




## AN ASSESSMENT OF UNIVERSITY STUDENTS' BOOK READING LEVELS AND PROBLEM SOLVING SKILLS



Özcan Palavan<sup>a\*</sup> , Duygu Çelik<sup>a</sup> , Irem Yücel<sup>a</sup> 

<sup>a</sup>European University of Lefke, Cyprus

### Abstract

The knowledge required to be acquired changes and increases with each passing day along with the developing technology and economy. In parallel with the increase in the knowledge required to be acquired, learning environments and mutual interaction are not enough anymore to acquire this knowledge. One of the most important ways to acquire knowledge is reading books. The studies conducted with pre-service teachers revealed that they mostly read newspapers followed by books and magazines. This study was carried out to assess the university students' book reading levels and the effect on their problem solving skills thereof. "Attitude Scale Towards Reading Habit" and "Problem Solving Inventory" were used to collect the research data. The results revealed a significant difference between the student groups created based on gender in attitudes towards reading in favor of the male students. Nevertheless, in terms of problem solving skills, a significant difference was found between the student groups created based on age in favor of the age group of under 20 years, and between the student groups created based on the type of high school which the student was graduated from, in favor of the students who were graduated from science and vocational high schools against students who were graduated from anatolian high schools. Lastly, a significant relationship ( $r=.56$ ) was found between the reading levels and the problem solving skills in the positive direction, which suggests that the higher the reading attitudes the higher the problem solving skills.

*Keywords:* Reading books, problem solving, university student

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\*Corresponding author.

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## 1. Introduction

People of today's world must have strong communication and critical thinking skills, if they will ever be successful. These skills allow one to ask the right questions, do research, and continuously self-improve in accordance with the changing social order. The knowledge required to be acquired changes and increases with each passing day along with the developing technology and economy. In parallel with the increase in the knowledge required to be acquired, learning environments and mutual interaction are not enough anymore to acquire this knowledge. Hence, in order to keep up with the constantly changing information, it is necessary to produce new methods and problem-solving strategies outside of education to assist with methods of formal learning. Accordingly, one of the most important ways to acquire knowledge is reading books. Reading is not only mumbling letters and syllables, but also the process of making sense of the words read. Reading habit is mostly acquired in the family setting as a result of a long process (Camp, 2007), and is improved at school (Alan, 2020; Applegate et al., 2014). In the context of Turkey, state's negative approach to reading books, particularly in times of emergency rule, negatively affected the reading habits of the Turkish people (Ortaş, 2014). Reading books has many positive effects on our daily life, including but not limited to on personal development and acquisition of many skills such as analytical skills, critical thinking skills, making logical connections and making the right decisions (Kahyaoğlu, 2011; Kuş & Türkyılmaz, 2010; Yılmaz, 2012). These skills enable an individual to accurately define, research and solve any problem faced. A contemporary society can only be created based on individuals who are economically free, questioning, productive, inquisitive, decorated with critical thinking and problem solving skills, and gaining reading habit is the key to raising such individuals (Alan, 2020; Gömleksiz, 2004a; Phillip; 2020). It was demonstrated in a number of studies that individuals with thinking skills developed through reading can make better evaluations, produce creative solutions to problems, view events from a wider perspective, get rid of prejudices and become tolerant (Adalı, 2010; Güneş, 1999; Kartal & Çağlar Özteke, 2010; Koç & Müftüoğlu, 2008; Sever, 2004). Both Turkey and Northern Cyprus are not at the desired level in terms of reading levels when compared to other European countries. This can be attributed to the fact that there was no properly functioning education system in the Ottoman Empire, that the schooling could not develop sufficiently during the process that started with the Foundation of the Turkish Republic, and that the level of reading could not be brought to the desired level despite the education and training campaigns (Ortaş, 2014). This situation could improve if the society can be adequately educated and can grasp that reading means more than just uttering the letters. Turkish reading culture map (TOKH, 2011) reveals that only one out of every 4 individual in Turkey has the habit of reading, that people aged 65 and over generally do not read, whereas that children in the 7-14 age group read 12 or more books per year. These findings indicate that schools, especially elementary and middle schools, have a significant influence in reading books (Ortaş, 2014). The progress made in the problem solving skills of individuals by reading books is extremely valuable. Reading and comprehending what has been read are important steps in problem solving (Aydoğdu, 2008; Gooding, 2009; Olkun et al., 2010; Vilenius-Tuohimaa et al., 2008). Though is the first step to solving a problem, noticing the problem is usually the simplest of the steps to be taken in solving a problem. It is usually to produce solutions directed at solving the identified problem which is hard. As another finding that reveals the importance of reading in problem solving, Özsoy et al. (2015) determined that students with poor reading levels did not notice the

errors in their solutions, and that students with good reading levels were able to produce different solutions in their answers with confidence.

Taking into consideration that students and education can change in accordance with the spirit of the time, it will be useful to make various determinations from time to time on both the act of reading and problem solving skills. Seeking answers to certain questions and customize the education programs accordingly may assist in the development of the individuals in that regard. These questions include “Does encouraging reading at the elementary school level really work, if yes, is it maintained at the same level at the undergraduate education level or abandoned once the coercion disappears?”, “What is the relationship between reading and problem solving?”, etc. In this context, the aim of this study is to assess the university students' book reading levels and the effect on their problem solving skills thereof.

## **2. Materials and Methods**

This study has been conducted as quantitative research using the screening technique, a technique suitable for collecting information common or different aspects of university students (Robson, 2017). Convenience sampling method was used for sample selection. The research data were collected from the 146 university students who were selected via the convenience sampling and agreed to participate in the research, using the “Attitude Scale Towards Reading Habit” and the “Problem Solving Inventory”. The t-test, one-way analysis of variance (ANOVA) and the Scheffe's test were used to analyze the collected data.

### *2.1. Attitude Scale Towards Reading Habit (ASTRH)*

In this study, the “Attitude Scale towards Reading Habit (ASTRH)” developed by Gömleksiz (2004b) was used to measure the attitudes of university students towards the habit of reading. The scale comprises 30 items and its Cronbach alpha reliability coefficient was calculated as 0.88. Each of the items included in this 5-point Likert-type scale comprises five answer choices to choose from, which are, ‘5’: Strongly Agree, ‘4’: Agree, ‘3’: Undecided ‘2’: Disagree, and ‘1’: Strongly Disagree”. Nine items in the scale are reversed items and they are scored reversely. The higher the overall score obtained from the scale the more positive the attitude towards book reading.

### *2.2. Problem Solving Inventory (PSI)*

The problem solving inventory (PSI) was developed by Heppner and Petersen (1982) and adapted into Turkish by Şahin et al. (1993). Cronbach alpha consistency coefficient of the original and adapted version of the scale were calculated as .90 and .88, respectively. PSI is a Likert-type scale consisting of 35 items. Each of the items included in this 6-point Likert-type scale comprises six answer choices to choose from, which are, ‘6’: Strongly Agree, ‘5’: Moderately Agree, ‘4’: Slightly Agree, ‘3’: Slightly Disagree, ‘2’: Moderately Disagree, and ‘1’: Strongly Disagree. 14 items, that is the 1st, 2nd, 3rd, 4th, 11th, 13th, 14th, 15th, 17th, 21st, 25th, 26th, 30th and 34th items, are scored reversely. The lower the overall score obtained from the inventory the higher the problem solving skills, and vice versa (Şahin et al., 1993).

### 3. Results

Attitudes of university students towards reading habit were analyzed according to gender using the t-test. The respective results are given in Table 1.

**Table 1.** Distribution of ASTRH Scale Scores by Gender

Gender	N	$\bar{x}$	s.d.*	T	p**
Female Students	79	69,25	11,87	-2,051	0,042***
Male Students	67	74,66	19,55		

Note: \*s.d.: standard deviation, \*\*p.: probability, \*\*\*p<0,05

The analysis of the attitudes of university students towards reading habit according to the gender using the t-test revealed a significant difference between the student groups in favor of the male students {t= -2,051; p <0,05}. The mean overall ASTRH scale score obtained by the students were calculated as 74.66 and 69.25 for male and female student groups, respectively.

Attitudes of university students towards reading habit were analyzed according to the educational level of their mothers using the one-way ANOVA test. The respective results are given in Table 2.

**Table 2.** Distribution of ASTRH Scale Scores by the Educational Level of the Mother

Educational Level of the Mother*	N	$\bar{x}$	s.d.**
Elementary School	33	74.45	23.13
Middle School	39	71.59	9.14
High School	51	72.02	15.78
University	23	67.43	13.29
Total	146	71.73	16.04

Variance	SS***	df****	F*****	p*****
Inter-Group	674.332	3	.872	.457
Intra-Group	36616.250	142		
Total	37290.582	145		

Note: \*as of last school having graduated from, \*\*s.d.: standard deviation, \*\*\*SS: sum of squares, \*\*\*\*df: degrees of freedom, \*\*\*\*\*F: value on the F distribution, \*\*\*\*\*p: probability

According to Table-2, the mean overall ASTRH scale scores obtained by the students were calculated as 74.45, 71.59, 72.02 and 67.43 for university students, whose mothers graduated from elementary school, middle school, high school and university, respectively. It is noteworthy that the students' reading attitude scores were found to be inversely proportional with the educational level of their mothers, albeit not statistically significantly {t= .872; p>.05}.

Attitudes of university students towards reading habit were analyzed according to the educational level of their fathers using the one-way ANOVA test. The respective results are given in Table 3.

**Table 3.** Distribution of ASTRH Scale Scores by the Educational Level of the Father

Educational Level of the Father*		N	$\bar{x}$	s.d.**
Elementary School		41	71.49	16.62
Middle School		32	68.78	11.02
High School		42	74.31	17.54
University		31	71.61	17.60
Total		146	71.73	16.04
Variance	SS***	df****	F*****	p*****
Inter-Group	560.539	3	.722	.540
Intra-Group	36730.044	142		
Total	37290.582	145		

Note: \*as of last school having graduated from, \*\*s.d.: standard deviation, \*\*\*SS: sum of squares, \*\*\*\*df: degrees of freedom, \*\*\*\*\*F: value on the F distribution, \*\*\*\*\*p: probability

According to Table-3, the mean overall ASTRH scale scores obtained by the students were calculated as 71.49, 68.78, 74.31 and 71.61 for university students, whose fathers graduated from elementary school, middle school, high school and university, respectively. The mean overall ASTRH scale score of the students, whose fathers were high-school graduates, were found to be higher than other groups, albeit not statistically significantly  $\{t = .722; p > .05\}$ .

Attitudes of university students towards reading habit were analyzed according to their age groups using the one-way ANOVA test. The respective results are given in Table 4.

**Table 4.** Distribution of ASTRH Scale Scores by the Age Groups

Age Groups	N	$\bar{x}$	s.d.*	
under 20 years old	47	67.91	13.50	
between 20 and 25 years old	62	75.20	19.89	
over 25 years old	37	70.75	9.57	
Total	146	71.73	16.04	
Variance	SS**	df***	F****	p*****
Inter-Group	1469.838	2		
Intra-Group	35820.745	143	2.934	.056
Total	37290.582	145		

Note: \*s.d.: standard deviation, \*\*SS: sum of squares, \*\*\*df: degrees of freedom, \*\*\*\*F: value on the F distribution, \*\*\*\*\*p: probability

According to Table-4, the mean overall ASTRH scale scores obtained by the students were calculated as 67.91, 75.20, and 70.75 for university students, whose under 20 years old, between 20 and 25 years old, and over 25 years old, respectively. The differences between the mean scale scores of the student groups created based on age were not statistically significant  $\{t = 2.934; p > .05\}$ .

Attitudes of university students towards reading habit were analyzed according to the type of high school they were graduated from using the one-way ANOVA test. The respective results are given in Table 5.

**Table 5.** Distribution of ASTRH Scale Scores by the Type of High School Having Graduated From

Type of High School	N	$\bar{x}$	s.d.*	
Anatolian High School	96	73.03	15.78	
Vocational High School	31	71.32	18.24	
Science High School	19	65.84	12.51	
Total	146	71.73	16.04	
Variance	SS**	df***	F****	p*****
Inter-Group	826.375	2		
Intra-Group	36464.207	143	1,620	,201
Total	37290.582	145		

Note: \*s.d.: standard deviation, \*\*SS: sum of squares, \*\*\*df: degrees of freedom, \*\*\*\*F: value on the F distribution, \*\*\*\*\*p: probability

According to Table-5, the mean overall ASTRH scale scores obtained by the students were calculated as 73.03, 71.32, and 65.84 for university students, who were graduated from anatolian high school, vocational high school, and science high school, respectively. The mean overall ASTRH scale score of the students, who were graduated from science high schools, were found to be lower than other groups, albeit not statistically significantly  $\{t= 1.620; p>.05\}$ .

Problem solving inventory scores of university students were analyzed according to gender using the t-test. The respective results are given in Table 6.

**Table 6.** Distribution of PSI Scores by Gender

Gender	N	$\bar{x}$	s.d.*	T	p**
Female Students	79	98,11	18,44	.268	.789
Male Students	67	97,11	22,35		

Note: \*s.d.: standard deviation, \*\*p.: probability

The analysis of the PSI scores according to the gender using the t-test did not reveal a significant difference between the student groups  $\{t= .268; p>.05\}$ . The mean overall PSI scores obtained by the students were calculated as 97.11 and 98.11 for male and female students, respectively.

Problem solving inventory scores of university students were analyzed according to the educational level of their mothers using the one-way ANOVA test. The respective results are given in Table 7.

**Table 7.** Distribution of PSI Scores by the Educational Level of the Mother

Educational Level of the Mother*	N	$\bar{x}$	s.d.**
Elementary School	33	98.45	26.00
Middle School	39	100.39	14.23
High School	51	98.75	19.53
University	23	89.74	20.60
Total	146	97.70	20.27

Variance	SS <sup>***</sup>	df <sup>****</sup>	F <sup>*****</sup>	p <sup>*****</sup>
Inter-Group	1813.206	3		
Intra-Group	57735.534	142	1.487	.221
Total	59548.740	145		

Note: \*as of last school having graduated from, \*\*s.d.: standard deviation, \*\*\*SS: sum of squares, \*\*\*\*df: degrees of freedom, \*\*\*\*\*F: value on the F distribution, \*\*\*\*\*p: probability

According to Table-7, the mean overall PSI scores obtained by the students were calculated as 98.45, 100.39, 98.75 and 89.74 for university students, whose mothers graduated from elementary school, middle school, high school and university, respectively. The analysis of the PSI scores obtained by the students according to the educational level of their mothers did not reveal a significant difference between the groups { $t= 1,487$   $p>.05$ }.

Problem solving inventory scores of university students were analyzed according to the educational level of their fathers using the one-way ANOVA test. The respective results are given in Table 8.

**Table 8.** Distribution of PSI Scores by the Educational Level of the Father

Educational Level of the Father*	N	$\bar{x}$	s.d.**
Elementary School	41	98.80	19.16
Middle School	32	94.37	19.28
High School	42	96.54	22.38
University	31	101.22	19.97
Total	146	97.70	20.27

Variance	SS <sup>***</sup>	df <sup>****</sup>	F <sup>*****</sup>	p <sup>*****</sup>
Inter-Group	844.977	3		
Intra-Group	58703.763	142	.681	.565
Total	59548.740	145		

Note: \*as of last school having graduated from, \*\*s.d.: standard deviation, \*\*\*SS: sum of squares, \*\*\*\*df: degrees of freedom, \*\*\*\*\*F: value on the F distribution, \*\*\*\*\*p: probability

According to Table-8, the mean overall PSI scores obtained by the students were calculated as 98.80, 94.37, 96.54 and 101.22 for university students, whose mothers graduated from elementary school, middle school, high school, and university, respectively. The analysis of the PSI scores obtained by the students according to the educational level of their fathers did not reveal a significant difference between the groups { $t= 685$ ;  $p>.05$ }. Contrary to the distribution of the mean overall PSI scores obtained by the students by the educational level of their mothers, however, the mean overall PSI scores obtained by the students were found to have increased as the educational level of their fathers increased, albeit not statistically significantly.

Problem solving inventory scores of university students were analyzed according to their age groups using the one-way ANOVA test. The respective results are given in Table 9.

**Table 9.** Distribution of PSI Scores by the Age Groups

Age Groups	N	$\bar{x}$	s.d.*		
under 20 years old (1)	47	91.68	21.24		
between 20 and 25 years old (2)	62	103.56	18.41		
over 25 years old (3)	37	95.51	19.79		
Total	146	97.70	20.27		
Variance	SS**	df***	F****	p*****	difference
Inter-Group	4012.042	2	5.165	.007*****	2-1
Intra-Group	55536.698	143			
Total	59548.740	145			

Note: \*s.d.: standard deviation, \*\*SS: sum of squares, \*\*\*df: degrees of freedom, \*\*\*\*F: value on the F distribution, \*\*\*\*\*p: probability, \*\*\*\*\* p<0,05

According to Table-9, the mean overall PSI scores obtained by the students were calculated as 91.68, 103.56, and 95.51 for university students, whose under 20 years old, between 20 and 25 years old, and over 25 years old, respectively. One-way ANOVA analysis { $t = .007$   $p < .05$ } and The Scheffe's test revealed a significant difference between the group of students under 20 years old and the group of students between 20 and 25 years old in favor of the group of students under 20 years old, considering that the lower the score the higher the problem solving skills.

Problem solving inventory scores of university students were analyzed according to the type of high school they were graduated from using the one-way ANOVA test. The respective results are given in Table 10.

**Table 10.** Distribution of PSI Scores by the Type of High School Having Graduated From

Type of High School	N	$\bar{x}$	s.d.*		
Anatolian High School (1)	96	101.25	20.45		
Vocational High School (2)	31	90.87	18.67		
Science High School (3)	19	90.89	17.97		
Total	146	97.70	20.27		
Variance	SS**	df***	F****	p*****	difference
Inter-Group	3535.466	2	4.513	.013*****	1-2 1-3
Intra-Group	56013.273	143			
Total	59548.740	145			

Note: \*s.d.: standard deviation, \*\*SS: sum of squares, \*\*\*df: degrees of freedom, \*\*\*\*F: value on the F distribution, \*\*\*\*\*p: probability, \*\*\*\*\* p<0,05

According to Table-10, the mean overall PSI scores obtained by the students were calculated as 101.25, 90.87, and 90.89 for university students, who were graduated from anatolian high school, vocational high school, and science high school, respectively. The one-way ANOVA analysis revealed a significant difference between the groups { $t = .013$   $p < .05$ }. Additionally, the Scheffe's test, which was conducted to find out the groups that have the said significant difference in between, revealed that the difference was between the PSI scores of the students who graduated from vocational high school or science high school,



and the PSI scores of the students who graduated from anatolian high school, in favor of the former. In other words, it was determined that the university students graduated from anatolian high school were weaker than the other students in terms of problem solving.

The analysis of the relationship between university students' attitudes towards reading habit, i.e. ASTRH scores, and their problem solving skill levels, i.e. PSI scores, through the calculation of the Pearson product-moment correlation coefficient, i.e. Pearson's correlation coefficient, revealed a moderately positive linear relationship between the two score sets. The respective findings are given in Table 11.

**Table 11.** The Relationship between ASTRH\* and PSI\*\* Scores

Pearson's Correlation		
Attitude Scale Towards Reading Habit	n	r
Problem Solving	146	.560***

Note: \*ASTRH: Attitude Scale Towards Reading Habit, \*\*PSI: Problem Solving Inventory, \*\*\*Correlation is significant at the 0.01 level (2-tailed).

As a result, a significant relationship ( $r = .56$ ) was found between the attitudes towards reading habit and the problem solving skills in the positive direction level between reading a book and problem solving skills.

#### 4. Discussion and Conclusion

The findings of this study revealed a significant difference between the groups of university students created based on gender in attitudes towards reading in favor of the male students. To the contrary, in the study conducted by Arı and Demir (2013) with the university students enrolled in the Department of Primary Education of Faculty of Education at Çanakkale Onsekiz Mart University of Turkey, as well as in the study conducted by Can et al. (2016), female students were found to have higher levels of attitudes towards reading than male students. Similarly, females were found to have higher levels of attitudes towards reading than males in studies conducted by Aral and Aktaş (1997), Coles and Hall (2002), Saracaloğlu et al. (2007), Odabaş et al. (2008) and Ürün Karahan (2015). On the other hand, Sevgi and Karakaya (2021) did not find any difference between the students' reading habits in terms of gender. In parallel, there are other studies in which it was determined that gender has no effect on the attitudes towards reading (Baydilek et al., 2018; Bozpolat, 2010; Çeçen & Alver, 2011). Many variables might have contributed to such results. Among these variables, the effect of the environment, especially the family, is noteworthy. Nevertheless, in this study, no difference was found between the groups of university students created based on the educational levels of their mothers or fathers in attitudes towards reading. Similarly, Odabaş et al. (2008) and Arı and Demir (2013) also did not find any difference between student groups created based on the educational levels of their mothers or fathers in reading habits. On the other hand, in the study conducted by Durualp et al. (2013), it was determined that students' attitudes towards reading significantly differed based on the status of having parents that read books. In the study conducted by Arıcı (2005) with secondary school students, 57.3% of the students said that they have taken their teachers as their role models in respect of reading habits, as compared to the 17.9% and 13.4% of the students who said have taken their mother and fathers as their role models in respect of reading habits, respectively. In the study conducted by Özdemirci (1990), in which the factors related to reading and the act of reading were investigated, it was determined that parents of the 60% of the participants do not read books, and that 51% of the participants

did not have a bookcase at home. Durualp et al. (2013) emphasized the importance of parents' educational levels and stated that children growing up in families that do not possess a reading culture do not have sufficient reading skills. Similar results were reported in many other studies (Arıcı, 2005; Keleş, 2006; Molfese et al., 2003; Odabaş et al., 2008). The fact that parents' educational levels were found not to have significantly affected the reading habits of their children in these studies suggest that they do not set a good example for their children in that respect. In-depth qualitative studies may provide clearer results in cases where quantitative studies produce conflicting results such as in relation to the effect of parents on reading habits of their children.

In this study, there was no significant difference between the groups of university students created based on age and the type of high school which the student was graduated from in terms of attitudes towards reading. This is contrary to the expectation that the students enrolled in or graduated from science high schools in particular and anatolian high schools would have higher reading levels than those enrolled in or graduated from vocational high schools and that the reading levels would increase gradually come university years. These results suggest that the improvement detected in the reading levels of children of 7-14 years old within the framework of the Turkey Reading Culture Map Project (2011) was not maintained afterwards, that the type of school student enrolled in or has graduated from has only a temporary impact on students' reading levels, and hence that an intrinsic willingness to read books is the key to gaining permanent reading habits.

Among other factors not investigated in this study on reading is the screen time. Yavuzer (2013) found that reading habit has weakened as more time was put in watching the television, a result which he pointed out that may cause the children to be prone to violence in the future. In this respect, further studies are needed to determine the relationship between the attitudes towards reading and predisposition to violence.

In terms of problem solving skills, in this study, no statistically significant difference was found between male and female university students. Similar results were obtained in studies conducted by Bal (2011), Pehlivan and Konukman (2004) and Sevgi and Karakaya (2021). However, there are also studies available in the literature which reported gender as a significant variable in problem solving skills (Çelik Ercoşkun & Köse, 2014; Gencel, 2015; Serin, 2006).

Additionally, in this study, no statistically significant difference was found between the groups of university students created based on the educational levels of their mothers or fathers in terms of problem solving skills. Similarly, Aslan and Sağır (2012) and Serin and Derin (2008) did not find any statistically significant relation between the educational levels of students' mothers or fathers and students' problem solving skills. Çağlayan et al. (2008), on the other hand, did not find any statistically significant relation between the educational levels of students' mothers and students' problem solving skills, yet found a statistically significant relation between the educational levels of students' fathers and students' problem solving skills. Lastly, in the study conducted by Ünüvar (2003), it was determined that the scores obtained from all sub-dimensions of the problem solving inventory differed significantly according to the students' mothers' educational level.

In terms of the relation between the problem solving skills and the age groups, no statistically significant difference was found in this study between the groups of students created based on age, except for the significant difference found between the group of students under 20 years old and the group of

students between 20 and 25 years old in favor of the group of students under 20 years old. There are other studies in which problem solving skills were found to have differed according to age groups. In one of these studies, Karlı (2019) found that the problem solving skills increased significantly with age. It is difficult to infer for sure based on these results whether age has an effect on problem solving, yet there is a high probability that there may be differences in problem solving skills between the students that are in different stages of adolescence and in the transition to the abstract operational period. This might just be the reason for the relevant finding of this study in that no statistically significant difference was found between the groups of students created based on age with the exception of only one difference, since the students investigated within the scope of this study had already completed the said transitional stages.

Furthermore, a significant difference was found between the student groups created based on the type of high school which the student was graduated from, in favor of the students who were graduated from anatolian high schools. This result may be attributed to the fact that the education given to the students who graduate from anatolian high schools is more general in nature and is thus not sufficient to develop their problem-solving skills. As compared to the anatolian high schools, the education in vocational high schools involves practical applications of technical knowledge that can be used to produce solutions to problems, whereas the education in science high schools involves high-level thinking skills.

Lastly, a significant relationship ( $r=.56$ ) was found between the reading levels and the problem solving skills in the positive direction, which suggests that the higher the reading attitudes the higher the problem solving skills. Similarly, in the study conducted by Vilenius-Tuohimaa et al. (2008) a positive correlation ( $r = 0.67$ ) was found between the reading comprehension levels and problem solving skills, and in the study conducted by Sevgi and Karakaya (2021), a significant relationship ( $r = 0.124$ ) was found between the reading habits and the problem solving skills in the positive direction. On the other hand, Proudfoot (2016) did not find any correlation between the reading comprehension levels and problem solving skills, and Karakılıç and Arslan (2019) did not find any significant relationship between the reading levels and the problem solving skills.

## **5. Recommendations**

Based on the findings of this study, it is recommended to add certain elective courses to the curriculum that would arise pre-service teachers' interest in reading. In addition, reading & review projects and assignments can be given to pre-service teachers and students in primary and secondary education. The help of parents can be sought in the efforts to increase the attitudes of students towards reading starting from primary schools. Accordingly, it can be requested of the parents to read together with their children and to reenact the stories read. Parents can be provided trainings within the framework of school-parent associations so that they can serve as a good role model to their children and inculcate the habit of reading to them. Number of projects, which will increase students' access to books, such as reading books at the bus stop, reading books while shopping, etc. should be increased. Pre-service teachers can be encouraged to take part in these projects and serve as a good role model to the children.

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