

Comparison of Academic Achievement Levels of Students Beginning the Elementary School at Different Ages

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Abstract

This study aims to make a comparison of various lessons' mean exam scores achieved at the first, second, third and fourth grade by students who started elementary school at 60-66 months and those who started at or above 69 months as these students started the elementary school at the same time after an amendment in elementary education law in 2012. Screening method was employed as the study analyzes an existing situation. Target population of the study is 483 elementary school students attending the fourth grade at 27 elementary schools in Sincik district center of Adıyaman province in academic year 2015-2016. 249 of the students are male and 234 are females. The number of students who started elementary school between 60-66 months and attending the fourth grade is 74 while the number of students who started elementary school over 69 months and attending the fourth grade is 409. In order to ensure the equality of students in numbers, a total of 148 students were selected as sample group consisting of 74 students from each category. The findings were obtained by calculating the mean exam scores achieved by the students in Turkish, mathematics and life sciences at the first, second and third classes and in Turkish, mathematics, social sciences, physical sciences and English lessons at the first semester of fourth class. The exam scores of the students were obtained from e-school system of the Ministry of Education. It was concluded that there is a significant difference between the mean exam scores in Turkish, mathematics and life sciences at the first, second and third classes and in mathematics, social sciences, physical sciences and English lessons at the fourth class achieved by the students who started the elementary school at or above 69 months and those achieved by the students who started the elementary school at 60-66 months.

Keywords: Different age groups, level of academic achievement, starting the elementary school.

1. Introduction

The concept of "school learning maturity" expresses the child's reaching the level to achieve the education at school and it varies among children (Yazıcı, 2002). The schooling age also varies from one country to another. School maturity means the child's readiness to school in physical, emotional, mental and social terms (Yavuzer, 2010). It means that the child reaches the level to achieve school education (Yazıcı, 2002). It is related to the child's reaching maturity level in terms of physical, mental, social and emotional development and his ability to fulfill his social responsibilities at school (Ülkü, 2007).

There are findings of studies which show that there is significant difference between children starting the elementary school at different ages with respect to their literacy, duration of concentrating on lessons and social responsibility behaviors at the end of the first year (Gündüz and Çalışkan, 2013). In addition to this, whether the difference in academic achievement levels of students starting school at different ages continues in the later grades of their education or not must also be determined as it may be a significant indicator in taking correct decisions on children's age to start elementary education. In this context, the purpose of this study is to make a comparison of various lessons' mean exam scores achieved at the first, second, third and fourth grade by students who started elementary school at 60-66 months and those who started at or above 69 months as these students started the elementary school at the same time after an amendment in elementary education law in 2012. The study seeks an answer whether there is significant difference between the mean exam scores achieved by the students, who started elementary school simultaneously at 60-66 months or above 69 months, in Turkish, mathematics and life sciences at the first, second and third classes and in Turkish, mathematics, social sciences, physical sciences and English lessons at the first semester of fourth class.

2. Method

This study uses screening method as it analyzes an existing situation. This model tries to describe the subject matter, individual or entity as it is, without making any changes on it (Karasar, 2013; Balcı, 2015). As most of the problems related to education can be defined, the researches by screening method provide significant contribution to theoreticians and practitioners in comprehension and transfer of knowledge.

2.1 Universe and Sample

Target population of the study is 483 elementary school students attending the fourth grade at 27 elementary schools in Sincik district center of Adıyaman province in academic year 2015-2016. 249 of the students are male and 234 are females. The number of students who started elementary school between 60-66 months and attending the fourth grade is 74 while the number of students who started elementary school over 69 months and

attending the fourth grade is 409. In order to ensure equal number of students in sample group, a total of 148 fourth-grade students were selected as sample group consisting of 74 students from each category. According to purposeful sampling method, all students (74) in the sampling group who started elementary school between 60-66 months were included in the study. Among 409 students who started elementary school over 69 months, 74 students were selected in equal numbers from 27 elementary schools through random sampling method.

2.2 Data Collection

The data were obtained by calculating the mean exam scores achieved by the students at their lessons in the first, second and third classes and at the first semester of fourth class. The exam scores of all students were obtained from e-school system of the Ministry of Education.

3. Findings

This part of the study shows the mean exam scores achieved by the students, on the basis of their schooling ages, at their lessons in the first, second and third classes and at the first semester of fourth class. When z-scores of the students' exam scores are calculated, it is seen that exam scores show a normal distribution of (+3<.....-3>). The arithmetic means of the exam scores achieved at the first, second, third class and the first semester of fourth class by 74 students who started elementary school at 60-66 months were calculated. Likewise, arithmetic means of the exam scores achieved at the first, second, third class and the first semester of fourth class by 74 students who started elementary school above 69 months were calculated. The mean exam scores of the two age categories were compared by applying independent group t-test analysis as parametric test.

Table 1. Comparison of Averages of Students' The Fourth Grade Exams

| | Age groups (month) | Number of students | \bar{X} | SD | t | P |
|---|--------------------|--------------------|-----------|-------|------|-------|
| The averages of fourth grade sciences lesson exams | 60-66 | 74 | 65,18 | 15,17 | 3,97 | ,000* |
| | 69 + | 74 | 74,30 | 14,67 | | |
| The averages of fourth grade English lesson exams | 60-66 | 74 | 65,62 | 17,55 | 3,42 | ,001* |
| | 69 + | 74 | 75,28 | 17,75 | | |
| The averages of fourth grade mathematics lesson exams | 60-66 | 74 | 59,81 | 18,40 | 3,88 | ,000* |
| | 69 + | 74 | 71,52 | 18,29 | | |
| The averages of fourth grade social sciences lesson exams | 60-66 | 74 | 63,98 | 15,80 | 4,25 | ,000* |
| | 69+ | 74 | 74,67 | 14,71 | | |

*P<.001

As seen in Table 1, there is a significant difference in mean exam scores achieved by the students at different schooling ages in sciences lesson at the first semester of fourth class (t=3,97; p=,000). The mean exam scores achieved in physical sciences lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

There is a significant difference in mean exam scores achieved by the students at different schooling ages in English lesson at the first semester of fourth class (t=3,42; p=,001). The mean exam scores achieved in English lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

There is a significant difference in mean exam scores achieved by the students at different schooling ages in mathematics lesson at the first semester of fourth class (t=3,88; p=,000). The mean exam scores achieved in mathematics lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

There is a significant difference in mean exam scores achieved by the students at different schooling ages in social sciences lesson at the first semester of fourth class (t=4,25; p=,000). The mean exam scores achieved in social sciences lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

Table 2 shows the mean exam scores achieved by the students at different schooling ages when they were in the third class.

Table 2. Comparison of Averages of Students' The Third Grade Exams

| | Age groups (month) | Number of students | \bar{X} | SD | t | P |
|--|--------------------|--------------------|-----------|-------|------|-------|
| The averages of third grade life sciences lesson exams | 60-66 | 74 | 68,91 | 18,06 | 3,50 | ,000* |
| | 69 + | 74 | 78,44 | 14,80 | | |
| The averages of third grade mathematics lesson exams | 60-66 | 74 | 55,74 | 17,82 | 5,59 | ,000* |
| | 69 + | 74 | 72,36 | 18,30 | | |
| The averages of third grade Turkish lesson exams | 60-66 | 74 | 61,82 | 18,06 | 4,15 | ,000* |
| | 69 + | 74 | 73,78 | 16,97 | | |

*P<.001

As seen in Table 2, there is a significant difference in mean exam scores achieved by the students at different schooling ages in life sciences lesson at the third class ($t=3,50$; $p=,000$). The mean exam scores achieved in life sciences lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

There is a significant difference in mean exam scores achieved by the students at different schooling ages in mathematics lesson at the third class ($t=5,59$; $p=,000$). The mean exam scores achieved in mathematics lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

There is a significant difference in mean exam scores achieved by the students at different schooling ages in Turkish lesson at the third class ($t=4,15$; $p=,000$). The mean exam scores achieved in Turkish lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

Table 3 shows the mean exam scores achieved by the students at different schooling ages when they were in the second class.

Table 3. Comparison of Averages of Students' The Second Grade Exams

| | Age groups (month) | Number of students | \bar{X} | SD | t | P |
|---|--------------------|--------------------|-----------|-------|------|-------|
| The averages of second grade life sciences lesson exams | 60-66 | 74 | 71,43 | 13,99 | 4,37 | ,000* |
| | 69+ | 74 | 80,72 | 11,78 | | |
| The averages of second grade mathematics lesson exams | 60-66 | 74 | 68,60 | 15,20 | 3,92 | ,000* |
| | 69+ | 74 | 77,94 | 13,66 | | |
| The averages of second grade Turkish lesson exams | 60-66 | 74 | 68,60 | 15,20 | 3,92 | ,000* |
| | 69+ | 74 | 77,94 | 13,66 | | |

* $P<,001$

As seen in Table 3, there is a significant difference in mean exam scores achieved by the students at different schooling ages in life sciences lesson at the second class ($t=4,37$; $p=,000$). The mean exam scores achieved in life sciences lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

There is a significant difference in mean exam scores achieved by the students at different schooling ages in mathematics lesson at the second class ($t=3,92$; $p=,000$). The mean exam scores achieved in mathematics lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

There is a significant difference in mean exam scores achieved by the students at different schooling ages in Turkish lesson at the second class ($t=3,92$; $p=,000$). The mean exam scores achieved in Turkish lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

Table 4 shows the mean exam scores achieved by the students at different schooling ages when they were in the first class.

Table 4. Comparison of Averages of Students' The First Grade Exams

| | Age groups (month) | Number of students | \bar{X} | SD | t | P |
|--|--------------------|--------------------|-----------|-------|------|-------|
| The averages of first grade life sciences lesson exams | 60-66 | 74 | 68,95 | 15,22 | 4,46 | ,000* |
| | 69+ | 74 | 79,63 | 13,73 | | |
| The averages of first grade mathematics lesson exams | 60-66 | 74 | 64,08 | 15,88 | 5,47 | ,000* |
| | 69+ | 74 | 78,02 | 14,95 | | |
| The averages of first grade Turkish lesson exams | 60-66 | 74 | 65,17 | 16,81 | 3,66 | ,000* |
| | 69+ | 74 | 75,38 | 16,99 | | |

* $P<,001$

As seen in Table 4, there is a significant difference in mean exam scores achieved by the students at different schooling ages in life sciences lesson at the first class ($t=4,46$; $p=,000$). The mean exam scores achieved in life sciences lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months. There is a significant difference in mean exam scores achieved by the students at different schooling ages in mathematics lesson at the first class ($t=5,47$; $p=,000$). The mean exam scores achieved in mathematics lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months. There is a significant difference in mean exam scores achieved by the students at different schooling ages in Turkish lesson at the first class ($t=3,66$; $p=,000$). The mean exam scores achieved in Turkish lesson by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months.

4. Conclusion

According to mean exam scores achieved by students in life sciences, mathematics, Turkish, social sciences, physical sciences and English lessons at the first, second, third classes and the first semester of the fourth class in elementary school, we see that the mean exam scores achieved by students starting the school over 69 months are higher than those achieved by students starting the school at 60-66 months. There are results of other researches supporting the findings of this study. For example, a study by Gündüz and Çalışkan (2013) revealed that children starting elementary school at 60-66 months are behind the other age group in terms of gaining literacy skills and mathematics scores. In a research by Öztürk and Uysal (2013), it was observed that the literacy problems with students starting the school over 69 months could be solved with a few practices while it took longer for students starting the school at 60-66 months to overcome such problems. It was also observed that the students who start school underage fall behind those starting at normal age in terms of academic success (Durna, 2014; Tural, 2013; Sirem, 2014; Aslan, 2014; Çakıcı, 2015).

Students who start elementary school at earlier ages when compared to their peers have a disadvantaged condition. Starting the elementary school at earlier ages may have negative effects on the academic achievements.

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