

Does Attitude towards Grammar Affect High-Level Reading Comprehension Skills?

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Abstract: Grammar is a learning area that functionally contributes to effective language skills. The aim of grammar instruction is the acquisition of the four basic language skills based on Turkish language rules. Reading skill, a lingual comprehension skill, aims accurate structuring of the ideas of the author of a text by the reader. The present study aimed to determine the possible effects of the attitudes towards grammar on high-level reading comprehension skills (HLRCS) based on certain variables (gender, final Turkish language course grade, and parental education level). In the current quantitative study, data were collected with the Grammar Attitude Scale and the High-Level Reading Comprehension Test (HLRCT). The study group included 427 8th grade middle school students. In the study, the regression analysis conducted to determine the causality between the Grammar Attitude Scale and HLRCT scores, revealed significant findings. Grammar attitude explained 4% of the variation in the HLRCT scores. Grammar attitude improved the achievements in high-level reading comprehension.

Keywords: Reading Comprehension, High-Level Reading Comprehension, Grammar, Attitude, Middle School, Turkish Language, 8th Grade

1. Introduction

Comprehension skills are key to both academic and social success. Individuals start to acquire the reading skill, a comprehension skill, in formal education. The aim of reading skills is to achieve a holistic understanding of communicated emotions and ideas by an author based on prior knowledge, and to reach an original novel idea based on the latent messages in the text. The comprehension process entails the reconstruction of the ideas of the author based on vocabulary, linguistic, semantic, global, and topical knowledge of the reader. Several educational and instructional processes could achieve the target objectives through the acquisition of reading comprehension skills by the students.

The present study aimed to determine the effect of grammar on HLRCS. Thus, the following research questions were determined:

1. What is the level of the attitudes of 8th grade middle school students towards grammar?
2. What is their mean Turkish language course grade?
3. Are there differences between grammar attitudes based on gender, final Turkish language course grade, and parental education level?
4. What are the HLRCS levels of these students?
5. Are there differences between HLRCS level based on gender, final Turkish language course grade, and parental education level?
6. Is there a correlation between high level reading comprehension skills and grammar attitudes?

1.1. High-Level Reading Comprehension Skills (HLRCS)

Reading comprehension is among the most important lifelong skills. This skill area requires the reader to comprehend the main idea in a text, the author's purpose in writing the text, the information presented in the text, to distinguish the similarities or differences between the ideas in the text, to associate these ideas with those in the texts they read before, to adopt a critical approach towards the text based on various hypotheses, to analyze implicit semantics in via inferences.

The processes require the instruction of critical reading, problem-solving, decision making, and creative thinking skills. The instruction of reading skills aims the comprehension, interpretation, deduction, ordering, classification and analysis of the author's message. Reading comprehension basically entails understanding a text and explicit messages conveyed in the text, while HLRCS requires a critical approach, questioning the intended messages, analysis, and deduction of certain ideas. High-level reading skills are measured in the PISA exam, namely the Program for International Student Assessment implemented by the OECD, which evaluates student knowledge and skills in mathematics, science, and reading comprehension.

The reading skills are graded with a 6-point scale in PISA. The highest grade (6) requires high-level reading comprehension skills that require abstract thinking, ordering, classification, critical thinking, and comparison skills.

Table 1

Mean Annual Turkish Reading Scores in PISA (MEB, 2019)

	2003	2006	2009	2012	2015	2018
Mean Turkish Reading Scores	441	447	464	475	428	466

In Table 1, it could be observed that the mean score was 441 in 2003, 447 in 2006, 464 in 2009, 475 in 2012, 428 in 2015, and 466 in 2018. The PISA exam is regularly held every three years, but it postponed to 2022 due to the Covid 19 pandemic.

1.2. Grammar instruction

Accurate and effective learning of the language skills is closely associated with grammar education that entails intuition about lingual logic and functions and the discovery of lingual rules based on intuition. Güneş (2013) reported that grammatic achievements were as effective as reading and writing skills in comprehension, and should be acquired.

Native Turkish language education is conducted based on the Turkish Language Course Curriculum (2019) published by the Ministry of National Education. The curricular reading skill achievements directly or indirectly emphasize the significance of grammar, demonstrating the significance of the attitudes towards grammar and the instruction of reading skills. Based on the principle that the four basic language skills support one another, it could be suggested that grammar attitude could have an impact on HLRCS.

1.3. Grammar attitude

Grammar is a science of the sounds, morphemes and sentence structures in a language and determines the rules associated with these properties. Grammar instruction should be based on texts and intuitive methods, and the courses should be instructed with an approach that would allow the students to learn these rules with examples. The main objective in grammar instruction is to train students who could employ all lingual rules functionally and accurately as they perform language skills.

It could be suggested that in addition to cognitive factors, affective factors such as attitude, motivation, self-efficacy, anxiety, etc. are important in learning. The positive or negative emotions and ideas that emerge in a situation are called attitudes. Kağıtçıbaşı (2003) described attitudes as unobservable tendencies that are assumed to lead to observable behavior. Grammar attitude entails student reactions when learning language rules. A positive attitude could have a positive effect on academic achievement. The constructivist educational approach replaced traditional grammar instruction with functional grammar instruction, and emphasized that it is important to learn grammar to employ the four basic language skills.

1.4. The correlation between High-Level Reading Comprehension Skills (HLRCS) and grammar attitudes

Goodwin and Ahn (2013) reported that morphological education, the instruction of word structure in a language, has a direct impact on reading comprehension. Kuo and Anderson (2010) also indicated that morphological awareness is an increasingly significant indicator of reading measurements as children grow older, and is associated with other aspects of metacognitive awareness and linguistic competence, especially phonological and syntactic awareness, and vocabulary.

Literature review revealed certain studies on reading and grammar. Onan (2012) reported that nine reading instruction objectives in the Primary Turkish Language Curriculum (2006) were directly associated with grammar instruction.

Several studies were conducted on the factors that affect reading comprehension. These studies emphasized the impact of reading strategies instruction on reading comprehension achievements of middle school students (Benzer & Bozkurt, 2020; Altunkaya & Sülükçü, 2018; Duman & Arsal, 2015; Özyılmaz & Alcı, 2011; Coşkun, 2011; Temizkan, 2008; Arpacıoğlu, 2007), the correlations between reading comprehension skills, reading motivation, and the attitudes of the 5th grade students towards the Turkish language course (Türkben & Gündeğer, 2021), and the impact of the reading circle method on reading comprehension skills of seventh grade middle school students (Pilav & Balantekin, 2017). A study conducted by Rand and Rand (2022) on reading comprehension emphasized the impact of reading five simplified texts on the same topic on reading comprehension. 335 4th - 8th grade students read one of the five texts on Newsela.com and took a reading comprehension test. The analysis demonstrated that there were no significant correlations between grade, reading level and text variables. Pairwise comparisons demonstrated that the scores of the low-level readers improved only in lower text levels and the scores of high-level readers did not change significantly in all text levels.

In the literature, there is no study on the impact of grammar attitude on high-level reading comprehension achievements. The determination of the effect of attitude, a significant affective learning component, on HLRCS could lead to various predictions for reading comprehension achievements. Based on the study findings, various suggestions could be made about HLRCS acquisition. It could be suggested that these recommendations could be employed to plan reading instruction, could reveal the factors that teachers should consider during instruction and when writing textbooks, and contribute to the improvement of poor reading achievements as demonstrated in the 2018 PISA exam that were worse than the 2012 results.

Türkiye ranked 40th in reading skills among 79 countries that participated in PISA 2018 and 31st among 37 OECD countries (MEB, 2019, p. 37). These findings demonstrated that reading comprehension skills of the Turkish students were unsatisfactory. Thus, to improve the reading comprehension skills of Turkish students, further instructional plans should be developed based on the reading instruction strategies, instructional methods and techniques and the factors that play a role in reading proficiency. The recommendations could guide future reading instruction planning, significant factors associated with instruction and textbook writing.

2. Method

The present study that aimed to determine the impact of grammar attitudes on HLRCS was conducted with the quantitative relational survey method. Karasar (2016) argued that the correlations between two or more variables and the level of variations in these variables could be determined with the relational survey model.

2.1. The study group

The study group included 427 8th grade students attending six middle schools in central Efeler district in Aydın province during the 2022-2023 academic year. The study group was determined with the non-random convenience sampling method (Creswell, 2013).

Table 2

Student Demographics

Group	Frequency(n)	Percentage (%)
Gender		
Female	204	47,8
Male	223	52,2
Maternal Education Level		
Primary School	99	23,2
Middle School	111	26,0
High School	125	29,3
College	92	21,5
Paternal Education Level		
Primary School	87	20,4
Middle School	107	25,1
High School	129	30,2
College	104	24,4

As seen in Table 2, 204 (47.8%) students were female and 223 (52.2%) were male.

The mothers of 99 (23.2%) students were primary school, 111 (26.0%) were middle school, 125 (29.3%) were high school, and 92 (21.5%) were college graduates.

The fathers of 87 (20.4%) students were primary school, 107 (25.1%) were middle school, 129 (30.2%) were high school, and 104 (24.4%) were college graduates.

2.2. Data collection instruments

2.2.1. Grammar attitude scale

The Grammar Attitude Scale is a 31-item five-point Likert-type scale developed by Er and Topcuoğlu Ünal (2016), and the Cronbach's Alpha reliability coefficient of the scale is 914. In the present study, the reliability of the Grammar Attitude Scale was determined as high (Cronbach's Alpha=0.936).

2.2.2. High-Level Reading Comprehension Skills Achievement Test (HLRCT)

HLRCT includes 24 questions. Yıldız, Ünal, Bayrakçı, and Polat (2019) reported that the average item difficulty and discrimination indices of the test were 0.46 and 0.45, respectively in item analysis. They stated that the reliability of the test was calculated with KR-20 and KR-21 methods, and the Kuder Richardson-20 reliability coefficient (r) was determined as 0.84, KR-21 was determined as 0.83, and the analyzes revealed that it was a valid and reliable achievement test that measured HLRC.

2.2.3. Personal data form

In the study, a "Personal Data Form" was used to determine participant demographics and study variables. The form included questions on student gender, final Turkish language course grade, and parental education levels.

2.3. Data analysis

The study data were evaluated analyzed with SPSS 22 statistical analysis software. Frequencies and percentages were employed to determine student demographics, and standard deviation and mean were used to analyze the scale scores. In the study, normal distribution of the variables was determined based on skewness and kurtosis.

Table 3

Normal Distribution

	N	kurtosis	Skewness
HLRCS	427	-0,549	0,280
Total Grammar Attitude Score	427	0,124	-0,155
Interest in Grammar	427	-0,182	-0,162
Positive Attitudes Towards Grammar	427	0,111	-0,301

In the literature, variable kurtosis between +1.5 and -1.5 (Tabachnick & Fidell, 2013) and skewness between +2.0 and -2.0 (George, & Mallery, 2010) are considered to demonstrate normal distribution. It was determined that the variables exhibited normal distribution. Parametric methods were employed in data analysis.

The correlations between the dimensions that determined the scale scores of the students were analyzed with Pearson correlation and linear regression analysis. Correlation coefficients (r) between 0.00 and 0.25 are considered very weak, between 0.26 and 0.49 are considered weak, between 0.50 and 0.69 are considered moderate, between 0.70 and 0.89 are considered high, and between 0.90 and 1.00 are considered very high (Kalaycı, 2006, p.116). Independent groups t-test, one-way analysis of variance (ANOVA) and post hoc (Tukey, LSD) analyses were conducted to investigate the differences between scale scores based on descriptive variables. Cohen(d) and Eta square (η^2) coefficients were calculated to determine the effect size. The effect size indicates whether the intra-group difference is significant. Cohen's coefficient is considered small when 0.2, moderate when 0.5, and high when 0.8, and eta square is considered small when 0.01, moderate when 0.06, and high when 0.14 (Büyüköztürk et al., 2018).

2.4. Ethical principles

The ethics committee approval for this study was granted by Aydın Adnan Menderes University Rectorate Education Research Ethics Committee with decision number 2022/09 on 26.05.2022.

3. Findings

The present study aimed to determine whether grammar attitude has an effect on HLRC. Thus, the findings associated with the main and sub- research problems are presented below:

Table 4

Mean Grammar Attitude, HLRCT scores and Final Turkish Language Course Grade

	N	Center	Ss	Min.	Max.
Total Grammar Attitude	427	99,422	20,537	31,000	153,000
Interest in Grammar	427	48,426	12,297	16,000	79,000
Positive Attitudes towards Grammar	427	50,995	10,565	15,000	75,000
HLRCT Score	427	8,500	4,034	0,000	20,000
Final Turkish Language Course Grade	427	79,070	17,369	20,000	100,000

The mean "total attitude towards grammar" score was $99,422 \pm 20,537$ (min=31, max=153), the mean "interest in grammar" score was $48,426 \pm 12,297$ (min=16, max=79), the mean "positive attitudes towards grammar" score was $50,995 \pm 10,565$ (min=15, max=75), the mean "HLRCT" score was $8,500 \pm 4,034$ (min=0, max=20), and the mean "final Turkish language course grade" was $79,070 \pm 17,369$ (min=20, max=100).

The variations in grammar attitude and HLRCT scores of the students based on gender and parental education level are presented in Table 5.

Table 5*Variations in HLRCT and Grammar Attitude Scores Based on Student Demographics*

Demographic	HLRCT	Total Grammar Attitude	Interest in Grammar	Positive Attitudes towards Grammar
Gender	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Female	204 8,760±4,035	101,804±21,821	49,760±12,741	52,044±11,031
Male	223 8,260±4,027	97,242±19,077	47,206±11,773	50,036±10,048
t=	1,268	2,304	2,152	1,969
p=	0,206	0,023	0,032	0,050
Maternal Education Level	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Primary School	99 8,480±3,656	102,939±19,816	51,424±11,446	51,515±10,444
Middle School	111 7,100±3,779	99,469±19,755	48,261±12,512	51,207±9,849
High School	125 8,670±3,832	99,472±19,395	48,504±11,301	50,968±10,969
College	92 9,970±4,460	95,511±23,202	45,294±13,560	50,217±11,084
F=	9,052	2,097	4,045	0,260
p=	0,000	0,100	0,007	0,854
PostHoc=	4>1, 1>2, 3>2, 4>2, 4>3 (p<0.05)		1>4 (p<0.05)	
Paternal Education Level	Mean±SD	Mean±SD	Mean±SD	Mean±SD
Primary School	87 8,250±3,847	104,046±23,950	52,425±12,868	51,621±12,854
Middle School	107 7,380±3,294	97,654±17,910	47,897±11,494	49,757±9,172
High School	129 8,590±4,138	100,442±18,096	48,535±11,200	51,907±9,692
College	104 9,740±4,425	96,106±22,242	45,490±13,147	50,615±10,827
F=	6,375	2,779	5,266	0,956
p=	0,000	0,041	0,001	0,413
PostHoc=	4>1, 3>2, 4>2, 4>3 (p<0.05)	1>2, 1>4 (p<0.05)	1>2, 1>3, 1>4 (p<0.05)	

The findings presented in Table 5 are discussed below based on study variables.

3.1. Grammar attitudes based on gender

Student attitudes towards grammar were analyzed based on total score, interest in grammar, and positive attitude towards grammar scores and the gender variable.

The grammar attitude scores of the female students ($x=101,804$) were higher when compared to the male students ($x=97,242$) ($t=2,304$; $p=0.023<0.05$; $d=0.223$; $\eta^2=0.012$).

The "interest in grammar" scores of the female students ($x=49,760$) were higher when compared to the male students ($x=47,206$) ($t=2,152$; $p=0.032<0.05$; $d=0.209$; $\eta^2=0.011$).

The "positive attitude towards grammar" scores of female students ($x=52,044$) were higher when compared to the male students ($x=50,036$) ($t=1,969$; $p=0.05<0.05$; $d=0,191$; $\eta^2=0,009$).

3.2. High-Level reading comprehension skills based on gender

It was determined that there was no difference between the HLRCT scores of the students based on gender ($p>0.05$).

3.3. Grammar attitudes based on maternal education level

It was determined that there was no significant difference between the total grammar attitude and "positive attitudes towards grammar" scores of the students based on maternal education level ($p > 0.05$).

A significant difference was determined between the "interest in grammar" scores of the students based on maternal education level ($F = 4,045$; $p = 0.007 < 0.05$; $\eta^2 = 0.028$). This was due to the fact that the scores of the students whose maternal education level was primary school were higher than the scores of the students whose maternal education level was college ($p < 0.05$).

3.4. High-Level reading comprehension skills based on maternal education level

The difference between the students' HLRCT scores was significant based on maternal education level ($F = 9,052$; $p = 0 < 0.05$; $\eta^2 = 0.060$).

The HLRCT scores of the students whose mothers were college graduates were higher when compared to those whose mothers were primary, middle and high school graduates ($p < 0.05$).

The HLRCT scores of the students whose mothers were primary school graduates were higher when compared to those whose mothers were middle school graduates ($p < 0.05$).

The HLRCT scores of the students whose mothers were high school graduates were higher when compared to those whose mothers were middle school graduates ($p < 0.05$).

3.5. Grammar attitudes based on paternal education level

The study findings demonstrated that the grammar attitude (GA) scores of the students significantly varied based on paternal education level ($F = 2,779$; $p = 0.041 < 0.05$; $\eta^2 = 0.019$).

The GA scores of the students whose paternal education was primary school were higher when compared to those whose paternal education level was secondary school ($p < 0.05$).

The GA scores of the students whose paternal education was primary school were higher when compared to those whose fathers were college graduates ($p < 0.05$).

It was determined that there were significant differences between the students' interest in grammar (IIG) scores and paternal education level ($F = 5,266$; $p = 0.001 < 0.05$; $\eta^2 = 0.036$). Certain differences between students' interest in grammar and paternal education level were as follows:

The IIG scores of the students whose fathers were primary school graduates were higher when compared to those whose fathers were middle school, high school and college graduates ($p < 0.05$).

It was determined that there was no significant difference between the "positive attitudes towards grammar" scores based on paternal education level ($p > 0.05$).

3.6. High-Level reading comprehension skills based on paternal education level

It was determined that there was a significant difference between the HLRCT scores of the students based on paternal education level ($F = 6,375$; $p = 0 < 0.05$; $\eta^2 = 0.043$).

The HLRCT scores of the students whose fathers were college graduates were higher when compared to the HLRCT scores of the students whose fathers were primary, middle and high school graduates ($p < 0.05$).

The HLRCT scores of the students whose fathers were high school graduates were higher when compared to the HLRCT scores of the students whose fathers were middle school graduates ($p < 0.05$).

The findings on the differences between the HLRC scores based on the final Turkish language course grade and the correlation between high-level reading skills and grammar attitudes:

Table 6*Correlation Analysis*

		Final Turkish Language Course Grade	HLRCT
HLRCT	r	0,441**	
	p	0,000	
Total Grammar Attitude Score	r	0,145**	0,205**
	p	0,003	0,000
Interest in Grammar	r	0,082	0,144**
	p	0,091	0,003
Positive Attitudes Towards Grammar	r	0,187**	0,231**
	p	0,000	0,000

The correlation analysis conducted between the final Turkish language course grade, HLRCT, total grammar attitude, "interest in grammar", "positive attitudes towards grammar" scores revealed a very weak positive correlation between total grammar attitude score and final Turkish language course grade ($r=0.145$, $p=0,003<0.05$). There was a very weak positive correlation between total grammar attitude and HLRCT scores ($r=0.205$, $p=0,000<0.05$). There was a very weak positive correlation between "interest in grammar" and HLRCT scores ($r=0.144$, $p=0,003<0.05$). There was a very weak positive correlation between "positive attitudes towards grammar" score and final Turkish language course grade ($r=0.187$, $p=0,000<0.05$). There was a very weak positive correlation between "positive attitudes towards grammar" and HLRCT scores ($r=0.231$, $p=0,000<0.05$). The correlations between the other variables were not statistically significant ($p>0.05$).

Table 7*The Impact of Grammar Attitude on High-Level Reading Comprehension Skills*

Independent Variable	Non-standard Coefficients		Standard Coefficients	t	p	95% Interval	Confidence Top
	B	SE	β				
Fixed	4,493	0,947		4,746	0,000	2,632	6,353
Grammar Attitude	0,040	0,009	0,205	4,321	0,000	0,022	0,059

*Dependent Variable= HLRCT, $R=0.205$; $R^2=0.040$; $F=18.674$; $p=0.000$; Durbin Watson = 1.439

The regression analysis conducted to determine the causality between grammar attitudes and HLRCT revealed significant findings ($F=18,674$; $p=0,000<0.05$). Grammar attitude explained 4% of the total variation in HLRCT ($R^2=0.040$). Increase in grammar attitudes improved high-level reading comprehension skills ($\beta=0.205$).

Table 8*The Impact of the Grammar Attitude Scale Sub-dimensions on HLRCT*

Independent Variable	Non-standard Coefficients		Standard Coefficients	t	p	95% Interval	Confidence
	B	SE	β			Alt	Top
Fixed	3,987	0,969		4,114	0,000	2,082	5,892
Interest in Grammar	0,002	0,020	0,005	0,092	0,927	-0,037	0,040
Positive Attitudes towards Grammar	0,087	0,023	0,227	3,805	0,000	0,042	0,132

*Dependent Variable= HLRCT, R=0.231; R² =0.049; F=11.914; p=0.000; Durbin Watson = 1.459

The regression analysis conducted to determine the causality between "interest in grammar", "positive attitudes towards grammar" and HLRCT revealed significant findings ($F=11,914$; $p=0,000<0.05$). The interest in grammar" and "positive attitudes towards grammar" dimensions explained 4.9% of the total variation in HLRCT scores ($R^2 =0.049$). "Interest in grammar" had an effect on the HLRCT score ($p=0.927>0.05$). "Positive attitudes towards grammar" increased the HLRCT score ($\beta=0.227$).

4. Conclusion and Discussion

The mean "total attitude towards grammar" score was $99,422\pm 20,537$ (Min=31; Max=153), the mean "interest in grammar" score was $48,426\pm 12,297$ (Min=16; Max=79), and the mean "positive attitudes towards grammar" score was $50,995\pm 10,565$ (Min=15; Max=75). It was observed that the students exhibited above-average grammar attitudes. Toptal (2020) conducted a study to determine the grammar attitudes of the 5th, 6th, 7th and 8th grade middle school students and reported that the mean total attitude towards grammar scale score was $\bar{X}=58.59\pm 9.02$ (Min=30; Max=80). Balcı and Melanlıoğlu (2020) reported that middle school students were quite interested in grammar; however, they were also alienated from grammar due to certain classroom practices.

The mean final Turkish language course grade was $79,070\pm 17,369$ (Min=20; Max=100). The analysis of the correlations between the mean final Turkish language course grade, HLRCT score, total grammar attitude, "interest in grammar", and "positive attitudes towards grammar" scores revealed very weak positive correlations between total grammar attitude score and final Turkish language course grade, between total grammar attitude and HLRCT scores, between "interest in grammar" and HLRCT scores, between "positive attitudes towards grammar" score and final Turkish language course grade, and between "positive attitudes towards grammar" and HLRCT scores. The correlations between the other variables were not statistically significant.

The total grammar attitude, "interest in grammar" and "positive attitude towards grammar" scores of the female students were higher compared to those of the male students. Similarly, Toptal (2020) reported that the mean course achievement and classroom interaction scores of the female students were higher when compared to the male students, the mean difficulties experienced in the course score of the male students was higher when compared to the female students, and the mean grammar attitude score of the female students was higher when compared to the male students. Thus, it could be suggested that female students had higher interest in and positive attitudes towards grammar when compared to the male students.

There was no significant difference between the total grammar attitude and "positive attitudes towards grammar" scores of the students based on maternal education level. However, there was a significant

difference between the "interest in grammar" scores of the students based on maternal education level. Thus, the "interest in grammar" scores of the students whose mothers were primary school graduates were higher than those whose mothers were college graduates. Although elucidation of the reason behind this difference requires future studies, college graduate mothers could have assisted the homework of their children based on grammar rules instead of employing intuition.

It was determined that there was a significant difference between the total grammar attitude scores of the students based on paternal education level. Thus, the total scores of the students whose fathers were primary school graduates were higher than those whose fathers were middle school or college graduates. There was a significant difference between the "interest in grammar" scores of the students based on paternal education level. The "interest in grammar" scores of the students whose fathers were primary school graduates were higher when compared to those whose fathers were middle, high school, and college graduates. "Positive attitudes towards grammar" scores of the students did not differ significantly based on paternal education. The high total grammar attitude and "interest in grammar" scores of the students whose fathers were primary school graduates could be explained by the possibility that the college graduate fathers could have instructed their children based on rules instead of intuition, similar to college graduate mothers. Further research is required to clarify this assumption. The empirical study conducted by Kodallı (2022) revealed a significant difference between all scale scores that favored the experimental group, including the attitude towards the Turkish language course, grammar attitudes, and student achievements in intuitive grammar instruction. Review of the literature on grammar attitude revealed no other findings based on parental education level.

In the study, it was determined that the mean HLRCT score of the 8th grade middle school students was $8,500 \pm 4,034$ (Min=0; Max=20). It was observed that the highest score was 20 in the test, where the maximum score was 24 points, and the mean score was below the half of the highest possible score. In a study conducted with 10th graders, Yıldız, Divrik, Özçelik, and Aktaş (2022) reported that the mean HLRCT score of the female students was 41/100 and it was 39/100 for the male students. These findings were consistent with the present study and the mean reading comprehension scores were below average in both studies. Bayat and Çetinkaya (2020) reported that the reading comprehension scores of the 5th and 6th grade students were moderate.

The correlation between the final Turkish language course grade and HLRCT score was not statistically significant. Although the mean Turkish language course grade was above 50%, their mean HLRCT score was not consistent with their Turkish grade. Similar to the findings reported by Yıldız et al. (2022), there was a weak positive correlation between the course grades of the tenth grade students and their HLRCT scores, and no significant difference was determined between the HLRCT scores of the students and literature course grades.

Certain studies (Yılmaz; 2015, Sallabaş; 2008-Erden and Koçyiğit; 2023) indicated that students with high reading comprehension were successful in the Turkish language course.

There was no significant difference between the HLRCT scores of the students based on gender. Various studies (Erden & Koçyiğit, 2023; Yıldız, Divrik, Özçelik, & Aktaş, 2022; Yüksel, Küçükseymen, Tunç, Yılmaz, Deniz, Güser, 2022; Akbalık, 2019; Kaya & Yıldırım, 2018; Kuşdemir Kayıran & Katırcı Ağaçkiran, 2018; Ulutaş & Aksoy, 2016; Durukan, 2013; Sabak Kaldan, 2007) reported similar findings. However, certain studies (Kızıltaş, 2023; Yılmaz, 2023; Bıyık, 2022; Kızgın & Baştuğ, 2020; Wu, Valcke, & Keer, 2019; Altunkaya, 2018; Sülükçü & Altunkaya, 2018; Kuyumcu Vardar & Sarıoğlu, 2017) indicated that female students were more advanced in reading comprehension when compared to the male students. Bayat and Çetinkaya (2020) reported that female students were more successful when compared to male students in reading comprehension deep structure dimension, reading and inference skills, as well as knowledge and other related skills.

It was determined that there was a significant difference between the HLRCT scores of the students based on maternal education level. The HLRCT scores of the students whose mothers were college graduates were higher when compared to those whose mothers were primary, middle, and high school graduates, the scores of those whose mothers were primary school graduates were higher than those whose mothers were middle school graduates, and the scores of those whose mothers were high school graduates were higher when compared to those whose mothers were middle school graduates. The finding that the HLRCT scores of the students whose mothers were college graduates were higher than those whose mothers were primary, middle, and high school graduates was an expected result. It could be suggested that college graduate mothers set an example for their children and guided them by reading books. However, the fact that the high scores achieved by the students whose mothers were primary school graduates when compared to those whose mothers were middle school graduates merits further research.

Saraçlı Çelik and Karasakaloğlu (2021) reported that the difference between the skills of the students to read silent words correctly and fluently was significant based on maternal education level, and students with higher maternal education were more successful in reading silent words correctly and fluently. Altunkaya (2018) reported contrasting findings. Altunkaya (2018) reported that there was no significant difference between mean group scores in the test conducted to determine a possible significant difference between the mean reading comprehension scores based on maternal education variable.

There was a significant difference between the student scores based on the paternal education level. The HLRCT scores of the students whose fathers were college graduates were higher when compared to those whose fathers were primary, middle, and high school graduates. The scores of the students whose fathers were high school graduates were higher when compared to those whose fathers were middle school graduates. Saraçlı Çelik and Karasakaloğlu (2021) reported that there was a difference between accurate, fluent, and silent reading scores of the students and paternal education level, and the students with higher paternal education level were more successful in reading. Altunkaya (2018) also reported similar results on reading comprehension scores based on paternal education level. In the study, the reading comprehension scores of the students whose fathers were college graduates were higher when compared to those whose fathers were primary, secondary and high school graduates.

The regression analysis conducted to determine the causality between grammar attitude and HLRCT scores revealed significant findings. Grammar attitude explained 4% of the total variation in HLRCT score. Grammar attitude increased high-level reading comprehension achievements.

The regression analysis conducted to determine the causalities between "interest in grammar", "positive attitudes towards grammar" and HLRCT score revealed significant findings. The "interest in grammar" and "positive attitudes towards grammar" variables explained 4.9% of the total variation in HLRCT score. "Interest in grammar" affected the HLRC level. "Positive attitudes towards grammar" improved the HLRCT score. These findings emphasized the affective dimension of grammar instruction in the acquisition of HLRCs and the significance of grammar instruction. In the literature, there is no study where the impact of grammar attitude on HLRCs was investigated. Several studies investigated the correlations between reading comprehension and various affective factors in reading. A study conducted by Kızgın and Baştuğ (2020) reported a weak positive correlation between the reading comprehension scores of 4th grade students and their reading motivation. Kızıltaş (2023) reported no significant correlation between reading attitude and reading comprehension scores. Yusnitasari and Novita (2022) investigated the correlation between language learning attitudes and reading comprehension achievements, and reported that a good attitude led to better learning, while a negative attitude led to failure. Riyanto et al. (2015) investigated the correlation between student attitudes

towards language learning and reading comprehension, and argued that attitude towards language learning contributed most to vocabulary.

4.1. Recommendations

The study findings demonstrated that grammar attitude increased achievements in high-level reading comprehension. "Interest in grammar" and "positive attitudes towards grammar" variables increased HLRCT scores, and grammar attitude was a significant factor in HLRCS instruction. Teachers, textbook authors, and curriculum developers should plan the education to ensure the development of positive attitudes towards grammar among the students.

The mean HLRCT score of the 8th grade middle school students was $8,500 \pm 4,034$ (Min=0; Max=20). The maximum possible test score was 24, the highest score was 20, the mean score was 8.5, and the mean was below the median score. Since the study was during the final months of the 2nd 8th grade semester, it should be noted that the achievement level was quite low. Thus, the Turkish language course curriculum, textbooks, and instructional methods and techniques associated with reading skills should be revised, solutions should be identified, and the HLRCS training should be reorganized accordingly.

Female students had more positive attitudes towards grammar when compared to male students. Further studies should be conducted to identify the solutions to improve the attitudes of the male students towards grammar.

Further studies should be conducted to elucidate the finding that the grammar attitude scores of the students whose parents were primary school graduates were higher when compared to those whose parents were graduated from higher education institutions.

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