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An Investigation of Turkish Early Childhood Teachers' Self-Reported Beliefs and Practices Regarding Assessment*

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Abstract

This paper presents an examination of Turkish early childhood education teachers' self-reported beliefs and practices in relation to classroom assessment, to determine their relationship to the teachers' educational and professional backgrounds. A survey method was applied to 194 teachers in private and public early childhood education centers serving children three to six years located in Ankara, Turkey. Results revealed that the early childhood education teachers' beliefs were correlated with their classroom practices which means early childhood teachers practice what they believe in terms of developmentally appropriate practices. Having an undergraduate or post graduate degree and years of teaching experience, were found to affect the teachers' self-reported beliefs as well as their self-reported classroom practices. Moreover, it means that a strong positive correlation between the early childhood education teachers practice scores and the level of education, meaning the higher the level the higher practices scores they received. Thus, it means the more early childhood education content knowledge is gained through obtaining a higher level of education, the more the greater the appropriate assessment practices the teachers implement. Also the amount of teaching experience was found to be significant in their self-reported beliefs and practices and this means that teachers' years of teaching experience may influence their beliefs and practices.

Keywords: early childhood education, assessment, teachers' beliefs, teachers' practices

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Okul Öncesi Öğretmenlerinin Değerlendirmeye Yönelik Görüş ve Uygulamalarının İncelenmesi

Öz

Bu araştırma, çalışan okul öncesi öğretmenlerinin, değerlendirmeye yönelik belirttikleri görüşleri ve gerçekleştirdikleri uygulamaların, kendi öğretmenlik felsefeleri, uygulamaları, eğitim geçmişleri ve profesyonel geçmişleriyle ilişkilerini tespit etmek amacıyla gerçekleştirilmiştir. Kullanılan ölçek Ankara'daki özel ve devlete bağlı okul öncesi eğitim kurumlarında çalışan toplam 194 öğretmene uygulanmıştır. Katılımcılar; 3-6 yaş aralığındaki çocuklara yönelik eğitimin verildiği okul öncesi eğitim kurumlarında çalışan, farklı eğitim ve profesyonel geçmişleri olan öğretmenlerden oluşmaktadır. Araştırmanın sonucunda; okul öncesi öğretmenlerinin değerlendirmeye yönelik görüşleri ile sınıf içerisindeki değerlendirme uygulamaları arasında bir bağ olduğu ve çalışmaya katılan öğretmenlerin eğitim düzeylerindeki yüksekliğin ise gerçekleştirdikleri uygulamalarda fark yarattığı tespit edilmiştir. Araştırmada ulaşılan bu sonuç ile öğretmenlerin okul öncesi eğitimi hakkında ne kadar fazla bilgiye sahip olduklarını, uyguladıkları değerlendirme yöntemleri ile ortaya koydukları saptanmıştır. Ayrıca çalışmaya katılan okul öncesi öğretmenlerinin öğretmenlik tecrübelerinin, onların değerlendirme konusundaki inanç ve uygulamalarını olumlu yönde etkilediği sonucuna ulaşılmıştır. Son olarak, sınıf içerisindeki öğretmen sayısının, öğretmenlerin değerlendirmeye dair görüşlerini ve sınıf içerisindeki değerlendirme uygulamalarını etkileyen diğer bir faktör olduğu tespit edilmiştir.

Anahtar Sözcükler: okul öncesi eğitim, değerlendirme, öğretmenlerin görüşleri, öğretmenlerin uygulamaları

Introduction

Early childhood is a period in a child's life when their skills, knowledge and capabilities are developing rapidly. To ensure that this development is fostered, children in this period need to be scaffolded, supported and observed in the most effective way. Thus, an early childhood teacher should know how, when, where and why a child ought to be taught and assessed. In order for a teacher to gain information about the child's progress and thus whether there should be any changes to the way in which lessons are delivered, the teacher needs to apply appropriate assessments. In early childhood education the main assessment techniques are basically categorized as formal and informal. Formal assessment refers to standardized tests that allow educators to compare an individual child's performance in a test to the performance of other children who have similar characteristics (Kagan & Shepard, 1998). As stated by Taylor and Nolen (2008), formal assessment techniques should be used with young children only when needed since they focus on the product rather than process and only deal with the end product of a developmental domain (Bagnato, Neisworth, & Munson, 1997). During most of the early childhood period, it is difficult to measure and assess the individual skills and elements of knowledge. Young children are not reliable test takers due to the many different personal, developmental, and environmental factors that affect their behaviors (Bredekamp & Rosegrant, 1995).

The second category of early childhood education assessment is informal using multiple resources in an ongoing process of observing the educational and developmental progress of the child. This procedure includes direct observation, interviews, rating scales, questionnaires, checklists, rubrics, and work samples. Keith and Campbell (2000) stated that informal assessment techniques produce more comprehensive, objective and detailed data than formal methods.

Whatever the formal or informal assessment techniques are used to evaluate the progress of young children, the teacher has the most active role in gathering the data from multiple sources. Since the child is an active learner and actively participates in his/her learning and development process in the school or nursery environment and the teacher should be the main facilitator of this process.

In early childhood education, the teacher has the primary role of observing and assessing the children. Therefore, it is important to analyze the beliefs and practices of early childhood teachers concerning the assessment of young children since their beliefs may affect their behaviors in the classroom (Pajares, 1992). For this reason, this study was designed to examine early childhood education teachers' self-reported beliefs and self-reported practices in regard to developmentally appropriate assessment.

The specific research questions for the study were:

1. To what extent do early childhood education teachers believe in the developmentally appropriate assessment practices?

2. To what extent do early childhood education teachers practice developmentally appropriate assessment in their own teaching?
3. What relationships exist among teachers' self-reported developmentally appropriate assessment beliefs, practices and their educational/professional backgrounds?

Developmentally Appropriate Assessment

In early childhood education, generally assessment is an ongoing and comprehensive system that monitors the child, the program, the teacher, and the whole teaching and learning process. It is one of the assessment type of authentic assessment. According to Neisworth and Bagnato (2004), authentic assessment refers to the systematic collection of information about naturally occurring behaviors of young children and families in their daily routines. Information collected through direct observation and recording, interviews, rating scales and observed samples of the natural or facilitated play and daily living skills of children. Since early childhood assessment has increasingly attracted attention from educators and associated professionals (Scott-Little, Kagan, & Clifford, 2003), thus it is important to continue to research how the authentic assessment process is constructed in early childhood programs for young children. Several studies have been conducted about how assessment should occur in early childhood education settings. According to the National Association for the Education of Young Children (NAEYC) (2005), assessment in an early childhood setting should be developmentally appropriate and should have goals and methods. The basic aims of developmentally appropriate assessment are to assist in designing the curriculum, determining the individual differences of a child, individualizing instruction, identifying children with special needs and improving communication with parents (McMillan, 1996). The creation of developmentally appropriate assessment ensures that the individual child's differences are taken into account, and appropriate and accurate assessment needs to be based on specific principles; firstly, assessment should use multiple sources of information, secondly it should benefit the child and improve learning, thirdly it should involve the child and family, fourthly it should be fair for all children, and lastly assessment should be authentic (Wortham, 2005).

In order to establish a developmentally appropriate assessment process the family, school administration and teachers should be involved. However, it is the teacher that has the greatest impact on the learning experiences of the child.

The Role of Teachers in Early Childhood Education Assessment

The process of assessment of young children includes the participation of the child, the parents, the school system, and the teachers; this is particularly true in informal assessment. Research has shown that the teacher has the largest and the most important role in the assessment of young children and the term assessment is generally considered to be the process teachers use to evaluate the quality of their students' work and the success of their instructional practices (Taylor & Nolen, 2008).

Since the teacher has a pivotal role in the assessment process it is important that they have specific guidelines and standards such as those designed by the American Federation of Teachers, National Council on Measurement in Education, and the National Education Association. Below is a summary of some of responsibilities of teachers in relation to assessment. Teachers should be able to;

1. Select and develop appropriate assessment tools and ensure an ethical approach to the testing of children.

2. Administer, score and interpret the results of assessments and use the results in curriculum development, syllabus, lesson and activity planning and in relation to each child's educational progress.

3. Ensure that all parties involved in the child's education, and the child are fully aware of the results of the assessment. (NAEYC, NAECS/SDE, 2003).

Early Childhood Education and Assessment in Turkey

The importance of early childhood education in Turkey is increasing day by day; various economic and social changes were instrumental in increasing awareness in teachers, parents and the community. Teacher training quality by universities, and expansion of early childhood education centers are being carried out. In Turkey preschool education is noncompulsory. However, the Ministry of National Education (MONE) plans to increase the number of students who attend early childhood education centers. Teachers in public preschool classrooms should have a four-year education in the departments of early childhood education, or the child development and education of departments in universities. Early childhood education institutions use a developmentally based curriculum developed by education specialists and university professors and approved by MONE. It contains both daily and monthly plans with specific developmental objectives and indicators. Also MONE added new perspectives about assessment to this developmentally based curriculum in which it is stated that the results of the assessment of the program can be used to improve education and effects of it. In both cases the main goal is to support children's development and education. Previously traditional assessment tools were used which were standardized tests or teacher-created like multiple-choice tests, fill-in-the-blanks, true-false, but after new early childhood program which was revised in 2013, authentic assessment tools such as; observation records, anecdotal records, developmental checklists, portfolio, and developmental reports started to be used which include a summary of the performance of each child (MONE, 2013).

There are limited numbers of studies on assessment in early childhood education in Turkey. Eren (2007) analyzed the attitudes of preschool teachers, preschool children and their parents towards assessment through portfolios. The study was carried out over one year in a private kindergarten and the researcher used observations, interviews and questionnaires to gather the data. Positive attitudes towards portfolio assessment were observed in children and the preschool teachers in terms of the children's development of self-expression self-confidence and taking

responsibility. The parents found this type of assessment helped them understand their children's attitudes, interests and capabilities (Eren, 2007).

Method

In order to create a representative sample, questionnaires were sent to 81 early childhood education centers that were selected from different districts in Ankara. The final sample consisted of 194 early childhood education teachers from different centers. 105 (54.1%) were working in public early education centers and 89 (45.9%) from private institutions. All the teachers participated in the study were female and aged from 18 to 52; 34.5% of them were between the ages of 18-25, 32.5% of them were between 26-35 ages, and 33% of them were between the ages of 36-52. Also their educational backgrounds were showing an alteration; 28,9% graduated from vocational high schools, 10.3% have associated degree, 46.9% have an undergraduate degree and 13.9% of them have graduate degrees.

The Early Childhood Education Teacher Assessment Beliefs and Practices Questionnaire was developed by the researchers for this study. The questionnaire was constructed through reviewing related literature and other existing instruments related to classroom assessment as well as instruments about teacher beliefs and practices. The questionnaire was checked by two experts and then some questions were revised where necessary.

The final instrument consisted of three parts; the basic demographic and educational/professional background data from the teacher participants, teachers' assessment beliefs, and teachers' assessment practices in the classroom. There were 38 total items and each item was composed of a five point Likert type scale with points from 1 to 5.

The psychometric properties of Early Childhood Education Teacher Assessment Beliefs and Practices Questionnaire for the pilot study and the sample were examined using factor analyses and reliability analyses. The pilot study was conducted with 100 early childhood education teachers, normality assumptions are checked and the sample was seen as sufficient for the pilot study. According to Pallant (2007), the belief scale should have an acceptable internal consistency with a Cronbach alpha coefficient of .70. In the current study, the Cronbach alpha coefficient was .90 thus, the scale had a good reliability. One item, "As an assessment technique, the IQ test." had a value less than .3 in the Corrected Item-Total Correlation statistics which indicated that this item had a different value from the belief scale. This item also appeared as a single factor in the item analysis; therefore, it was removed from the belief scale for the main data collection. The Cronbach alpha coefficient of practice scale was .89. Therefore, it had good reliability in terms of the practice scale. The item "IQ test" has a value less than .3 in Corrected Item-Total Correlation statistics, which indicates that this item has a different value from the practice scale. This item also appeared as a single factor in the item analysis; therefore, it was removed from the practice scale for main data collection. When the main data were examined through reliability analyses, the belief scale had a good reliability with a Cronbach

alpha coefficient of .89 and the practice scale had a Cronbach alpha coefficient of .84.

After conducting the pilot study, Ministry of National Education (MONE) was contacted and the necessary permission to conduct the study and the names of schools and teachers were obtained. Then, the questionnaires were delivered to 247 early childhood education teachers employed in 62 of the 81 authorized public and private centers. 194 questionnaires were used for analyses of data, producing a return rate 78.5%. The analyses were carried out using PASW 18 statistical package.

Analysis of the Results

The results of the self-reported beliefs data and self-reported practices data were first analyzed using descriptive statistics, including means and standard deviations of self-reported belief and self-reported practice scores, frequency distributions of each item in the beliefs and practice scale. Also the total belief score (TBS) and total practice score (TPS) were computed.

Correlation analysis and analyses of variance were selected as the methods to analyze the research questions. The Pearson correlation was performed to explore the relationships between the total self-reported belief scores, total self-reported practice scores and educational/professional background variables. Independent sample t-tests were performed to compare the participants' TBS and TPS scores in relation to the grade level they taught, number of teaching staff in the classroom, daily work hours, and program type they worked in. One-way ANOVA was employed to examine the relationship between the in-service early childhood education teachers' teaching experience and the level of their education and their TBS and TPS scores. Post-hoc comparisons were also performed to find out which groups were significantly different from one another.

The beliefs section of the Early Childhood Education Teachers' Beliefs and Practices Questionnaire was designed to reveal in-service early childhood education teachers' beliefs about assessment.

Self-reported Assessment Beliefs

The analysis of the results presented in Table 1 shows that the items which were rated as "very important" by participants were the belief items 17 and 6. Also, items which were rated as "quite important" by participants were belief items 19, 18, 2 and 8. Furthermore, items rated as "important" were the belief items 3, 11, 5 and 10. The results of the analysis indicated that total belief scores (N=194) ranged from 45 to 89 with a mean of 66.30 and standard deviation of 8.44. This means, on average, calculating the mean of the total belief scores' mean (66.30 / 19 = 3.49), the participants tended towards a view of "quite important" in relation to the developmentally appropriate assessment beliefs.

Table 1

The Percentages of the Responses to Each Question in the Belief Section of Early Childhood Education Teachers' Beliefs and Practices Questionnaire

Early Childhood Education Teachers' Responses in Percentage							
	unimportant	of little importance	important	moderately important	very important	Total	importance point
17	-	-	9,8	26,8	***63,4***	100	90,7
6	-	-	10,8	33,5	***55,7***	100	89
16	-	1,5	23,7	***37,6***	37,1	100	82,1
15	-	3,1	26,8	***36,1***	34	100	80,2
19	1,5	2,1	27,8	***37,6***	30,9	100	78,9
9	1	4,6	30,9	30,9	***32,5***	100	77,8
18	1,5	6,7	26,8	***39,7***	25,3	100	76,1
2	1	7,2	29,9	***36,1***	25,8	100	75,7
14	1	11,3	30,9	22,2	***34,5***	100	75,6
8	1	7,2	30,9	***36,1***	24,7	100	75,3
13	2,1	9,8	29,4	27,8	***30,9***	100	75,2
3	1	6,2	***39,7***	29,4	23,7	100	73,7
12	5,2	10,3	28,9	23,2	***32,5***	100	73,5
7	4,6	7,2	33	***32,5***	22,7	100	72,3
4	2,1	11,9	***32***	31,4	22,7	100	72,2
11	2,6	11,9	***34***	29,9	21,6	100	71,2
1	2,1	11,9	32,5	***36,6***	17	100	70,9
5	4,6	13,9	***36,6***	30,4	14,4	100	67,2
10	5,2	12,9	***43,3***	26,3	12,4	100	65,6

Note: Bold print indicates items on preference for teachers' beliefs.

Self-Reported Assessment Practices

Analysis of the results presented in Table 2 shows that the items which were rated as "very often" by participants were the practice items 7, 8, 15 and 6. Also, items which were rated as "sometimes" by participants were practice items 18 and 19. The results of the analysis indicated that total practice scores (N=191) ranged from 41 to 83 with a mean of 61.03 and standard deviation of 7.95. This means that, on average, calculating the mean of the total practice scores' mean (61.03 / 19 = 3.2), participants tended towards the view of "sometimes" in relation to developmentally appropriate assessment practices.

Table 2

The Percentages of the Responses to Each Question in the Practice Section of Early Childhood Education Teachers' Beliefs and Practices Questionnaire

Early Childhood Education Teachers' Responses in Percentage							
Item	Rarely	Seldom	Sometimes	Often	Very Often	Total	Frequency
7	-	-	2,1	*16,5*	***81,4***	100	95,9
8	0,5	-	9,8	*30,4*	***59,3***	100	89,6
15	-	8,2	*13,9*	26,3	***51,5***	100	84,2
13	2,1	2,6	19,6	37,6	***38,1***	100	81,4
6	6,7	8,8	16,5	21,6	***46,4***	100	78,5
16	2,1	12,4	*23,7*	28,9	***33***	100	75,7
12	4,1	4,6	*33*	***39,2***	19,1	100	72,9
3	1	7,7	***37,1***	*34,5*	19,6	100	72,8
2	3,6	11,3	***32***	30,9	*22,2*	100	71,3
11	4,1	18	25,3	22,2	***30,4***	100	71,3
14	6,2	8,8	31,6	***34,2***	19,2	100	70,3
1	4,1	16	26,3	***33***	*20,6*	100	70
17	8,2	20,6	***25,8***	*22,2*	23,2	100	66,3
5	11,5	18,8	19,3	***28,6***	21,9	100	66,1
4	8,2	14,9	***30,9***	*29,9*	16	100	66,1
18	10,4	13	***37,3***	29,5	9,8	100	63,1
10	16,1	17,1	***33,7***	*25,4*	7,8	100	58,3
19	24,9	14	***30,1***	17,1	14	100	56,3

Note: Bold print indicates items on preference for teachers' practice.

Relationship between Variables (Self-reported Beliefs, Self-reported Practices and Educational/Professional Background)

To explore the relationship between in-service early childhood education teachers' self-reported beliefs and self-reported practices about assessment and their educational/professional background, correlational analysis were undertaken to compute the Pearson product-moment correlation coefficients. Preliminary analyses were performed to ensure there were no violations of the assumptions made concerning the normality, linearity and homoscedasticity

The results of the correlational analyses revealed that there was a strong, positive correlation between in-service early childhood education teachers' self-reported beliefs and self-reported practices, $r=.65$, $n=191$, $p<.01$ (two-tailed) with higher levels of the self-reported beliefs scores associated with higher levels of the self-reported practice scores. Moreover, a small correlation ($r(194)=.20$, $p<.01$) was found between in-service early childhood education teachers' TBS scores and the number of teachers in the classroom. There was also a small correlation between the in-service early childhood education teachers' TPS scores and number of teachers in the classroom ($r(191)=.20$, $p<.01$). In addition, there was a strong, positive

correlation (r(187)=.65, p<.01) between program type and daily work hours. A somewhat strong, positive correlation (r(191)=.61, p<.01) was found between in-service early childhood education teachers TPS scores and the level of their education, with higher levels of self-reported practice scores associated with higher levels of education. Moreover, the level of education was correlated with the in-service early childhood education teachers' TBS scores (r(194)=.44, p<.01). Furthermore, no educational/professional background variable correlated with another, except for those reported above and shown in Table 3.

Table 3

Pearson Product-Moment Correlations between Total Belief Scores and Total Practice Scores and Educational/Professional Background Variables

	Total Belief Score	Total Practice Score	Grade Level Taught	Number of Teachers in the Class	Work Hours	Teaching Experience	Program Type	Degree Earned
Total Belief Score	-							
Total Practice Score	,651**	-						
Grade Level Taught	-,096	-,092	-					
Number of Teachers in the Class	,207**	,207**	-,099	-				
Work Hours	,133	,122	,014	,369	-			
Teaching Experience	-,09	-,172	-,064	-,135	-,139	-		
Program Type	,042	,062	,062	,304	,658**	-,198**	-	
Degree Earned	,444**	,614**	-,207	,233	-,033	-,119	-,172*	-

** P<0.01(2-tailed)

* P<0.01 (2-tailed)

Difference in Self-reported Beliefs and Self-reported Practices related to Educational and Professional Background

T-tests and one-way between groups analysis of variance (ANOVA) were performed to investigate whether in-service early childhood education teachers' self-reported beliefs and practices varied due to the grade level they taught, number of teachers in the classroom, daily work hours, program type they worked in, teaching experience and level of education achieved.

Grade level taught

The grade level that in-service early childhood education teachers taught was divided into two groups (Kindergarten and Preschool), and compared on the TBS scores and TPS scores, using independent samples t-tests. The results of these tests (presented in Table 4) revealed that there were no significant differences in the TBS scores of in-service early childhood education teachers who taught kindergartens (M=67.44, SD=8.15) and teachers who taught preschools M=65.72, SD=8.55; t(192)=1.34. The results also indicated that there were no significant differences in TPS scores of in-service early childhood education teachers who taught in kindergarten (M=62.04, SD=8.24) and teachers who taught in preschool M=60.50, SD=7.78; t(189)=1.26.

Table 4

Comparison of Total Belief Scores and Total Practice Scores in terms of Grade Level Taught

	Kindergarten		Preschool			
	M	SD	M	SD	*df*	t
TBS	67.44	8.15	65.72	8.55	192	1.34
TPS	62.04	8.24	60.50	7.78	189	1.26

TBS = Total Belief Scores
TPS = Total Practice Scores
p<.01(two-tailed)

Number of teachers in the classroom

The category of the number of teaching staff in the classroom was also divided into two groups (without assistant and with an assistant) and compared on the TBS and TPS scores, using independent samples t-tests. The results of independent samples t-tests (presented in Table 5) revealed that there were significant differences in the TBS scores of in-service early childhood education teachers who had no assistant in the classroom (M=64.71, SD=8.35) and the teachers who had an assistant in the classroom M=68.21, SD=8.18; t(192)=-2.93, p=.004 (two tailed). The magnitude of the differences in the means was small (η^2=.04). Also, there were significant differences in TPS scores of in-service early childhood education teachers without an assistant in the classroom (M=59.51, SD=7.83) and teachers with an assistant in the classroom M=62.80, SD=7.76; t (189) =-2.90, p=.004 (two-tailed). Again the magnitude of the differences in the means was small (η^2) =.04 which indicates that the differences were of very little practical significance.

Table 5

Comparison of Total Belief Scores and Total Practice Scores in terms of Number of Teaching Staff in the Classroom

	W/o Assistant		With Assistant				
	M	SD	M	SD	df	t	η2
TBS	64.71	8.35	68.21	8.18	192	-2.93	.04
TPS	59.41	7.83	62.8	7.76	189	-2.9	.04

TBS = Total Belief Scores
TPS = Total Practice Scores
η^2 = Eta squared

Work hours

To explore the differences in in-service early childhood education teachers' self-reported beliefs and self-reported practices that might exist based on the daily work hours, the working hours were divided into two groups (teachers working 8 or less hours a day and those working more than 8 hours a day) and compared on the TBS and TPS scores, using independent samples t-tests. The results presented in Table 6 show that there were no significant differences in TBS scores of in-service early childhood education teachers working 8 or less hours a day (M=65.34, SD=8.59), and in-service early childhood education teachers working more than 8 hours a day M=67.61, SD=8.35, t(185)=-1.83, p=.069 (two-tailed). The results also showed that, there were no significant differences in TPS of teachers who work 8 or less hours a day (M=60.04, SD=8.18), and teachers who work more than 8 hours a day M=61.98, SD=7.69, t (183) =-1.66, p=.097 (two-tailed).

Table 6

Comparison of Total Belief Scores and Total Practice Scores in terms of Daily Work Hours

	8 and less hours		More than 8 hours			
	M	SD	M	SD	*df*	t
TBS	65.34	8.59	67.61	8.35	185	-1.83
TPS	60.04	8.18	61.98	7.69	183	-1.68

TBS = Total Belief Scores
TPS = Total Practice Scores

Program type

The program types that teachers work in were divided into two groups (state and private institutions) and the TBS and TPS scores were compared using independent samples t-tests. The results (presented in Table 7) revealed that there were no significant differences in the TBS scores of the in-service early childhood education state school teachers (M=65.98, SD=8.37), private school teachers M=66.68, SD=8.54; t(192)=-.578, p=.564 (two-tailed). The results also indicated that there

were no significant differences in TPS scores of the in-service early childhood education state school teachers (M=60.56, SD=7.61), and private school teachers M=61.56, SD=8.33; t(189)=-.86, p=.391 (two-tailed).

Table 7

Comparison of Total Belief Scores and Total Practice Scores in terms of Program Type

	Public		Private			
	M	SD	M	SD	*df*	T
TBS	65.98	8.37	66.68	8.54	192	-.578
TPS	60.56	7.61	61.56	8.33	189	-.860

TBS = Total Belief Scores
TPS = Total Practice Scores

Teaching experience

One–way between-groups analysis of variance (ANOVA) were conducted to explore the differences in early childhood education teachers' self-reported developmentally appropriate assessment beliefs and practice in relation to their teaching experience. To examine the effect of early childhood education teachers' teaching experiences on their self-reported developmentally appropriate assessment beliefs and practice, early childhood education teachers were divided into three groups (Group 1: Early Career - less than 3 years; Group 2: Mid-Career - between 3 and 10 years; Group 3: Veteran - above 10 years). Table 8 presents the results of one-way between-groups analysis of variance reported for beliefs and practice in relation to teaching experience.

Table 8

One-Way Between-groups Analysis of Variance: Reported Beliefs and Practices Teaching Experience

	Total Belief Scores				Total Practice Scores			
	M	SD	F (2, 191)	η^2	M	SD	F (2, 188)	η^2
0-3 Years Early Career	65.86	7.82	7.98*	.07	61.51	7.93	7.52	.07
3-10 Years Mid-career	69.26	8.74			63.12	7.20		
10> Years Veteran Teachers	63.16	7.88			57.50	7.88		

There was a statistically significant difference in the early childhood education teachers' self-reported developmentally appropriate assessment total belief score for the three teacher groups: F (2,191) = 7.98, $p < .01$. The effect size, calculated using eta square, was .07, indicating a medium effect size. Post-hoc comparisons based on the Tukey HSD test showed that Group 2 (M = 69.26; SD = 8.74) was significantly

higher than both Group 1 (M = 65.86; SD= 7.82) and Group 3 (M = 63.16; SD= 7.88). Groups 1 and 3 were not statistically different in the total belief scores.

There was also a statistically significant difference in the early childhood education teachers' self-reported developmentally appropriate assessment total practice score for the three teacher groups: F (2,188) = 7.52, $p < .01$. The effect size, calculated using eta square, was .07, indicating a medium effect size. Post-hoc comparisons based on the Tukey HSD test showed that Group 3 (M = 57.5; SD = 7.88) was significantly lower than both Group 1 (M = 61.51; SD= 7.93) and Group2 (M = 63.12; SD= 7.20). Group 1 and Group 2 were not statistically different in the total practice scores.

Level of education

One–way between-groups analysis of variance was conducted to examine whether there was a difference in early childhood education teachers' self-reported developmentally appropriate assessment beliefs and practice in relation to the level of their education. The teachers were divided into three groups (Group 1: Only completed high school; Group 2: Undergraduate degree; Group 3: Postgraduate degree). The results of one-way between-groups analysis of variance reported for beliefs and practice by the degree can be seen in Table 9.

Table 9

One-Way Between-groups Analysis of Variance: Reported Beliefs and Practices Earned Educational Degree

	Total Belief Scores				Total Practice Scores			
	M	SD	*F* (2, 191)	η^2	M	SD	*F* (2, 188)	η^2
High School	62.46	6.77	23.465	.19	56.46	6.59	58.383	.38
Undergraduate	67.92	8.06			62.24	6.01		
Graduate	72.89	8.47			70.79	6.06		

η^2=Eta Squared

*p>.01

There was a statistically significant difference in the early childhood education teachers' self-reported developmentally appropriate assessment total belief score for the three education groups: F (2,191) = 23.47, $p < .01$. The effect size, calculated using eta square, was .19, indicating a large effect size. Post-hoc tests using the Tukey HSD test indicated that teachers with a graduate degree (M = 72.9; SD = 8.47) was statistically higher than teachers with an undergraduate degree (M = 67.92; SD = 8.06) and those with only high school education (M = 62.46; SD = 6.77) in terms of the total belief scores. Also, early childhood education teachers with undergraduate degrees have a statistically higher total belief score than those who had only completed high school.

There was also a statistically significant difference in the early childhood education teachers' self-reported developmentally appropriate assessment total practice score for the three education groups: F (2,188) = 58.38, $p < .01$. The effect size, calculated using eta square, was .38, indicating a large effect size. Post-hoc comparisons using Tukey HSD revealed that teachers with graduate degree (M = 70.79; SD = 6.06) was statistically higher than those with an undergraduate degree (M = 62.24; SD = 6.01) and those only having completed high school (M = 56.46; SD = 6.59) in terms of the total practice scores. Moreover, early childhood education teachers with undergraduate degree had a statistically higher total practice score than those who only completed high school.

Discussion

The intention of this study was to add to the limited but growing body of information pertaining to early childhood education teachers' self-reported beliefs and practices with regard to assessment and the relationships that exist among their beliefs, practices and educational/professional backgrounds. This study explored three research questions. The first research question involved the investigation of in-service early childhood education teachers' beliefs about the developmentally appropriate assessment. It is apparent from the results of this study that early childhood teachers believed developmentally appropriate assessment practices "quite important". Considering the common use of traditional assessment practices in Turkish early childhood education programs, this result can be presumed to be very encouraging.

The analysis of the individual assessment belief items showed that early childhood education teachers believed that "play" is one of the most important assessment tools to assess the developmental progress of young children. This result might be attributed to the fact that play is one of the core elements of young children's learning processes. Since play is a very commonly used instructional tool in an early childhood learning environments, teachers can collect a vast amount of information about children's learning and developmental progress. Hyson (2010) asserts that every child has his/her own characteristics and approaches to play. Thus, children's unique characteristics as well as individual differences among children can be observed when they are playing.

The results of the current study also indicated that many in-service early childhood teachers found it very important to elicit information from parents, other teachers and professionals in the school to assess their students. This result may be explained by the early childhood teachers' recognition of children's different developmental characteristics that can be observed in different social contexts. For example, while a child expresses anger by crying at home, he/she may show totally different reactions at school or in classroom. Thus, it is important to collect comprehensive data from different contexts in which the child spends her/his time. Moreover, the teachers might be well aware of value of eliciting the parents' perspectives about their own children, which are different from the teachers understanding of the child. The information that teachers gather from parents

enriches their classroom assessment. Moreover, data collected from other teachers can support the data that the classroom teacher has collected for assessment. A different view increases the objectivity of the assessment decisions. The results of a recent study (Berry, Daughtrey, & Wieder, 2009) about teacher collaboration revealed that teachers who have consistent opportunities to work with successful colleagues improve their teaching effectiveness, and also provide improved outcomes for the students they teach. Finally, teachers pointed out the importance of gathering data from other early childhood professionals since this can provide valuable information to early childhood education teachers when assessing young children. A psychologist, for example, may focus on detailed characteristics of a child's behaviors from the perspective of the psychological development of children. Thus, one particular behavior of a child could be assessed from two different perspectives and this increases the validity of the assessment. In addition, those professionals can have the knowledge and ability to use some instruments for assessment that the early childhood education teacher may be unaware of or not be able to use.

The results also indicated that early childhood teachers agreed on the importance of photographs and sketches as assessment tools. These tools were perceived by the teachers as concrete evidence for the child's developmental and learning progress. In addition, teachers might find these tools important because collecting these types of data for assessment is easier and more practical to use in the classroom when compared with other tools. These tools might also have been considered important by teachers as they can help them save time when conducting classroom observations.

On the other hand, the results also demonstrated that, interestingly, many early childhood education teachers found traditional assessment tools such as workbooks, worksheets, readiness tests and behavior tests not as important as other developmentally appropriate assessment tools. This result is also encouraging as these tools are not considered to be helpful and valid as developmentally appropriate assessment tools (NAEYC, 2009). The other assessment tool that early childhood education teachers found to be not important was rubrics. This might be due to the limitations of the rubrics. McAfee and Leong (2006) asserted that it is difficult to construct good rubrics; teachers may differ in their understanding of a scale, and the biases of the teachers may affect their responses.

The results concerning the second research question indicated that early childhood education teachers sometimes used developmentally appropriate assessment practices in their teaching. Unlike as seen in the examination of beliefs, the analysis of frequency of engagement in developmentally appropriate assessment practices showed more mixed results. Although the early childhood education teachers report strong agreement with developmentally appropriate assessment beliefs, they also report that they engage in both developmentally appropriate and traditional assessment practices. The most commonly reported developmentally appropriate assessment practices in which the early childhood education teachers engaged in were; using play as an assessment tool, eliciting information from

parents, teachers; and other professionals in the school, and using projects as assessment tools. The teachers most commonly reported using worksheets and workbooks, and developmental tests in their traditional assessment. These mixed results might be due to the influences on and/or barriers to the teachers' teaching practices. For instance, some teachers reported that they have to use workbooks and worksheets as the MONE promotes these tools and parents expect their children to be doing drill and practice work in the classroom. So, in order to respond these requests, they use these traditional assessment tools in their teaching. From these responses it can be inferred that the early childhood education teachers are revealing a desire to move from being traditional teachers to educators who use contemporary assessment practices and thus can better align their practices with their beliefs.

The results from the study showed that there was a strong positive correlation between the early childhood teachers' self-reported beliefs and practices with higher levels of the beliefs scores associated with higher levels of the practice scores. This shows that the teachers practice what they believe in terms of developmentally appropriate assessment practices. The relationship between teachers' beliefs and their practices found in this study provides some support for the studies by Buldu (2009), Erdiller and McMullen (2003), Nespor (1987), and Pajares (1992). These researchers suggested that teachers' beliefs influence their practices. Nespor indicates that it has become an accepted idea that teachers' beliefs are vital components of their practice. Pajares asserts that the beliefs teachers hold influence their perceptions and judgments, which in turn, affect their behavior in the classroom. Buldu (2009) expresses that beneath the classroom practices of every teacher is an elaborate set of beliefs that are interwoven into the fabrics of their personal and professional life. Also, research on teachers' thinking by Isenberg (1990), assumes that beliefs that teachers hold influence their practices. Furthermore, Clark and Peterson (1986) stated that teachers' thought process share a reciprocal relationship with their actions which means that there is a close relationship between beliefs and practices.

Moreover, the results indicated a strong positive correlation between the teachers' practice scores and the level of their own education, meaning the higher the level the higher practice scores they received. Thus, this result means the more content knowledge that is gained through obtaining a higher level of education, the more developmentally appropriate assessment practices the teachers implement. The education level of teachers is assumed to be as a determining factor regulating teachers' beliefs on developmental appropriateness (Cassidy et al., 1995; Snider & Fu, 1990; Vartuli, 1999). In another study, McMeniman, Benson, and Alat (2002) found that higher educational level and teachers' internal locus of control were consistently significant predictors for both teachers' beliefs and practices. Thus, teachers' beliefs were higher if they had a higher educational level.

Furthermore, some of the educational/professional background variables that were examined in this study were found to be useful in discriminating among teachers in terms of assessment beliefs and practices. For a number of teachers in the study, the level of education, and teaching experience were found to have an effect

on teachers' assessment beliefs, whereas the grade level taught, number of work hours and program type were not found to be linked to teachers' assessment beliefs. In addition, it was found out that the educational/professional background variables such as the number of teaching staff in the classroom, the level of education and teaching experience were useful in discriminating among teachers on the basis of assessment practice.

The correlation results revealed that there was a small correlation both between the teachers' beliefs and practices in relation to working with a partner or without a partner in the classroom. The number of teachers in the classroom influences teachers' beliefs about assessment practices. This means that teachers feel more comfortable with developmentally appropriate assessment practices when they receive support in the classroom. This might be because the teacher was able to be more flexible in the classroom if there was another teacher or assistant to share the workload. When the child/adult ratio decreases, the teacher can spend more time assessing children. In addition, if the workload is shared the teacher's motivation for teaching and the assessment process might be higher.

The length of teaching experience of teachers was related to a significant difference seen in their self-reported beliefs and practices. Mid-career teachers (3 to 10 years) scores were higher than both early career (0 to 3 years) teachers and veteran teachers (more than 10 years). This might be because a new entrant teacher might be more concerned with following MONE guidelines more strictly and the veteran teachers are unlikely to give up their more traditional methods. The teachers' years of experience may influence their beliefs and practices. The research on the relationship between teacher experience and their classroom practices produced mixed results. Some studies have established a relationship between experience and developmentally appropriate practices (Vartulli, 1999) while others did not (Buchanan et al., 1998). According to McMullen (1999) new teachers were found to talk the talk but not walk the walk and Rust (1994) commented that beginning teachers are more concerned with the personal and social dimension of teaching rather than with their instructional ability.

Implications and Recommendations

According to findings of this study and previous work concerning developmentally appropriate assessment and related issues, some suggestions can be offered to teachers, teacher education programs and MONE about the use of assessment in education.

The results of this study may help early childhood teachers to reflect on their actions and thinking processes by looking at the beliefs other early childhood teachers hold and the practices they implement in their early childhood classrooms. This may increase their confidence regarding their own teaching beliefs and practice. Regarding teacher education programs, the results of this study provide useful information to those involved in early childhood teacher education program

development. A clear understanding of the assessment beliefs and practices of early childhood teachers and how they differ from each other due to their educational/professional background has implications for the development of early childhood teacher education undergraduate program philosophies as well as for the preparation of early childhood teachers. In addition to teacher education programs, this study revealed that MONE should be aware of the importance and necessity of training programs for all early childhood education teachers about developmentally appropriate assessment so that these teachers can understand the importance of this issue.

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