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Analysis of Basic Concepts Knowledge and Academic Development of Children From Different Age Groups

Ayla Oktay[1], Handan Dogan[2] and Zeynep Cigdem Ozcan[3]

Maltepe University, Faculty of Education, Istanbul, 34857, Turkey
Telephone: 0090-216-6261050
E-mail: [1]<aylaoktay@maltepe.edu.tr>, [2]<hdogan@maltepe.edu.tr>,
[3]<cigdemozcan@maltepe.edu.tr>

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ABSTRACT As of the 2012-2013 academic year, the starting age for primary school has been changed to 66 months. The purpose of this research is to analyze whether basic concepts knowledge and academic development show any differences in children starting school at different ages. The group analyzed in this research consisted of 254 first-year students. The Bracken Basic Concept Scale and measuring tools for reading speed, reading comprehension and mathematical problem solving were used. It is observed that children show no significant difference in basic concepts at the beginning of the academic year, that the existing difference is on the concept of numbers, and that aside from the concept of letters there is no meaningful difference evidentat the end of the academic year. Students from the younger age group were able to learn to read. However, differences in the younger age group in reading comprehension and mathematical problem solving were observed.

INTRODUCTION

Until the 2012-2013 academic year, the starting age for school in Turkey was 72 months and above.When Primary School and Education Law no. 6287 was prepared on 30 March 2012 and issued by the Ministry of Education, the compulsory education period increased from eight years to 12 years, and applications of compulsory education became a current issue. According to this law, the compulsory education period consists of four years of primary school, four years of middle school, and four years of high school. As of 30 September 2012, it is envisioned to complete the registration process of all children who are 66 months old, and to start children who are 60-66 months old—who are considered to have adequate development—in primary school with a written request from their parents. It is mandatory to start children who are 66 months old or above in their first year of school. The change in school starting age had broad repercussions in public, and experts and the public expressed opinions on the success of this implementation. Following the new implementation, some private schools tried to come up with solutions to prevent any negative development by dividing children into classes according to their age or by testing children who were 60-66 months old with school readiness tests.

Today, the starting age for compulsory education varies from one country to another. For example, although the start of schooling age is six years old for countries such as Germany, Austria, Belgium, France, Spain, Japan, Portugal, Greece, Italy, Hungary, Iceland, Norway and the Republic of Ireland; it is four years old in Northern Ireland; five years old in England, the Netherlands, Wales, Scotland and Israel; and seven years old in Finland and Denmark (Education, Audiovisual and Culture Executive Agency (EURYDICE) 2012). However, in many developed countries, the starting age remains at six years old (Balci 2011).

Whatever the start of schooling age may be, in developed countries—especially England, the USA and Northern European countries—the decision to start school is taken up with the parents and child under the supervision of an expert. This approach emphasizes the importance of the acceptance and evaluation of each child's individual differences. On the other hand, in Turkey, chronological age is accepted as the basic criteria for starting primary education, and any ofthe child's inadequacies and aspects requiring support cannot be identified. Beginning primary school before obtaining a certain level of readinessmayresult in failure for the child.This situation not only affects the child's emotions in a negative way, but it also affects the work done following this feeling of failure; this work may

not beas effective as the precautions that could have been taken in the beginning (Erkan and Kirca 2010).

Papers concerning the starting age for primary education and childrens' academic development statethat children starting the first grade at a younger age show quick development (Stipek and Byler 2001; Docket and Perry 2009); on the other hand, other papers suggest that these children start school at a disadvantage (McCllelland et al. 2000). Although there are papers determining that the academic performance of younger age groupsof children is lower than that of other age groups (Davis at al. 1980; Breznitz and Teltsch 1989), there are other papers stating that age is not a predicting variable for academic success (Alexander and Entwistle 1988; Jones and Mandeville 1990; Fertig and Kluve 2005). Therefore, it can be concluded that age is not a single determining variable—other variables are also influential.

The acceptance of children turning six years old at the end of March means that they will be in the same classroom with children who are almost one to one-and-a-half years older than they are. Also, no matter what the schooling age may be, there will certainly be children who are not ready to start their first year. This situation may cause various problems for children, and may result in children distancing themselves from school (Oktay 2013). For this reason, it is important to determine a child's readiness for primary school (Bagceli-Kahraman and Basal 2013). Reading, writing, mathematics, self-care, being away from his or her parents, showing healthy social behaviors, adapting to the physical environment, listening to his or her teachers, and makingfriends are abilities expected from a child in primary school. These skills are defined as "school maturity or readiness for school". Readiness for school is defined by Thackeray and Downing (1972) as a readiness for all kinds of learning—a period where the child can easily and sufficiently learn without facing any emotional difficulties.

Readiness for primary school depends on various factors such as: physical factors (vision and hearing, fine motor skills and health); cognitive factors (learning skills); language development factors (the ability to follow instructions by understanding receptive language-spoken expressions, expressive language, spoken self-expression and the ability to verbally communicate with people); social and emotional factors; and sociocultural factors (the family's financial situation, number of family members, living conditions, parents' education level and view on education, the right to play given to the child, social amenities, the amount and quality of time parents spend with the child etc.) (Halle et al. 2000). School readiness not only consists of the development of cognitive and literacy skills, it also covers all of the necessary domains that children need, such as physical, social, emotional and language development (McTurk et al. 2011; Morrison 2011; Halle et al. 2012; Sahin et al. 2013).

Development is very fast in the early childhood period, so support is important for the development of the factors that affect the child's readiness for school. Preschool education establishments, or kindergartens, are important units that support early childhood education. Children who gain experience in activities in kindergarten educational programs, especially in reading readiness skills such as sound recognition; hand-eye coordination; mathematics skills; learning colors, shapes and similar notions; social skills such as sharing, awaiting one's turn and listening; motor skills; emotional skills like expressing one's feelings and showing empathy; self-care skills; and having the knowledgerequired for hygiene and nourishment will positively affect their future school lives so they can be successful (Oktay 2013).

The findings of research done on this subject show that it is necessary for a child to attain a certain level of maturity before starting formal education, and preschool establishments are important in achieving this level of maturity. Evaluating children's concept development and school maturity before starting primary school will be beneficial in helping them with possible inadequacies (Butun and Aral 2007).

Objectives

In this paper, which was conducted in order to find the presence of any differences in basic concepts knowledge and academic development of children who start school at different ages, answers to the following questions were sought:

1. Do students who start primary school at different age groups show differences in basic concepts at the beginning of the year?
2. Do students who start primary school at different age groups show differences in basic concepts and academic progressat the end of the year (for example, learning to read, reading speed, reading comprehensionand problem solving)?

3. At the end of the year, are there any differences in basic concepts and academic progress (for example, learning to read, reading speed, reading comprehension and problem solving) between children who had a preschool education and children who did not?

MATERIAL AND METHODS

Participants

The group analyzed in this paper consisted of 254 students who started the first gradeatthree different primary schools on the Anatolian side of Istanbul. Of these students, 111 (43.7%) were girls, while 143 (56.3%) were boys. Eleven (4.3%) of these students were 60-65 months old, 65 (25.6%) were 66-71 months old, 90 (35.4%) were 72-77 months old, and 88 (34.6%) were 78-83 months old. The low number of children who were 60-65 months old (n=11) is due to the fact that some of them were removed from school by the request of their parents; these children were not included in the paper. Students 66-71 months old are referred to as Group 1; students 72-77 months old are referred to as Group 2; and students 78-83 months old are referred to as Group 3 hereafter. In the following sections of this paper, age groups will be represented with group names.

Tools for Data Gathering

The Bracken Basic Concept Scale-Expressive Form (the school readiness section that forms the first five subtests) was used to determine students' basic concepts knowledge and their school readiness level. Reading speed, reading comprehension and mathematical problem-solving measurement tools developed by experts were used to ascertain the childrens' academic development.

Bracken Basic Concept Scale-Expressive Form

The Bracken Basic Concept Scale-Expressive Form, developed by Bruce A. Bracken (1984) for the evaluation of basic concepts development of children between 3.0 to 6.11 years old, was used for this paper. The scale consists of 10 subtests. The subtests are arranged as Colors, Letters/Sound, Numbers/Counting, Size/Comparison, Shapes, Direction/Position, Self/Social Awareness, Texture/Material, Quantity, and Time/Sequence.The school readiness score,orSchool Readiness Composite (SRC), is determined by the point total of the first five tests (Colors, Letters/Sound, Numbers/Counting, Size/Comparison and Shapes) (Bracken 1998, 2006; Bracken and Panter 2009). This section of the scale was used for this paper. The adaptation of the Bracken Basic Concept Scale-Expressive Form was done by Yoleri (2010). Test-retest correlation was found as $r = 0.99$ ($p < .001$) in reliability. Cronbach's alpha internal consistency coefficient was 0.91, and the Spearman-Brown two half-test correlation was 0.86. KR-20 reliability was calculated as 0.89. The analyses show that the scale is reliable and valid.The SRC section takes approximately 5to10 minutes to complete.

Reading Speed

Reading speed is expressed by the number of words a child can read without making a mistake in a one-minute duration. For this paper, the text was chosen with the consent of the teachers, from a book recommended to first years by the Ministry of Education. Children were asked to read the text, and at the end of two minutes the number of words they read was counted and divided by two; thus, the number of words read in one minute was found.

Reading Comprehension Test

A 42-word text was chosen from storybooks recommended for first years with the teacher's consent, and seven questions within the scope of the five Ws and one H (what, why, where, when, who and how) were asked. Students read the story with no time limitation and were asked questions. One point was awarded for each correct answer, and zero points were given for each incorrect or non-answer.Two researchers did the scoring separately. Inter-scorer reliability of thetwo researchers was found to be 0.96.

Mathematical Problem-Solving Test

In order to evaluate students' mathematical problem-solving skills, the Ministry of Education suggested five mathematical problems from a mathematics book for first graders. Each question was scored on a 4-point scale. A score of 4 was awarded if the calculation was correct, complete and clear; a score of 3 was awarded if the result was almost correct or a calculation error was present; a score of 2 was awarded if the calculation was halfway done and correct; a score of 1 was awarded if addition was done instead of subtraction, or vice-versa (if the mathematical operation was correct);

and a score of 0 was awarded if the question was left unanswered or the entire operation was incorrect. Two researchers scored the tests separately. No difference was found between the scores of the two researchers.

A pre-application with data-gathering tools (excluding reading speed, reading comprehension and problem solving) was done at the beginning of the academic year (October 2012), and the final application was done at the end of the year (May 2013). The tools were applied individually in the classrooms.

Data Analysis

The one-way analysis of variance (ANOVA) was used to determine whether there were any significant differences between the means of different age groups in basic concepts knowledge and academic development; the chi-square test was used to evaluate whether the ability to learn to read differs by age difference and preschool attendance; and an independent samples t-test was applied in order to see if basic concepts knowledge and academic development show any difference by attending preschool.

RESULTS

The results of Table 1 show the presence of a difference by age group for the pretest of the Bracken Basic Concept Scale-Expressive Form's Numbers/Counting subsection [$F_{(2-240)}$=5.72, p<.01], and no meaningful differences in other

Table1: Students' ANOVA test results for bracken basic concepts – expressive form pre and post test scores by age groups

			Sum of squares	*sd*	*Mean of squares*	*F*	*p*	*Source of difference*
Pre-Test	*Colors*	Between groups	349.14	2	174.57	1.73	0.18	-
		Within groups	24221.34	240	100.92			
		Total	24570.48	242				
	Letters/Sound	Between groups	389.85	2	194.93	2.03	0.13	-
		Within groups	23039.786	240	95.99			
		Total	23429.64	242				
	Numbers/Counting	Between groups	1085.72	2	542.86	5.72	0.00	1-21-3
		Within groups	22777.74	240	94.91			
		Total	23863.45	242				
	Size/Comparison	Between groups	251.71	2	125.86	1.25	0.29	-
		Within groups	24228.41	240	100.95			
		Total	24480.13	242				
	Shapes	Between groups	134.52	2	67.26	0.66	0.52	-
		Within groups	24378.02	240	101.58			
		Total	24512.54	242				
	Total	Between groups	734.27	2	367.14	3.83	0.02	1-2
		Within groups	22988.15	240	95.78			
		Total	23722.42	242				
Post-Test	*Color*	Between groups	329.20	2	164.60	1.62	0.20	-
		Within groups	24013.38	236	101.75			
		Total	24342.58	238				
	Letters/Sound	Between groups	645.22	2	322.61	3.29	0.04	1-2
		Within groups	23114.82	236	97.94			
		Total	23760.04	238				
	Numbers/Counting	Between groups	223.85	2	111.92	1.13	0.32	-
		Within groups	23341.18	236	98.90			
		Total	23565.03	238				
	Size/Comparison	Between groups	699.89	2	349.94	3.46	0.06	-
		Within groups	23851.48	236	101.07			
		Total	24551.38	238				
	Shapes	Between groups	143.64	2	71.82	0.73	0.49	-
		Within groups	23353.14	236	98.95			
		Total	23496.78	238				
	Total	Between groups	602.50	2	301.25	3.05	0.06	-
		Within groups	23194.02	235	98.69			
		Total	23796.52	237				

subsections. According to Scheffe test results, which is applied to determine which groups have a difference amongst them, there is a difference between Group 1 ($\bar{X}$=48.17) and Group 2 ($\bar{X}$=51.19) that favors Group 2; and between Group 1 ($\bar{X}$=48.17) and Group 3 ($\bar{X}$=50.24) that favors Group 3. No meaningful difference is present between the Groups 2 and 3. A significant difference between age groups [$F_{(2\text{-}240)}$=5.72, p<.05] is observed for the Bracken Basic Concept Scale-Expressive Form school readiness (total score) scale. According to Scheffe test results, which is applied to determine which groups have a difference amongst them, a difference between Group 1 ($\bar{X}$=47.09) and Group 2 ($\bar{X}$=51.04) in favor of Group 2is found, and no meaningful difference is identified between other groups. Since there are no differences in other subtests, the difference in the total score may be caused by the Numbers/Counting subtest.

The results of the analyses only show a meaningful difference [$F_{(2\text{-}236)}$=3.29, p<.05] in first grade students' posttest scores for the Bracken Basic Concept Scale-Expressive Form's Letters/Sound subsection, and show no significant difference between age groups for other subtests and school readiness subtest total scores. According to Scheffe test results, a difference is identified between Group 1 ($\bar{X}$=47.77) and Group 2 ($\bar{X}$=51.94) in favor of Group 2.

According to the results of the analyses, the percentage of the inability to learn to read for Group 1 students seems to be higher than that of Group2 (Table 2). However, according to chi-square test results, there is no meaningful correlation between learning to read and age group (χ^2=0.143, p>.05). This result shows that all students were able to read.

Table 2: Students' Chi-square test results for their success in learning to read by age groups

		Did not read	*Read*	*Total*
Group One	N	18	44	62
	%	29	71	100
Group Two	N	14	74	88
	%	15.9	84.1	100
Group Three	N	17	69	86
	%	19.8	80.2	100
Total	N	49	187	236
	%	20.8	79.2	100

Table 3 indicates that students' reading speed scores show no meaningful difference by age group [$F_{(2\text{-}233)}$=2.75, p>.05]. However, a meaningful difference is observed in reading comprehension scores by age group [$F_{(2\text{-}233)}$=4.37, p<.05]. According to Scheffe test results, a difference is identified between Group 1 ($\bar{X}$=47.18) and Group 3 ($\bar{X}$=51.34) in favor of Group 3. Similarly, a meaningful difference is observed for students' mathematical problem-solving scores by age group [$F_{(2\text{-}05)}$=5.29, p<.01]. According to Scheffe test results, differences are identified between Group 1 (=46.39) and Group 2 ($\bar{X}$=50.78) in favor of Group 2, and between Group 1 ($\bar{X}$=46.39) and Group 3 (=51.76) in favor of Group 3.

According to the students' chi-square test results for the correlation between their preschool attendance and their age group, it is observed that a differentiation exists for students' preschool attendance by their age group (χ^2=8.83, p<.05), and that the preschool attendance percentage for students in Group1 is much lower than those in Groups 2 and 3 (Table 4).

Students' t-test results for Bracken Basic Concept Scale-Expressive Form school readiness

Table 3: ANOVA test results for reading speed, reading comprehension and problem solving scores by age groups students'

			Sum of squares	*sd*	*Mean of squares*	*F*	*p*	*Source of difference*
P*Reading Speed*	Between groups	525.4	2	262.71	2.75	.07	-	
	Within groups	22284.36	233	95.64				
	Total	22809.79	235					
Reading Comprehension	Between groups	698.236	2	349.12	3.54	.03	1-3	
	Within groups	22963.51	233	98.5				
	Total	23661.75	235					
Problem Solving	Between groups	1009.44	2	504.72	5.29	.01	1-21-3	
	Within groups	19570.92	205	95.4				
	Total	20580.3	207					

Table 4: Students' Chi-Square test results for their preschool attendance by age

		Not attended preschool	*Attended preschool*	*Total*
Group One	N	40	25	65
	%	61.5	38.5	100
Group Two	N	34	56	90
	%	37.7	62.2	100
Group Three	N	39	49	88
	%	44.3	55.7	100
Total	N	113	130	243
	%	46.5	53.5	100

subtests, final tests and total scores by their school attendance given in Table 6 show that students who attended preschool have significantly higher scores in each subsection and in total scores than students who did not attend preschool ($p < .001$).

Students' t-test results for reading speed, reading comprehension and problem-solving scores by their school attendance show that students who attended preschool are significantly more successful in every field than those who did not attend preschool ($t_{(244)}=-7.89$, $p<.001$; $t_{(244)}=-6.63$, $p<.001$; $t_{(244)}=-6.65$, $p<.001$).

DISCUSSION

This paper was conducted to analyze the basic concepts knowledge and academic development of students from different age groups who start their first year of school.When students' basic concepts knowledge are compared, a significant difference in terms of the Numbers/Counting subtest is observed between age groups, while no meaningful difference is found for other concepts (Colors, Letters/Sound, Size/Comparison and Shapes). It is determined that Group 1 (66-71 month-olds) has a meaningful difference compared to Group 2 (72-77 month-olds) and Group 3 (78-83 month-olds), and that this difference favors Group 1. No meaningful difference is found between Groups 2 and 3. In terms of school readiness, a meaningful difference between Groups 1 and 2, in favor of group 2, is found in the pretest. No meaningful difference exists for the other groups. It is believed that this difference is caused by the Numbers/Counting subtest. In the last test, the existence of a difference is observed only for Letters/Sound, and no difference is present for the other concepts and school readiness. This difference was between Group 1 and Group 2, and favored Group 2.

The first year mathematics course consists of addition, subtraction and solving problems with two operations. Knowledge of numbers up to three digits, counting objects shown in a picture, and telling the amount are expected in the Bracken Basic Concept Scale's Numbers/Counting subtest. Recognizing numbers and stating the amount of objects are lower-level skills compared to abilities like addition, subtraction and

Table 5: Student's t test results of Bracken Basic Concepts Scale – expressive form, reading speed, reading comprehension, and problem solving final test results by their school attendance

	Preschool attendance	*N*	*S*	*sd*	*t*
Color	Attended	119	46.3611	12.06079	249	-5.82***
	Not attended	132	53.2805	6.07777	249	
Letter/Sound	Attended	119	46.3679	6.01797	249	-5.81***
	Not attended	132	53.2744	11.63748	249	
Numbers/Counting	Attended	119	45.8567	10.72253	249	-6.77***
	Not attended	132	53.7352	7.59103	249	
Size/Comparison	Attended	119	46.7370	11.18914	249	-5.15***
	Not attended	132	52.9417	7.72497	249	
Shape	Attended	119	46.7073	10.29027	249	-5.21***
	Not attended	132	52.9684	8.75960	249	
Total	Attended	119	359.9160	98.17397	249	-8.33***
	Not attended	132	460.7576	93.60972	249	
Reading Speed	Attended	117	45.2768	7.64012	244	-7.89***
	Not attended	129	54.2838	9.98107		
Reading Comprehension	Attended	117	45.9064	10.37274	244	-6.63***
	Not attended	129	53.7128	8.04296		
Problem Solving	Attended	98	45.4682	9.11044	214	-6.65***
	Not attended	118	53.7637	9.13564		

problem solving. For this reason, it is believed that there is no difference between students by the end of the year.

At the end of an 8 month long educational year, it was observed that all children's Colors, Numbers/Counting, Size/Comparison and Shapes concepts had developed and the school readiness level had become equal amongst all age groups. This is due to the fact that healthy 66-month-old children eventually gain these concepts. Developmental scales also support this situation.

Teaching letters is not carried out in school readiness activities, especially in preschool education, as it is in Europe and the USA. Only phonetic awareness activities are taught, and the beginning, end and middle sounds of names for objects are given by auditory methods. For this reason, children start school without being taughtthe letter-sound relation. A child may not be able to learn letters even though he or she received a preschool education. It may be thought that the absence of a difference between groups in the Letters/Sound subtest's pretest is due to this matter. When learning the letters,the effectiveness of age is thought to be the reason for the significant difference between Group 1and Groups 2 and 3 in the final test.

Evaluations done at the end of the academic year found that 79.2 percent of the students learned to read, while 20.8 percent did not. No meaningful difference was found between learning to read and age group. During a meeting with the first grade teachers of the students who participated in this paper, teachers stated that after completing the 3-month long preparation course, they allocated a large amount of time to literacy in contemplation of any negative effects on the younger age group.They also slowed the program down, frequently did repetitions, and waited for all of the children to obtain the literacy skills. The age difference was no longer an important factor when learning to read, due to the time allocated for reading.

No significant difference by age group was found when students' reading speed was analyzed. The average reading speed for all students who started to read was 25.02 words per minute. In their paper, Erden et al. (2002) stated that the average reading speed of first-year children was 45.33 words per minute. Slowing the program down and allocating more time to reading resulted in learning reading delayed to the second semester. This situation may have negatively affected the reading speed.

Reading comprehension differs by age group. This difference was determined to be between Group 1 and Group 3, and favors Group 3. It is meaningful that no difference exists between Group 1 and Group 2, so it may be necessary to reach a certain age in order to learn reading comprehension. Knowing the meaning of a word that is read is not enough for reading comprehension. Aside from knowing the meaning of a word, word comprehension, word evaluation, understanding reading, mentally structuring a sentence, and making correlations between words are also required skills (Yilmaz 2008).

In a paper that shows results similar to the findings of this work, Morrison et al. (1997) studied the time taken by younger and older students who started their first year and learned to read; itwas found that older students are slightly more successful in reading than younger students. There are papers stating that age is an important factor for reading comprehension, not only for children but also for adults (Hannon and Daneman 2009).

A meaningful difference by age group is found between groups for problem-solving skills. This difference is determined to be between Groups 1 and 2 in favor of Group 2, as well as between Groups 1and 3 in favor of Group 3. No difference is observed between Groups 2 and 3. These findings are similar to the reading comprehension results. The younger age group has a lower success level compared to the other groups. This finding is also supported in the Morrison et al. (1997) paper on mathematics. Bloom (1995) also presented a correlation between students' success in reading comprehension and mathematics (cited inYilmaz 2008). In her paper on childrens' readiness for primary education based ontheir skills in mathematics, Unutkan (2007) determined that 5-year-old children have lower skills in mathematics than other age groups. Ari (2014) identified that students who lacked readiness were found to have difficulty performing activities and often finished their work late; hence, they felt boredom, reluctance and lacked self-confidence.

The relationship between students' preschool attendance and their age group is studied, and it is found that students in Group 1 have a lower percentage of preschool attendance compared to the other two groups. In Turkey, pre-

school education begins by attending a preparation class for one year. Starting as a first-year student instead of attending a preparatory class has made it difficult for younger children to benefit from preschool. However, because of their age, the other two groups had a better opportunity to benefit from preschool education.

It was observed that students who attended preschool had more success in all measurement tools compared to students who did not attend preschool. The existence of a positive effect of early childhood education on a child's cognitive development has also been supported by papers.For example, in her paper, Unutkan (2003) determined that—compared to those with no preschool education—children who had apreschool education started primary education more prepared, and passed primary education more smoothly even when they came from an unfortunate background. Similarly, in their paper, File and Gullo (2002) showed that children starting preschool at the ages of three and four are more successful than the children starting at the age of five. It was stated that the early childhood years are indispensable in literacy education, and activities done during the early childhood period are important for the development of literacy skills (Unutkan 2013).

This paper shows us that 66-month-old children can be ready for school, and that they can succeed at learning to read during the educational period with the aid of a teacher's strong interest and support. However, this result does not show that they will be successful in attaining success in reading comprehension and mathematical problem solving, which is required to succeed in the second grade curriculum. Childrens' attendance in primary school at an early age results in insufficient benefits from preschool education or complete non-attendance in preschool; this means denying all experiences and papers showing the importance of preschool education giving a child the opportunity to attain apreschool education at least one year before starting primary school must be accepted as the child's right. The academic success of the second and third years of 66-month-olds—or older children who started school during the 2012-2013 academic year—can be monitored; their social and emotional developments, which are not addressed in this paper, can also be evaluated.

Bagçeli-Kahraman and Basal (2013) have stated that some children are not ready for the first grade; starting them anyway can cause various problems that might distract the child from school.

As a result of the completed research and the negative feedback given by teachers shortly after the implementation, the Ministry of Education changed the second paragraph of the Regulation on Primary Education Institutions' 15th article, which was promulgated on 27 August 2003 in the Official Gazette no: 25212 (MEB 2013):

"With a petition written by the parents for 66-67 and 68 month old children, and with a medical report certifying as "not ready to start primary school" for 69, 70 and 71 month old children, headships can postpone the registration of children who are eligible for a registration by age for one year, or orientate them to preschool education."

After the age five law was implemented for two yearsfrom1983-1985, these practices were abandoned because of the problems experienced (Güçlü 2012).

However, the accumulated knowledge of educational sciences along with present technological conditions developed education policies to the point wherethe trial and error method wascompletely dropped. An education carried out with decisions supported by a scientific community will beget an undisturbed and safe development for children throughout their academic lives.

If starting at the age of five for first grade continues, however, arrangements need to be made on thefollowing issues, among many others: Because having students with different levels of readiness in the same class negatively affects students, teachers and the learning process, different first grade classes must be established according to age and/or level of readiness. Next, the class schedule should be revised according to different age–readiness groups, with the course materials accurately reflecting each specific group (Ari 2014).

CONCLUSION

To conclude, while the starting age for school does not cause much difference in learning basic concepts, primary schools' target gains do not consist of these. The starting age for school causes significant differences in terms of high-level cognitive processes such as problem solving and reading comprehension. The student must reach a certain level of maturity in order to

gain these types of cognitive processes, which are expected during the first year. The existence of individual differences between children must never be forgotten; the Turkish educational system must take this into account. Making decisive legal regulations will give a sufficient amount of opportunity to children so they can benefit from early childhood education, and this is indispensable.

RECOMMENDATIONS

1. Follow-up papers can be done to see the academic development of students who start primary school at different age groups.
2. The academic development of students who start primary education at an early age, including those from different countries, can be compared.
3. In this paper only the academic development of students was taken into consideration. Other variables including emotional and social development must also be taken into consideration.

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