiar with constructivist education. More importantly, it seems that they make meaning of constructivism better than novice teachers as reflected on their higher extent of curriculum implementation in terms of learning process.

That more experienced teachers were more likely to practice the constructivist learning process might be meaningful given that they had higher self-efficacy for student engagement and classroom management compared to teachers with less experience. As teachers with higher years of teaching experience may have greater chance to considerably improve their perception about how much they are capable of engaging and managing students fundamentally by means of mastery experiences, vicarious experiences, and verbal persuasions as suggested by Bandura (1997), they might be more efficacious to practice the curriculum. Similarly, Fives and Buehl (2010) indicated that teachers with 10 or more years of experience were considerably more efficacious, while Klassen and Chiu (2010) demonstrated this positive

influence to be true until 23 years of teaching. Tschannen-Moran and Woolfolk Hoy (2007) indicated this difference between novice and experienced teachers.

In addition, difference between experienced and novice teachers may also be related with teachers' degree of education since experienced teachers in the current study were more likely to have Associate degrees, which made substantial contribution to curriculum implementation rather than four years of education or above. This result appears to contrast with the logical assumption that teachers with higher educational degrees would be of higher quality. Nevertheless, there is not sound evidence in the literature indicating the association between teachers' degree of education and educational quality (Early et al., 2007; Goldhaber & Brewer, 2000; Wayne & Youngs, 2003). Therefore, considering that the field of education has a strong practical dimension, experience might wash out the influence of degree of education on teacher practices and act as the best teacher for early childhood teachers, equipping them with a broad range of skills, knowledge, and behaviors which cannot be solely acquired via formal education.

In conclusion, the results of current study once again underlined the key role of teachers for the effectiveness of curriculum implementation as discussed in the literature broadly (e.g., Coenders, Terlouw, & Dijikstra, 2008; Cowley & Williamson, 1998; Drake & Sherin, 2006; Elizondo-Montemayor, Hernanez-Escobar, Ayala-Aguirre, & Aguilar, 2008; Fernandez, Ritchie, & Barker, 2008; Fullan, 1991; Heron, 1971; Johns, 2002; Timperley & Parr, 2005). It is of high significance of this study that the influence of teacher related characteristics like teacher beliefs and years of experience considerably surpass the influence of such school-related factors as class size, length of the program, existence of a teacher aide for the class, and the school type. What goes in the mind of the teachers, which may be shaped by their experiences and their work atmosphere can then strongly explain one part of the story regarding curriculum implementation in early childhood education.

5.3. Implications for Practice

This study at the core informs educational practice to improve curriculum implementation in early childhood education by introducing several characteristics likely to influence it. It in general demonstrates that in order to actualize the aims of current curriculum, teachers should be the first and the foremost source of concern as educational success is more likely to be a dream without or despite them.

Thereby, teachers are considered to make up the most precious source for educational investments. In particular, this study shows that educational politics need to reflect on teacher self-efficacy beliefs, teaching beliefs, and teachers' years of experience as they considerably influence teachers' practice of current curriculum in their classes.

First and foremost, this study implies for the practice that teacher beliefs should lie at the heart of educational reforms to fulfill their intentions as it was indicated that beliefs make difference in the practices of early childhood teachers in terms of curriculum implementation. It is clear that any curriculum which does not correspond to teaching beliefs of teachers would be less likely to be implemented, resulting in the failure of educational investments. Particularly, it is considered that fidelity to curriculum implementation currently would increase by increasing early childhood teachers' sense of self-efficacy for student engagement and instructional strategies, and their endorsement with constructivist teaching beliefs.

Therefore, inspecting what teachers indeed believe about their capabilities and teaching, and as well consistently to intervene in them may considerably renovate educational practice in terms of curriculum implementation. One of the aims of teacher training programs and in-service training programs then should be to change or reinforce teacher beliefs. For the desired implementation of the current curriculum, the target group for the intervention programs both in-service and pre-service should be primarily early childhood teachers with dominantly traditional

teaching beliefs and a lower sense of self-efficacy. Moreover, given that teacher beliefs do not always appear in the practice, it also becomes essential to develop and utilize strategies to improve the abilities of in-service and pre-service early childhood teachers to behave consistently with their constructivist beliefs.

Moreover, educational practice should concern about the difference between experienced and novice early childhood teachers and attempt to decrease its effect on teaching process in order to accomplish desired curriculum implementation in terms of learning process. It is considered that improving school experiences of candidate teachers in teacher training programs in terms of both quantity and quality can provide them with more and better opportunities for acquiring first-hand teaching experiences before graduation and maybe so nurture their sense of self-efficacy and their future practices. Given the contribution of practical knowledge to teacher quality, teacher education programs might be considered to be reconstructed to balance the needs of pre-service teachers for both theory and practice. Maybe in this way, undergraduate teacher education programs can make difference in pre-service teachers, which was unexpectedly found to be true for associate programs. Moreover, in the service, novice early childhood teachers should effectively and continuously be supported by their more experienced colleagues to wash out the effect of teaching experience.

5.4. Recommendations for Future Research

This study is likely to answer several questions regarding the factors influencing curriculum implementation in early childhood education in the province of Ankara, Turkey. However, it also opens new areas of curiosity to explore in the future studies like the following:

Firstly, curriculum implementation of early childhood teachers, found to be high herein, was assessed based on self-reports of the teachers. However, to ensure the validity of these reports, it is recommended that future studies involve classroom

observations in their design to describe what teachers exactly do in their classes and then come to a decision if it is indeed compatible with what the constructivist curriculum proposes. That is, studies in the future should continue to deal with curriculum implementation of early childhood teachers with the application of various and multiple research methods. Moreover, considering that the sample here is limited to Ankara, it may be important to repeat this study with different samples from Turkey to improve generalizability of the results.

Secondly, early childhood teachers in the current study did not completely reject traditional teaching beliefs. It indicates that teaching beliefs of early childhood teachers should further be studied to explore in what areas they seem to endorse traditional teaching and in what areas they are likely to favor constructivist teaching. Future qualitative studies are then required to provide an in-depth portrayal of the beliefs of early childhood teachers about teaching to differentiate between their traditional and constructivist ideas of education. Moreover, the next studies may go one step further by investigating the sources for the construction of those teaching beliefs.

Thirdly, herein experienced teachers were discussed to influence curriculum implementation positively. Considering that they had mostly associate degrees, it was speculated that experience can even erase the impact of teachers' degree of education on the practice by improving teachers' sense of self-efficacy, which looks for the confirmation of the future studies. As an extension of this topic, given that early childhood education today is a profession composed of teachers coming from various degrees of education, there seems to be a need to investigate the influence of different type of teacher training programs on curriculum implementation and how the teacher experience interacts with it subsequently.

As a final recommendation, future studies on curriculum implementation in early childhood education should consider the influence of many other variables which were not included herein as the scope of this study answers only to a small part of

this complex phenomenon. The influence of the characteristics of the curriculum, educational organizations, strategies, and the socio-political culture on curriculum implementation in early childhood education, for instance, may be included in the scope of future studies. Qualitative studies in addition to quantitative studies on these issues can provide a sound theory of curriculum implementation in early childhood education, explaining all explicit and implicit dynamics shaping its form.

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APPENDICES

APPENDIX A

Sample Items from Data Collection Instrument

BÖLÜM I
Okul Öncesi Eğitim Programı Uygulama Anketi

YÖNERGE: Lütfen, uygulamalarınızın sıklığını en iyi tanımlayan seçeneği, ilgili rakamı işaretleyerek belirtiniz.

		Hiçbir zaman	Nadiren	Bazen	Sıklıkla	Her zaman
1.	Etkinliklerde çocukların bireysel farklılıklarını dikkate alırım.	1	2	3	4	5
3.	Etkinliklere başlarken çocukların bilgi düzeylerini göz önünde bulundururum.	1	2	3	4	5
4.	Etkinliklerde çocukların deneyerek-yaparak öğrenmesine fırsat tanırım.	1	2	3	4	5
8.	Etkinlikleri hazırlarken aile ve içinde bulunulan çevrenin özelliklerini dikkate alırım.	1	2	3	4	5
15.	İlgi ve motivasyonlarına göre çocuklara etkinliklerde farklı seçenekler sunarım.	1	2	3	4	5
17.	Amaçlarıma ulaşmak için konuları etkinliklerde bir araç olarak kullanırım.	1	2	3	4	5
21.	İlgi köşeleri oluşturarak çok amaçlı ve çeşitli şekilde hazırladığım bir eğitim ortamında etkinlikleri gerçekleştiririm.	1	2	3	4	5
22.	Etkinliklerde çocukların işbirliği ve dayanışma içerisinde çalışmalarını sağlarım.	1	2	3	4	5
25.	Etkinliklerde çocukların günlük yaşantılardan yararlanırım.	1	2	3	4	5

BÖLÜM II
Öğretmen İnançları Anketi I

YÖNERGE: Lütfen, görüşünüzü en iyi tanımlayan seçeneği, ilgili rakamı işaretleyerek belirtiniz.

		Yetersiz		Çok az yeterli		Biraz yeterli		Oldukça yeterli		Çok yeterli
1.	Etkinlikleri olumsuz yönde etkileyen davranışları kontrol etmeyi ne kadar sağlayabilirsiniz?	1	2	3	4	5	6	7	8	9
4.	Öğrencilerin öğrenmeye değer vermelerini ne kadar sağlayabilirsiniz?	1	2	3	4	5	6	7	8	9
6.	Öğrencilerin sınıf kurallarına uymalarını ne kadar sağlayabilirsiniz?	1	2	3	4	5	6	7	8	9
9.	Farklı değerlendirme yöntemlerini ne kadar iyi kullanabilirsiniz?	1	2	3	4	5	6	7	8	9
12.	Sınıfta farklı öğretim yöntemlerini ne kadar iyi uygulayabilirsiniz?	1	2	3	4	5	6	7	8	9

BÖLÜM III
Öğretmen İnançları Anketi II

YÖNERGE: Lütfen, görüşünüzü en iyi tanımlayan seçeneği, ilgili rakamı işaretleyerek belirtiniz.

		Kesinlikle katılmıyorum	Katılmıyorum	Kısmen katılmıyorum	Kısmen katılıyorum	Katılıyorum	Kesinlikle katılıyorum
1.	Eğitim ve öğretim etkinliklerini planlamanın en etkili yollarından biri öğrencilerin görüşlerini dikkate almak olmalıdır.	1	2	3	4	5	6
3.	Sınıf panoları öğrencilerle birlikte hazırlanmalıdır.	1	2	3	4	5	6
4.	Öğrenciler ne öğrenmeleri gerektiğini bilemeyecekleri için, programla ilgili seçimleri onlar adına öğretmen yapmalıdır.	1	2	3	4	5	6
5.	Öğrenciler ortaya çıkarttıkları ürünlerin sonuçlarına göre değerlendirilmelidir.	1	2	3	4	5	6
13.	Veliler sınıf içi çalışmalarda gönüllü olmaya ya da ne zaman isterlerse sınıfı ziyaret etmeye teşvik edilmelidir.	1	2	3	4	5	6

BÖLÜM IV

Kişisel Bilgi Formu

YÖNERGE: Lütfen, aşağıda belirtilen sorulara cevap veriniz.

2. Kaç yıldır öğretmenlik yapıyorsunuz?.....
3. Sınıfınızda kaç öğrenci var?.....
5. Öğretmeni olduğunuz çocuklar çoğunlukla hangi yaş grubundadır?

   ☐5-6 yaşından küçük ☐5-6 yaşında
6. Görev yaptığınız okulun türü:

   ☐ İlköğretim Okulu ☐Bağımsız Anaokulu

   ☐ Diğer:……
7. Okulunuzun program süresi nedir? ☐Tam gün ☐Yarım gün
8. En son aldığınız eğitim dereceniz:

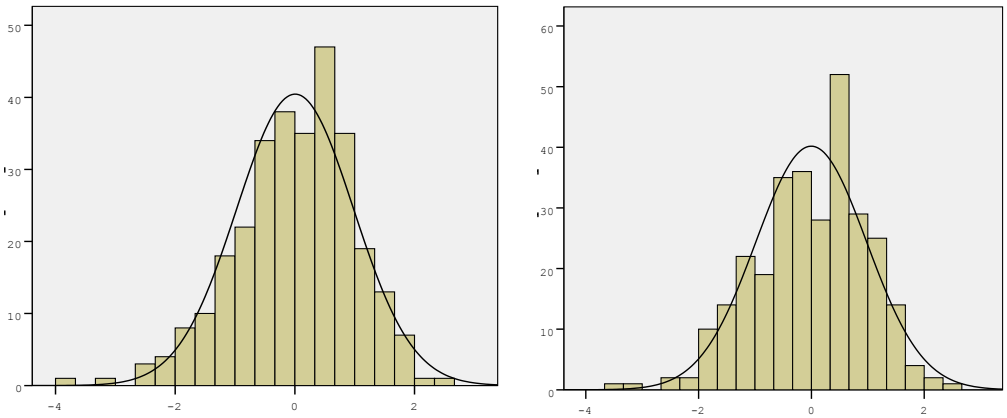
   ☐Ön lisans ☐Açık üniversite (4 yıllık) ☐Lisans

   ☐Yüksek Lisans ☐Doktora

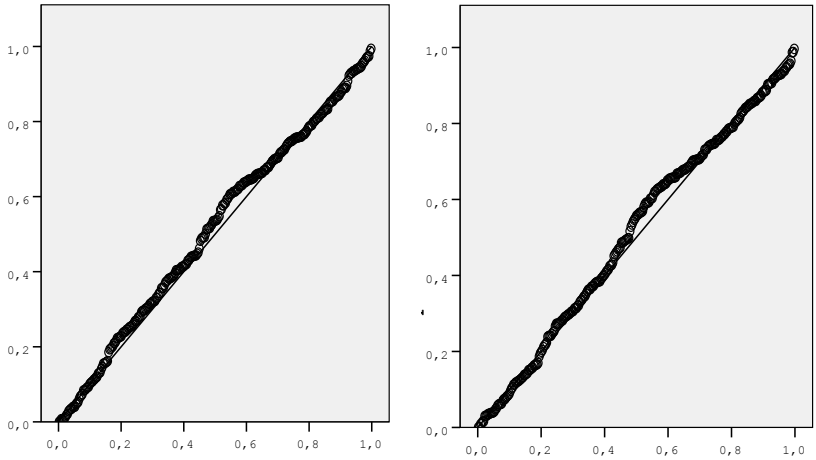
APPENDIX B

Histograms, Normal P-P Plots and Scatterplots for the Dependent Variables

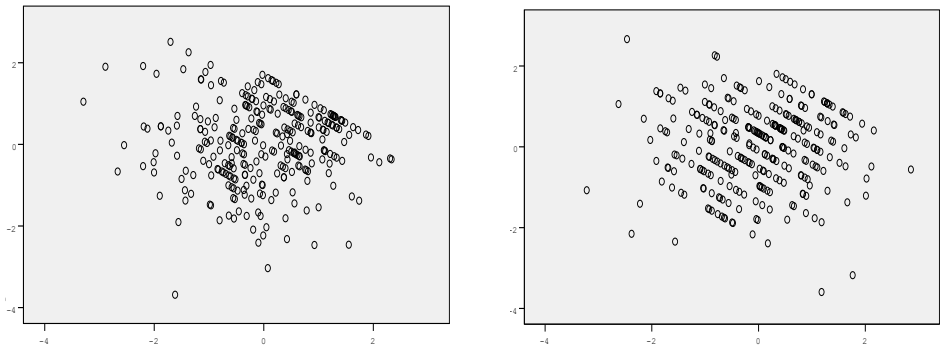
Content Selection Learning Process



Histogram



Normal P-P Plot of Regression



Residuals Scatterplot