Determining the Relationship Between the Reading Understanding Levels of Primary School 4th Grade Students and the Success of Mathematics Course

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Abstract
In this study, it was aimed to determine the relationship between primary school 4th grade students' reading comprehension level and mathematics course success. The study group of the research consists of 80 students selected by purposive sampling method, studying in the 4th grade of official institutions in the Pazar district of Tokat province. The research was prepared using the relational survey model in the perspective of quantitative research methods. The research data were obtained through the Reading Comprehension Level Determination Test and the Mathematics Achievement Test. SPSS program was used in the analysis of the data obtained as a result of the research, Pearson Product-Moment Correlation Coefficient was used to determine the relationship between reading comprehension and mathematics achievement, and unrelated sample t-test was calculated to determine the significance between students' reading comprehension level and mathematics course success according to gender variable. In this context, in the study, a positive and significant high-level relationship was found between the reading comprehension level of 4th grade students and their success in mathematics courses. According to the gender variable, a significant difference was found in favor of female students when both the reading comprehension levels and mathematics course achievements of the students were compared.
Keywords : Reading, reading comprehension, mathematics achievement.

1. Introduction

When the Turkish Education System is examined, it is possible to say that students of different ages and education levels experience problems at almost every stage of the education system, especially in the field of mathematics. As a matter of fact, the PISA (Programme For International Student Assessment) results, which evaluated the achievements of students in the 15-year-old group in some basic fields, in which 79 countries participated in 2018, confirm the assertion we have put forward above. When the research results are examined, although Turkey has progressed 8 steps in the ranking among OECD (Organization for Economic Co-peration and Development) countries in the field of mathematics, according to the previous research, it could only find itself in the 42nd place (Ministry of National Education, [MEB], 2019).

In addition to this research conducted at the international level, the statistical information shared with the public by ÖSYM (Student Selection and Placement Center) of the Higher Education Institutions Examination, which is held every year for student admission to universities in our country, shows that the students taking the exam experience some problems in the field of mathematics. In the Higher Education Institutions Exam, which consists of two different sessions: Basic Proficiency Test and Field Proficiency Test, the correct answer averages in the two tests of 40 questions in the field of mathematics applied to students are 5.54 and 5.29, respectively. (Student Selection and Placement Center, [ÖSYM], 2022) Recently, the data put forward by students, whom we can consider as the most important part of the education system in Turkey, regarding the field of mathematics, has begun to be responded to by the competent authorities. In this context, we see that some projects have been put forward by the Ministry of National Education with the concern that the undesirable attitudes and anxiety that students at different grade levels may develop regarding mathematics course may negatively affect the students' course success in this field. The Mathematics Digital Education Platform, developed by the Ministry of National Education, aims to associate life and mathematics, to endear mathematics to students with various games that vary according to grade and age levels, and to increase curiosity in the field of mathematics with interesting hypotheses.

Likewise, Support and Training Courses, which are carried out by the Ministry of Education (Ministry of National Education) and enable secondary and secondary school students to receive additional training in basic

courses, especially mathematics, aim to improve students' mathematical skills. Although we accept that all the studies carried out will definitely have positive reflections on the students, we can say that the mathematical skills of students, especially those with low socio-economic levels, are not at the desired levels, based on our conversations and observations with education stakeholders working in the field. It is very easy to observe the academic status of students who have completed their primary school education in educational institutions that include primary and secondary school levels during their secondary school education. The opinions of the teachers who taught mathematics to 5th grade students in these schools were that the problems experienced by the students in reading comprehension negatively affected their mathematics success. Again, the same teachers stated that especially the question styles that are described as new generation questions, in which the questions are associated with daily life and contain more than one outcome in their structure, cannot be understood by the students; Accordingly, he expresses his opinion that the questions cannot be answered by the students. In addition, mathematics teachers working in secondary schools argue that some students who have moved from primary school to secondary school level have problems in reading, and that some children who are learning to read have problems understanding what they read.

As a result, considering the opinions of education stakeholders, it is thought that students who have problems with reading comprehension experience failure in mathematics lessons, and the problem of reading comprehension begins at the primary school level and continues. Therefore, determining the relationship between 4th grade students' reading comprehension levels and mathematics course success constitutes the problem part of this research.

1.2. Purpose of the research

This study aims to find out whether there is a relationship between the reading comprehension levels of 4th grade primary school students and their mathematics success, and if there is a relationship between two variables (reading comprehension and mathematics success), in which direction (+, -) this relationship is.

Within the framework of the above main purpose, answers were sought to the questions regarding the following sub-objectives.

1) Is there a significant relationship between 4th grade primary school students' reading comprehension levels and mathematics course success?

2) Is there a significant relationship between 4th grade primary school students' reading comprehension levels and mathematics course success according to gender?

1.3. Importance of Research

According to Deniz (2013), students whose reading comprehension skills are not developed cannot achieve success in mathematics classes. For this reason, it is very important for students to read correctly and interpret what they read correctly in terms of understanding the problems in mathematics lessons.

In this study, it is thought that the relationship between 4th grade primary school students' reading comprehension levels and mathematics course success will be determined, and the results obtained will contribute to other researchers. The results obtained from the study will benefit from redefining the vision of Turkish teaching in primary schools, examining the reading comprehension processes of primary school students, and investigating the relationships between the reading comprehension levels of the same students and other courses and fields.

2. Related Literature

2.1. Read

According to Aytaş (2003), reading is a complex activity that includes various activities of the five senses and the brain's attempts to make sense of it. In order for the act of reading to occur, five sense organs must be used effectively. Of course, in addition to directly associating the act of reading with the visual sense organ, it should not be forgotten that other sense organs also play an important role in making sense of concepts in the learning process. Based on this, the complex mental process mentioned must be completed with a holistic approach. As a matter of fact, it is very important to have a purpose that motivates the mind in order to increase the efficiency of reading and to achieve success in this action. Because it is of great importance that the reading meets the needs determined by the human mind at that moment. A reading action in which the mind is not included in the process will not achieve its purpose. In this context, the most important purpose of reading is to see objects, shapes, texts, numbers, visuals, etc. It means making sense of and comprehending all kinds of stimuli in the mind. Then, it is possible to say that the acts of reading and understanding are a whole and that the mental process that begins with reading continues with understanding.

2.2. Reading Comprehension

According to Kanmaz (2012), reading comprehension is the completion of two different processes, reading and comprehension, with a cause-effect relationship. Reading comprehension has an important place in the realization of learning. In purposeful learning activities, the act of reading comprehension contributes greatly to the success of the process. As a matter of fact, it is not possible to say that information that is not given meaning in the mind has been learned. In this context, it is critical to provide students with reading comprehension skills in order to achieve their teaching goals. Reading comprehension skill constitutes one of the learning areas of the Turkish course, and it is aimed to provide students with this skill in the Turkish course. However, when we consider the impact of reading comprehension skills on learning, it would not be an exaggeration to say that it is wrong to limit reading comprehension skills only to Turkish lessons. As a matter of fact, when the literature is examined, many studies show that reading comprehension skills directly or indirectly affect students' success in other courses, especially mathematics.

In Erdem's (2016) study to determine the relationship between mathematical reasoning and reading comprehension in 8th grade students, he found a significant positive relationship between the two variables.
In his research, Yılmaz (2011) concluded that there was a positive relationship between the reading comprehension skills of fourth grade primary school students and their mathematics achievement, and determined that students who could understand what they read well received better scores in mathematics.

3. Method

In this study, the relational screening model, one of the quantitative research methods, was used to determine the relationship between the reading comprehension skills and mathematics achievements of 4th grade primary school students. These research models aim to determine the existence or degree of relationship between two or more variables. The relationship scan model includes two types: correlation type relationship scan and comparison type relationship scan. (Köse, 2017: 113) While the study examined whether there was a significant relationship between the reading comprehension skills and mathematics achievements of 4th grade primary school students, the reasons for the possible positive or negative relationship between these two variables were not focused on. In this context, the correlation type relational screening model was used in the research.

3.1. Population and Sample

This research was completed by focusing on the 4th grade students of primary school in Pazar district of Tokat province. The population of the research consists of 4th grade students studying in Pazar district of Tokat province, and the sample consists of 80 students determined by purposeful sampling method, which is one of the non-probability sampling methods. According to Ural (2011: 43), in the purposeful sampling method, the researcher determines the units to be tested based on prior knowledge, experience and observation, according to the purpose of the research, at his own discretion. Since the researcher bases his judgments and judgments on the sample determination process, he must have an idea about the universe.
The distribution of the 80 students who participated in the research in Pazar district of Tokat province according to their gender is shown in Table 1.

Table 1: Distribution of students included in the sample by gender

Gender	f	%
Female	48	60
Male	32	40
Total	80	100

When Table 1 is examined, out of a total of 80 students included by the purposeful sampling method, 48 are girls and 32 are boys, and 60% of the total number of students are girls and 40% are boys.

3.2. Data Collection Tools

In the research, the Reading Comprehension Level Determination Test and the Mathematics Achievement Test, consisting of 20 multiple-choice questions, were prepared in order to determine the relationship between the reading comprehension levels of primary school 4th grade students and their mathematics course success. While preparing these tests, 4th grade primary school Turkish and mathematics textbooks were used.

3.2.1. Reading Comprehension Level Determination Test

While preparing the Reading Comprehension Level Determination Test, the reading comprehension questions in the End of Theme Evaluation Studies in the last parts of the eight units in the primary school 4th Grade Turkish textbook were examined and the ones suitable for the purpose of the study were determined. In the relevant test,

which included five different texts, four multiple-choice questions were selected for each text, resulting in a total of 20 multiple-choice questions. While selecting reading comprehension questions suitable for the purpose of the study from the End of Theme Evaluation Studies of the Turkish textbook, expert opinions were taken from two Turkish teachers and one classroom teacher.

3.2.2. Mathematics Achievement Test

While preparing the Mathematics Achievement Test, the topics that should be covered until the date of the research were determined according to the united annual plan from the themes in the primary school 4th grade curriculum. In this context, 20 multiple-choice questions that require problem-solving skills on related topics have been prepared.

The topics that should be covered in the 4th grade Mathematics course until the date of the research and the question distribution of the topics are shown in Table 2.

Table 2: Distribution of topics and number of questions in the mathematics achievement test

Topics	Guestion Number
Addition	4
Subtraction Process	4
Multiplication	4
Division	4
Fractions	4
Total	20

When Table 2 is examined, it can be seen that in the Mathematics Achievement Test, 4 questions were taken from each of the subjects of addition, subtraction, multiplication, division and fractions with natural numbers, and a total of 20 questions were reached.

During the preparation of the questions in the Mathematics Achievement Test, expert opinions of two mathematics teachers and two classroom teachers were consulted, and care was taken to include intermediate level questions appropriate to the student's level, which include problem-solving skills, in the test.

3.2.3. Determining Reading Comprehension Level and Scoring Mathematics Achievement Test

The tests used in the study were evaluated independently of each other. In two tests consisting of 20 questions, "1" point was given for each correct answer, and "0" point was given for each incorrect or unanswered question. In this context, the minimum score that can be obtained from the Reading Comprehension Level Determination Test and Mathematics Achievement Test is 0; The maximum score is 20.

3.2.4. Reliability and Validity Procedures for Determining Reading Comprehension Level and Mathematics Achievement Test

*3.2.4.1. R*eliability

According to Kabakçı Yurdakul (2013), reliability is an indicator of how precisely a measurement tool measures the feature or features it measures. According to Karasar (2012), Kr-20 is used when analyzing items such as item difficulty and item discrimination in the test. According to some studies, a reliability coefficient of 0.70 and above in performance tests indicates a good reliability coefficient. In this context, both tests were tested on ten 4th grade students who were not included in the sample in order to calculate the reliability coefficients before the data collection phase, and the reliability coefficient of the reading comprehension level determination test was found to be 0.91, and the reliability coefficient of the mathematics achievement test was found to be 0.70. In light of these data, it is possible to say that both tests are safe.

Item difficulty (p) is the percentage of correct answers. Questions with a difficulty level of 0.81 and above are considered very easy, between 0.61-0.80 are considered easy, 0.41-0.60 are considered medium, 0.21-0.40 are considered difficult, and below 0.20 are considered very difficult. It is desirable for the estimated correct answer rate to be around 0.50, and both relatively easy and difficult questions can be included (Baştürk, 2014). According to Büyüköztürk (2012), item discrimination is the capacity to distinguish between people who have the characteristic measured by the test at the maximum level and those who have it at the minimum level. According to Baştürk (2014), items with an item discrimination index of 0.40 or higher are considered very good, while items with an item discrimination index between 0.30 and 0.39 are considered quite good. Items with an item discrimination index between 0.20 and 0.29 should be developed and added to the test. . However, those

with an item discrimination index below 0.20 should be excluded from the test without even being subjected to the development process.

Item difficulty and item discrimination values of the reading comprehension level determination test and the mathematics test are given in Table 3.

Table 3: Item difficulty and discrimination of the reading comprehension level determination test and the mathematics test

Reading Comprehension Level Determination			Mathematics Achievement Test		
Questions Item	Difficulty Item	Discrimination	Questions Item	Difficulty Item	Discrimination
M1	.73	.51	M1*	.44	.19
M2	.78	.36	M2	.65	.47
M3*	.80	.24	M3*	.63	.27
M4	.78	.32	M4*	.63	.21
M5*	.80	.29	M5	.70	.31
M6	.79	.31	M6*	.64	.25
M7	.74	.42	M7	.65	.44
M8*	.79	.23	M8	.53	.30
M9*	.80	.23	M9	.61	.35
M10	.75	.40	M10	.64	.31
M11	.80	.40	M11	.59	.50
M12	.81	.47	M12	.53	.50
M13	.74	.45	M13	.68	.59
M14	.78	.63	M14	.68	.43
M15	.80	.35	M15	.70	.51
M16	.83	.53	M16	.74	.57
M17	.86	.49	M17	.73	.31
M18	.83	.32	M18*	.78	.21
M19*	.86	.21	M19*	.69	.29
M20	.84	.53	M20	.65	.37

When Table 3 is examined, the questions M3=.24, M5=.29, M8=.23, M9=.23 and M19=.21, which had a discrimination value of less than 0.30 in the reading comprehension level determination test, were developed to increase the discrimination value and were used in the test. . In the Mathematics Achievement Test, the questions M1=.19, M3=.27, M4=.21, M6=.25, M18=.21, M19=.29 were developed and used in the test to increase the discrimination value.

3.2.4.2. Validity

Expert opinion was taken for the reading comprehension level determination test and mathematics achievement test developed by the researcher; A specification table was prepared to determine the content validity of the tests. A preliminary application was made to determine the validity of the prepared tests; Students included in the preliminary application were not included in the determined sample.

3.3. Collection of Data

The data obtained from the research were collected from 80 primary school 4th grade students in the Pazar district of Tokat province. Before the data collection process, Pazar District Directorate of National Education was informed. The schools included in the sample of the previously determined research were visited one by one and all necessary explanations were made to the school principals and 4th grade teachers about the Reading Comprehension Level Determination and Mathematics Achievement Test to be applied to the students and the way the tests were applied. During the application phase of the tests, students were given 40 minutes for each test. The tests were administered to students by classroom teachers. It was specifically requested from the classroom teachers that the students should be informed that the tests to be applied will be used for a research and that there is no purpose of grading. In this way, it was aimed to prevent any test anxiety that may occur in students.

3.4. Analysis of Data

In the study, correct answers in the Reading Comprehension Level Determination Test and Mathematics Achievement Test applied to the students were coded with the value "1" and the items that were incorrect or left blank were coded with the value "0" and converted into numerical data. The answers given to two tests by 80 students included in the sample for the research were entered into the SPPS (Statistical Packet For Social Studies) program, taking into account the gender variable.

Pearson Product Moment Correlation ("r") was used to determine the relationship between students' reading levels and mathematics achievement. According to Şahin (2017), the Pearson Product Moment Correlation coefficient, which is used when the relationship between two variables is desired to be determined, indicates that there is a relationship between two variables ranging between -1.00 and +1.00, while a coefficient of .00 indicates that there is no significant relationship between the two variables.

To determine how the relationship between students' reading levels and mathematics achievement changes according to the independent variable gender; The t test, one of the parametric tests, was used. The t test is used to find out whether there is a significant difference between two unrelated groups.

4. Results

As a result of the data obtained from the study, the average scores of the students from the Reading Comprehension Level Determination Test and Mathematics Achievement Test are given in Table 4.

Table 4: Average scores from the reading comprehension level determination test and mathematics achievement test

Test	Mean (X)	Standart Deviation (S)	N
OADBT	15,96	3,08	80
MBT	12,92	3,55	80

When Table 4 is examined, it is seen that the students' average OADBT score is 15.96 and their MBT score average is 12.92. According to the results in Table 4, it can be said that the general averages of the students in OADBT and MBT are at the medium level. These averages, which are thought to be close to the same level (average level), show that there may be a relationship between students' reading comprehension levels and mathematics skills. In this context, the Pearson Moment Multiplication Coefficient (r) obtained as a result of the correlation analysis to reveal the relationship between students' reading comprehension levels and mathematics skills is shown in Table 5.

Table 5: Correlation between students' reading comprehension levels and mathematics course success

		Mathematics Achievement
Reading Comprehension Level	Pearson Moment Multiplication Coefficient (r)	**.72
	p	.00
	N	80

**Correlation is significant at the .01 level. p<.01

Looking at Table 5, it was observed that there was a high-level positive relationship (r=.72>.70) at the level of r=.72 (p<.01) between the reading comprehension levels of the fourth grade primary school students and their success scores in the mathematics course. Based on the research findings, we can say that students who have a good reading comprehension level at the fourth grade level of primary school reflect this on their mathematics course success and, accordingly, they are also successful in mathematics. Regarding the second sub-problem of the research, an unrelated groups t-test was applied to determine whether the reading comprehension levels and mathematics course success of fourth grade students differed significantly according to the gender variable. Findings regarding how students' reading comprehension levels change according to gender are shown in Table 6.

Table 6: T test results of reading comprehension levels by gender

Gender	N	X	ss	t	df	p
Female	48	16.75	3.15	2.92	78	.005
Male	32	14.78	2.59			

p<0,05

When Table 6 is examined, the reading comprehension level scores of the students included in the sample indicate a significant difference in favor of female students according to the gender variable (t=2.92, p<.05). In addition, when the arithmetic averages of the scores of the two groups from the reading comprehension level test are examined, it is seen that the scores of female students (X = 16.75) are higher than those of male students (X = 14.78).

Findings regarding how students' mathematics course success varies according to gender are shown in Table 7.

Table 7: T-test Results of Mathematics Course Achievement by Gender

Gender	N	X	ss	t	df	p
Female	48	13.93	3.15	3.31	78	.001
Male	32	11.40	3.61			

p<.05

When Table 7 is examined, the mathematics course success scores of the students included in the sample indicate a significant difference in favor of female students according to the gender variable (t=3.31, p<0.05). In addition, when the arithmetic averages of the scores of the two groups in the mathematics achievement test are examined, it is seen that the scores of female students (X = 13.93) are higher than those of male students (X = 11.40).

5. Discussion and Conclusion

The aim of the study was to reveal how the reading comprehension levels of 4th grade primary school students affect their mathematics course success and the relationship between these two variables. As a result of the analyses, it was concluded that there was a positive, highly significant relationship (r=.72 p=.000) between students' reading comprehension levels and mathematics course success. This result is similar to the positive significant relationship between mathematical reasoning and reading comprehension found in Erdem's (2016) study. In Deniz (2013)'s study, a moderately positive relationship was found between reading comprehension and mathematics performance in fifth grade primary school students. Again, in Yılmaz's (2011) study, a highly positive relationship was found between fourth grade students' reading comprehension levels and mathematics scores. When looked at, it can be said that the results of the research are similar to similar studies in the literature. When all studies are examined, it is possible to say that there is a consistent relationship between reading comprehension skills and mathematics course success.

Regarding the second sub-problem of the research, it was concluded that the reading comprehension levels and mathematics course achievements of 4th grade students differ according to the gender variable. As a result of the analyses, it was seen that both the reading comprehension level scores and mathematics achievement scores of female students were higher than male students, and after the necessary analyses, it was determined that the reading comprehension levels and mathematics achievement scores differed significantly in favor of female students. In this context, when the results of other studies are examined, we can say that Deniz (2013) and Boz (2018) reached similar results in their studies. However, in their study where Özyılmaz and Alcı (2011) examined the effect of teaching reading comprehension strategies on seventh grade reading comprehension success, they could not find a significant difference between students' reading comprehension success according to the gender variable. When the studies are examined, it is not possible to say that the gender variable positively affects reading comprehension skills and mathematics course success.

6. Suggestions

Based on the results obtained from the research, the following suggestions can be made:

1) In this study, a positive, highly significant relationship was determined between the reading comprehension level of 4th grade students and their mathematics course success. In this context, since students' reading comprehension levels directly affect their mathematics course success, reading comprehension studies should be included in Turkish lessons in order to increase mathematics course success.

2) Educational institutions can include studies that will improve students' book reading skills in order to increase their reading comprehension levels.
3) Classroom teachers can organize different activities to understand the problem, especially in problem solving, during mathematics teaching. They may use different methods to understand the problem.
4) In the research, when students' reading comprehension levels and mathematics achievements were compared according to the gender variable, a significant difference was found in favor of female students. Therefore, problem statements regarding the reasons for this difference can be determined in academic studies.
5) Academic studies based on this research can include research on how the level of reading comprehension affects the academic success of students in different courses or fields.
6) In academic studies, achievement tests can be developed at different grade levels and research can be conducted to determine whether students' reading comprehension levels affect their mathematics course success.

6. References

Aytaş, G. (2003) Okuma Gelişiminde Çocuk Edebiyatının Rolü*, Türklük Bilimi Araştırmaları,* Niğde.

Baz, B. (2018) Okuduğunu Anlama Üzerine Bir Derleme Çalışması. *Yıldız Sosyal Bilimler Enstitüsü Dergisi,* 02 (01) 28-41.

Baştürk, Ş. (2014). Ölçme Araçlarının Taşıması Gereken Nitelikler. *Eğitimde Ölçme ve Değerlendirme*. Ankara : Nobel Yayınları

Boz, İ. (2018) İlkokul 4.sınıf Öğrencilerinin Okuduğunu Anlama Düzeyi ile Matematik Problemlerini Çözme Başarısı Arasındaki İlişkinin İncelenmesi. *İnsan ve Sosyal Bilimler Dergisi,* 1 (1) 40-53.

Büyüköztürk, Ş. ve vd. (2012). Bilimsel Araştırma Yöntemleri Ankara : Pegem Akademi.

Deniz, M. (2013). *İlköğretim Beşinci Sınıf Öğrencilerinde Okuduğunu Anlama Becerisi İle Matematik Dersindeki Akademik Başarıları Arasındaki İlişkinin İncelenmesi.* Yayımlanmamış Yüksek Lisans Tezi, Mustafa Kemal Üniversitesi, Hatay.

Erdem, E., (2016) Matematiksel Muhakeme ile Okuduğunu Anlama Arasındaki İlişki: 8.Sınıf Örneği. *Necatibey Eğitim Fakültesi Elektronik Fen ve Matematik Eğitimi Dergisi*. 10(1), 393-414.

Kabakçı Yurdakul, I. (2013). Bilimsel Araştırma Yöntemleri. *Veri Toplama Araçlarında Bulunması Gereken Nitelikler*. Ankara: Anadolu Üniversitesi Yayını

Kanmaz, A., (2012). Okuduğunu Anlama Stratejisi Kullanımının, Okuduğunu Anlama Becerisi, Bilişsel Farkındalık, Okumaya Yönelik Tutum Ve Kalıcılığa Etkisi. Adnan Menderes Üniversitesi, Aydın

Karasar, N. (2012). Bilimsel Araştırma Yöntemi. *Kavramlar, İlkeler, Teknikler*. Ankara : Nobel Yayınları

Köse, E., (2017) . Bilimsel Araştırma Yöntemleri . R.,Y. Kıncal (ed). *Bilimsel Araştırma Modelleri.* (ss.99-121) içinde. İstanbul : Nobel Yayınları.

Milli Eğitim Bakanlığı. (2019). "*PISA 2018 Sonuçlarına Göre Türkiye, Her 3 Alanda Performansını Arttıran Tek Ülke*" (Erişim : 10/03/2023) https://www.meb.gov.tr/pisa-2018-sonuclarina-gore-turkiye-her-3-alanda-performansini-artiran-tek-ulke/haber/19842/tr adresinden alınmıştır.

Öğrenci Seçme Ve Yerleştirme Merkezi. (2022). " *2022- YKS Sonuçlarına İlişkin Sayısal Bilgiler*" (Erişim : 12/03/2023) https://www.osym.gov.tr/TR,23867/2022-yks-sinav-sonuclarina-iliskin-sayisal-bilgiler.html adresinden alınmıştır.

Şahin, Ç., (2017) . Bilimsel Araştırma Yöntemleri . R.,Y. Kıncal (ed). *Verilerin Analizi.* (ss.183-217) içinde. İstanbul : Nobel Yayınları.

Türk Dil Kurumu (2005) *Türkçe sözlük* (10.bs) Ankara:Türk Dil Kurumu.

Ural, A., Kılıç, İ., (2011) Bilimsel Araştırma Süreci ve SPSS ile Veri Analizi., *Evren ve Örneklem*. (ss.29-44) içinde., Ankara : Detay Yayıncılık.

Yılmaz, M., (2011). İlköğretim 4.Sınıf Öğrencilerinin Okuduğunu Anlama Seviyeleri İle Türkçe, Matematik, Sosyal Bilgiler, Fen ve Teknoloji Derslerindeki Başarıları Arasındaki İlişkinin Belirlenmesi. Mustafa Kemal Üniversitesi, Hatay