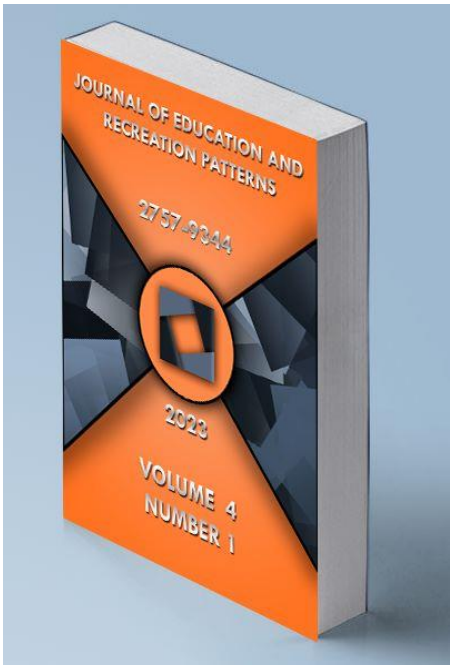

Journal of Education and Recreation Patterns (JERP)

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To cite this article:

Akcan, E. & Tekkeşin, E. (2023). Investigation of the Relationship between the Life Studies Lesson Attitudes and Critical Thinking Tendencies of Primary School 3rd-Grade Students. *Journal of Education and Recreation Patterns (JERP), 4* (1), 210-228. DOI: https://doi.org/10.53016/jerp.v4i1.98

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*The initial findings of the study were presented at the "6th EGE International Conference on Social Sciences" held in Izmir, Turkiye on September 10–11, 2022.

Journal of Education and Recreation Patterns (JERP)
Volume 4, Issue 1, Year 2023 ISSN: 2757-9344

Investigation of the Relationship between the Life Studies Lesson Attitudes and Critical Thinking Tendencies of Primary School 3rd-Grade Students

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ARTICLE INFORMATION
Original Research Paper

Received 25.01. 2023
Accepted 29.06. 2023

https://jerpatterns.com

June, 2023

Volume: 4, No: 1

Pages: 210-228

ABSTRACT
The purpose of this study is to determine the level of relationship between the attitudes of 3rd-grade primary school students toward Life Studies lessons and their critical thinking tendencies. The correlational survey model, which is one of the quantitative research methods, was used in the research. The sample of the study consists of 401 "3rd-grade students" in the academic year 2021-2022. The study group was selected using the convenience sampling technique. "Life science lesson and students' attitudes scale" and "Critical thinking tendency scale for primary school students" were used to collect research data. The data obtained from the scales were analyzed using SPSS 22.00 statistical software. Normality distributions were examined to determine the test techniques to analyze the data. For this purpose, Kolmogrov-Smirnov, histogram graph, skewness, and kurtosis values were examined. As a result of the research, it was observed that the critical thinking tendencies of the 3rd-grade primary school students were higher than the attitudes of the Life Studies lesson and there was a low level, positive and significant relationship between them.

Keywords: Critical Thinking, Life Studies, Primary School.

INTRODUCTION

When we think about what the term 'Life Studies' means, the first thing that comes to mind is the expression 'knowledge of life'. It is undoubtedly possible to provide children with this knowledge of life through education. It is through education that individuals acquire the knowledge, values, and skills they will need throughout their lives. The first step of the educational process begins in the family (Çelik and Gündoğan, 2020) and education is the child's knowledge and recognition of himself/herself with the knowledge of life that he/she has acquired. The child's self-knowledge is not only the recognition of his/her existence as an individual. It means knowing his/her family, environment, region, city, country, and the whole world (Tay, 2017). The next step in the educational process is the school-age which continues with some basic courses taken in primary school. One of these basic lessons that students take in primary school is the Life Studies lesson, which is taught in the first, second, and third grades (Çelik and Gündoğan, 2020). The aim of the Life Studies lesson is for students to get to know themselves, make decisions, and gain the skills necessary to sustain their lives and be in life with their existence as individuals (Sağlam, 2019). Thanks to the knowledge gained in this lesson, students; become individuals who have the basic values of society and their families, and can recognize themselves and the environment in which they live. They also become individuals who can recognize what they need to do to improve themselves, protect the environment and nature, use technology properly, be patriotic, and protect their history and cultural values (MEB, 2018).

The world is constantly changing, scientific and technological developments are very rapid, and the needs of society and individuals are also becoming different. The integration of technology into education has been rapid and unprecedented with advances in science (Ibrahim & Aydoğmuş, 2023). Based on the developments in today's world, education systems should be appropriately changed and renewed to produce individuals who can meet the needs of the age we live in (Meb 2018). Education systems should be equipped with 21st-century skills such as problem-solving, critical thinking, entrepreneurship, adaptation to innovation, high communication skills, and empathy, going beyond the mere transfer of information in the curriculum (Özdemir et al., 2021; Meb 2018). Children need to acquire these skills from primary school age. In this context, life studies lessons should confront children with the physical, technological and social realities of the world, carry the spirit of the time they are in (Karatekin, 2021), keep up with the changes in science and technology, and raise individuals with 21st-century skills (MEB, 2018).

Skills such as analytical thinking, problem-solving, human orientation, empathy, and critical thinking, which have an important place in the history of both the East and the West today and are expressed as 21st-century skills, are important skills from the past to the present (Özdemir, Turan and Çoban, 2021). Although expressed differently, these skills have always been important for people and societies. Recently, it has taken its place among the indispensable characteristics of our time, known as analytical and critical thinking skills (Lucas, Spencer, and Claxton, 2012; Miri, David, and Uri, 2007). For this reason, critical thinking has become one of the important skills that should be taught to students in schools (Yılmaz, 2021). Several researchers have conducted many studies related to critical thinking, improving students' skills and developing their thinking skills (King, Goodson, and Rohani, 2011; Krathwohl, 2002; Lopez and Whittington, 2001; Pickard, 2007; Yee, Widad, Jailani, Tee, Razali and Mohaffyza, 2011; Yunos, Kiong, Heong, Mohamad, Mohamad and Othman, 2010).

According to Richard Paul, critical thinking is "thinking about what you are thinking to improve your thinking as you think"; and according to Potts, "it is a way of thinking that does not accept any idea without examining its validity and accuracy". (cited in Yılmaz, 2021).

According to Dwyer, Hogan, and Stewart (2014), critical thinking is a metacognitive process that leads to possible solutions to the problems encountered and requires reflective thinking. It is the ability to think accurately, rationally, deeply, and independently (Yılmaz, 2013). It is stated that critical thinking skills are the most needed skills in education, work, and daily life (Heong et al., 2011). Critical thinking has three dimensions: the first is to ask questions, the second is to try to understand the logic of the questions asked, and the third is to believe in the results that our logic grasps (Nosich, 2018). People often take a negative attitude when they hear the words 'critical thinking'. In fact, critical thinking is not about criticizing people or their ideas. Critical thinking guides us about what information and new ideas are useful and what ideas need to be changed (Yılmaz, 2013). Since the social environment we live in affects our thinking, we may encounter obstacles in critical thinking (Nosich, 2018). The only way to overcome these obstacles we face is to acquire the right critical thinking skills.

Many researchers in their studies claimed a similar result on the role of teachers in developing students' critical thinking skills (Abad, 2013; Adeyemi, 2008; Agharuwhe and Nkechi, 2008; Ankiewicz, Adam, De Swardt and Gross, 2001; Dronkers, Robert and Fiesolana, 2003; Sellars, Fakirmohammad, Bui, Fishetti, Niyozov, Reynolds, et al., 2018; Shah and Udgaonkar, 2018; Heong et al., 2011; Virtanen, Raikkonen and Ikonen, 2015; Viswanadha, 2013; Woodring, 2020; Zhang, 2008). Most teachers and schools emphasize the importance of critical thinking skills but shy away from developing and using these skills (Loveland, 2019). The Life Studies lesson taught in the first, second, and third years of primary school is an important lesson that provides students with the basic skills necessary for their social lives and also prepares them for the disciplines of higher education (Oker, 2019). Critical thinking helps students to understand the lessons they are learning better and more in-depth (Sellars, Fakirmohammad, Bui, Fishetti, Niyozov, Reynolds, et al., 2018). It is known that critical thinking skills are among the skills that should be taught to students in the curriculum of life studies lessons, and it is one of the most frequently used 21st-century skills in life studies textbooks (Tay and Baş, 2015).

We live in a rapidly developing and changing world. Therefore, every country needs people who can inquire, examine the evidence, make correct and quick decisions, and think independently and critically (Ankiewicz, Adam, De Swardt, and Gross, 2001; Roehrig, Kruse, and Kern, 2007). In some studies in the literature, the following results were obtained. In the study in which the attitudes of 2nd and 3rd-grade primary school students toward Life Studies lessons were examined in terms of various variables, no significant difference was found between the attitudes of 2nd and 3rd-grade students towards Life Studies lessons (Çetin, 2020; Batmaz, 2021). In another study, it was found that as the level of students' attitudes toward life studies lessons increased, their social skills also increased (Sarı, 2020). Similarly, it has been determined that the different methods used in teaching the Life studies lesson increase students' attitudes towards this lesson (Hanbaba and Bektaş, 2012; Gündoğan, 2017; Ira, Ira, and Gecer, 2019; Bütün-Kar, 2021; Çayak, 2022; Baş, Işık-Tertemiz and Tay, 2021). It was found that third-grade primary school students generally have a positive attitude toward the Life Studies lesson and they want more extracurricular activities to be done during this lesson (Oker and Tay, 2019; Gündoğan, 2020). In another study, it was found that the academic success of 4th-grade students with high critical thinking skills was higher (Akar and Kara, 2016). In order to develop the critical thinking skills of 4th-grade students, it is necessary to minimize the behaviors that prevent students from thinking in the classroom environment (Özyurt, Baştopçu, Barçın, Deviren and Atile, 2018). In a study conducted by Palavan (2012), there was no significant difference in students' attitudes towards the lesson in a third-grade life studies lesson where brain-based learning methods were applied, but there was a positive difference in students' critical thinking skills.

When reviewing the studies, it can be seen that most of the critical thinking studies were conducted on 4th-grade students (Akar and Kara, 2016; Özyurt et al., 2018; Yüksekbilgili, 2019; Hocaoğlu and Döş, 2021). However, no study has been conducted on third-grade students in which students' attitudes toward life studies lessons and critical thinking skills have been discussed together. Critical thinking, which is one of the 21st-century skills, is one of the important skills that students will need throughout their lives. The Life Studies lesson, which takes place from Year 1 of primary school, is one of the most appropriate lessons for students to acquire this skill. For this reason, the study is considered important and will contribute to the field. Through the Life Science course, critical thinking skills, like all high-level thinking skills, are tried to be acquired. Thanks to critical thinking skills, individuals will be able to easily keep up with the age. In order to gain this skill, a special importance should be given to the life science course. For this reason, this study is expected to contribute to the field by revealing the relationship between life science course and critical thinking skills.

Research shows that both the family and the environment play a role in the development of critical thinking skills. The question of whether environment or heredity is more effective in the development of an individual is often asked and discussed. In general, rather than saying that environment or heredity alone is effective, it is more accurate to say that for some traits environment and heredity are highly effective. For example, research shows that intelligence is generally influenced by heredity. However, some personality traits such as extraversion, perseverance and anxiety are less heritable than intelligence (Bacanlı, 1999). Environmental factors are one of the important factors that affect a person's critical thinking ability apart from hereditary factors. Family, society and school can affect an individual's critical thinking capacity (Tümkaya & Aybek, 2008). Therefore, it can be said that demographic variables have significant effects on critical thinking skills.

Aims of Study

This study aimed to examine the strength and nature of the relationship between the attitudes of 3rd-grade primary school students towards Life Studies lesson and their critical thinking skills, dispositions, or problem-solving abilities. In the context of this aim, the research questions are as follows:

A) The first two research questions pertain to the relationship between attitudes and critical thinking tendencies.

1- What are the levels attitudes of 3rd-grade primary school students toward the Life Studies lesson and their critical thinking tendency?

2- Is there a significant relationship between the attitudes of 3rd-grade primary school students towards the Life Studies lesson and their critical thinking tendency scores?

B) The following three questions relate to differences based on demographic variables.

3- Is there a significant difference between the attitudes of 3rd-grade primary school students towards the Life Studies lesson and their demographic variables?

4-Is there a significant difference between the critical thinking tendencies of 3rd-grade students and their demographic variables?

5-Is there a significant difference between the critical thinking dispositions of 3rd-grade students and their demographic variables?

METHOD

Research Model

Although critical thinking is important at all levels of education, it is especially important for students in primary school. For this reason, primary school courses should be related in a way that allows students to develop critical thinking skills. This study aims to investigate the relationship between the attitudes of 3rd-grade primary school students toward Life Studies lessons and their critical thinking tendencies. Based on this purpose, it has been structured on the quantitative research method. Quantitative research is defined as a positivist view that sees reality as independent of the researcher and accepts that it can be objectively observed, measured, and analyzed in its external reality (Büyüköztürk et al., 2016). In this study, it was designed according to the correlational model, which is one of the quantitative research methods. The correlational model, on the other hand, is a research model that can determine the relationship between variables and obtain information about two phenomena that are thought to be related to each other (Kuzu, 2013).

Sampling

The study group of this research consists of third-grade students in public schools in the central district of Kahramanmaraş in the Mediterranean region in the 2021-2022 school year. All public schools in the central district included in the sampling. The population of the research is 13716 third-grade students. The life studies lesson is available in the 1st, 2nd and 3rd primary school grades. This study included the oldest age group taking life science courses. The sample size was calculated as a minimum of 374 students with a margin of error of 5% and a probability of 95% (Baykul & Güzeller, 2020). This study was conducted with 401 students. Therefore, the number of samples is considered to be sufficiently representative of the population. The convenience sampling technique was used to determine the study group. In this method, each unit to be selected for sampling is given an equal probability of being selected. In other words, all individuals forming the population group are equal and have an independent chance of being selected, and the selection of individuals does not affect each other (Büyüköztürk et al., 2016). The frequency distribution of the data obtained regarding the socio-demographic characteristics of the students selected for the research is shown in Table 1.

Table 1. Frequency and Percentage Values of Students' Socio-Demographic Variables

Variables		f	%
Gender	**Female**	198	49.4
	Male	203	50.6
Mother Educational Level	**Illiterate**	4	1.0
	Primary school	48	12.0
	Secondary school	48	12.0
	High school	117	29.2
	University	184	45.9
Father Educational Level	**Illiterate**	2	0.5
	Primary school	23	5.7
	Secondary school	33	8.2
	High school	103	25.7
	University	240	59.9

Number of siblings	**1**	101	25.2
	2	142	35.4
	3	112	27.9
	4	41	10.2
	5 and 5+	5	1.2
Preschool Education Level	**None**	32	8.0
	1 year	186	46.4
	2 year	183	45.6
Book Reading Frequency	**I never read**	4	1.0
	I read once a week	78	19.5
	I read more than once a week	137	34.2
	I read once a month	3	0.7
	I read every day	179	44.6

Data Collection Tools

The data collection tools used in this study were the Life Studies Lesson Attitude Scale, developed by Oker and Tay (2020), to measure students' attitudes towards life science lessons, and the Critical Thinking Tendency Scale, developed by Uluçınar and Akar (2021), to measure students' critical thinking skills. Information about the data collection instruments is given below.

Life Studies Lesson Attitude Scale: In the research, the "Life Sciences Attitude Scale" developed by Oker and Tay (2020) was used to measure the attitudes of the 2nd and 3rd-grade students towards the Life Studies lesson. The scale is in a 3-point Likert type and consists of 16 items. There are three dimensions in the scale. These dimensions are; negative attitudes towards life studies lessons (6 items), positive attitudes towards life studies lesson content (5 items), and positive attitudes towards life studies lessons (5 items). It is seen that Cronbach's Alpha coefficient for the final version of the scale, which consists of 16 items, is 0.88. When the Cronbach Alpha coefficients for the sub-dimensions of the scale are examined; 0.77 for the first sub-dimension consisting of 6 items; 0.81 for the second sub-dimension consisting of 5 items; The Cronbach Alpha coefficient for the third sub-dimension consisting of 5 items was calculated as 0.71. The items were graded as "1. Disagree, 2. Partially Agree, 3. Agree". Some of the items in the scale are given below:

● Negative Attitudes Towards Life Studies Lesson:
-I think that the Life Sciences course is boring.
● Positive Attitudes towards Content of Life Studies Lesson:
- Life studies Lesson makes me realize my duties towards nature.
● Positive Attitudes Towards Life Studies Lesson:
- I feel peaceful in the life studies Lesson.

Critical Thinking Tendency Scale: The "Critical Thinking Tendency Scale" developed by Uluçınar and Akar (2021) was used to measure the critical thinking tendencies of 3rd and 4th-grade students in the study. The scale is in a 4-point Likert type and consists of 18 items. There are 4 dimensions in the scale. These dimensions are; maturity and open-mindedness (4 items), attentiveness and skepticism (5 items), inquisitiveness and questioning (5 items), bias and objectivity (4 items). According to the results of the reliability analysis of the scale, it is seen that the item-total correlations of the items in each dimension are above the predicted 0.250 value, and Cronbach's Alpha coefficients, which are the internal consistency parameters, are above 0.60. The items in the scale were graded as "1- Never, 2- Sometimes, 3- Often, 4- Always". Some of the items in the scale are given below:

● Maturity and Open-Minded:
- Even if it seems wrong to me, I listen to what the other person says and try to understand.
● Skepticism:
- I doubt the accuracy of the source of the information I have learned (book, television, internet, etc.).
● Curiosity and Questioning:
- My friends, family, and teacher tell me that I am a curious person.
● Bias / Objectivity:
- When two friends argue, I think my best friend is right.

Data Collection Process

In order to collect the data in the research, 401 primary school students of the 3rd grade participated in using the "Life science lesson and students' attitudes scale" and the "Critical thinking tendency scale for primary school students". All the necessary information was given to the teachers and students by the researchers. The scales were used during a life science lesson.

Analysis of Data

Normality distributions were examined to determine the test techniques to analyze the data. For this purpose, Kolmogrov-Smirnov, histogram graph, skewness, and kurtosis values were examined. As a result of the analyses, it was found that the scores of the sub-dimensions of the Life Studies Teaching Attitude Scale were horizontal, and the data were cleaned from extreme values according to the Z-test. The total score and sub-dimension scores of the Critical Thinking Tendencies Scale were found to be within normal ranges in terms of skewness and kurtosis. The results of the Kolmogrov-Smirnov normality test, performed because the data set was greater than 100, were significant ($p<0.05$); it was observed that it did not show a normal distribution. Considering that this could be due to many data, histogram plots were examined. When the histogram graphs obtained were examined, it was found that the total scores of the Life Studies Teaching Attitude Scale and the sub-dimension scores showed a normal distribution. While the scores of the critical thinking tendencies scale and the sub-dimensions of cautious and skeptical, curious and questioning, unbiased and objective show a normal distribution, the sub-dimensions of maturity and open-mindedness show a left-skewed distribution. In addition, the histograms for gender, number of siblings, level of preschool education, and frequency of reading books showed a normal distribution, but the level of education of their mothers and fathers was skewed to the left. Therefore, while parametric tests were used for normally distributed data, non-parametric tests (Independent group T-Test, ANOVA, Kruskal-Wallis H Test, Independent Groups T-Tests) were used for non-normally distributed data.

Ethical Considerations

For the data collection, the interview participants were informed in writing of the study’s nature and that there was no ramification if they decided to opt-out at any time. The interview instrument and consent information were hosted on the researchers’ personel computer and safeguarded by a password. Study’s participation resulted in minimal risks to respondents. In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. None of the actions stated under the title "Actions Against Scientific Research and Publication Ethics", which is the second part of the directive, were not taken. Ethical review board name: Gaziantep University Social Sciences and Humanities Ethics Committee. Date of ethics review decision: 04/01/2023. Ethics assessment document issue number: 283038.

FINDINGS

In this part of the research, the analyzes are presented. In addition, in this part of the study, the findings obtained by analyzing the responses of third grade students to the "Life Studies Lesson Attitude Scale" and "Critical Thinking Tendencies Scale" in line with the main and sub-purposes are presented.

Findings Related to the First Question of the Study

The descriptive results obtained as a result of the analysis of the first question are given in Table 2.

Table 2. Descriptive Results of Students' Life Studies lesson Attitudes and Critical Thinking tendency Levels

	n	Min.	Max.	$\overline{X}$	Sd
Level of Life Studies Lesson Attitude	401	24.00	42.00	34.1845	2.90876
Level of Critical Thinking Tendency	401	26.00	72.00	49.1920	7.35327

When Table 2. is examined, it can be seen that the student's attitudes towards the Life Studies lesson and their critical thinking tendencies levels are different. It can be seen that the mean level of critical thinking tendencies (X^2=49.1920) and the standard deviation score (Sd=7.35327) are higher than the attitude level of Life Studies lesson.

Findings Related to the Second Question of the Study

The correlational results obtained as a result of the analysis of the second question are given in Table 3.

Table 3. Correlational Results Between Students' Life Studies Lesson Attitude Scores and Critical Thinking Tendency Scores

	Life Studies Lesson Attitude	Critical Thinking Tendency
Life Studies Lesson Attitude		.231
p		.000**
n		401
Critical Thinking Tendency	.231	
p	.000**	
n	401	

**p<.05

When examining Table 3, it was found that there was a low, positive, and significant relationship between the students' attitudes toward the Life Studies lesson and their critical thinking tendencies (r=0.231, p<.05).

Findings Related to the Third Question of the Study

The independent groups' t-test results obtained as a result of the analysis of the gender among the demographic variables are given in Table 4.

Table 4. Independent group T-Test Results of Students' Attitudes Towards Life Studies Lesson for Gender

Gender	n	$\overline{X}$	S	Sd	t	P
Female	198	34.7323	2.91052	399	3.786	.000
Male	203	33.6502	2.81278	397.610	3.784	

Looking at Table 4, it can be seen that the average of the points (X^2=34.7323) of the female students in the attitude scale to life sciences teaching is higher than the average of the points of the male students (X^2=33.6502). When we looked at the "p" value to determine whether the difference between them was statistically significant, it was concluded that the difference between them was statistically significant (p=0.000, p<0.05). It was found that female students have a more positive attitude toward Life Studies lessons than male students.

The results of the one-way analysis of variance obtained as a result of the analyses made for the demographic variables of the number of siblings, the level of preschool education, and the frequency of reading books are presented in Table 5.

Table 5. ANOVA Results Regarding Students' Attitude Scores Towards Life Studies Lesson and Some Variables

Variables		n	x̄	S	S.V	Sum of Squares	Sd	A.S	*f*	p
Number of Siblings	1 siblings	101	34.13	2.83						
	2 siblings	142	34.35	2.81	B.G.	28.02	4	7.007	0.827	0.509
	3 siblings	112	33.84	2.94	W.G.	3356.31	396	8.476		
	4 siblings	41	34.48	3.31	Total	3384.34	400			
	5 ve 5+	5	35.40	2.70						
Preschool Education Level	None	32	34.31	3.21	B.G.	2.06	2	1.032	0.121	0.886
	1 Year	186	34.23	3.02	W.G.	3382.28	398	8.498		
	2 Year	183	34.10	2.73	Total	3384.34	400			
Frequency of Book Reading	I never read	4	34.75	3.20						
	I read once a week	78	34.48	3.00	B.G.	14.55	4	3.638	0.428	0.789
	I read more than once a week	137	33.98	2.98	W.G.	3369.79	396	8.510		
	I read once a month	3	34.66	1.52	Total	3384.34	400			
	I read every day	179	34.18	2.83						

When Table 5 is examined, it has been determined that none of the students' attitudes towards the Life Studies lesson on the demographic variables of the number of siblings, preschool education Level, and frequency of reading books do not show a significant difference.

The Kruskal-Wallis results obtained as a result of the analyzes made for the demographic variables of the mother's education level and father's education level are given in Table 6.

Table 6. The Results of the Kruskal-Wallis H Test on the Attitude Scores of the Students and the Variables of Educational Level of Their Fathers and Mothers

Variables		n	S.O	Sd	X^2	p
Mother	Illiterate	4	159.38			
	Primary school	48	211.45	4	2.729	.604
	Secondary school	48	217.32			
	High school	117	203.23			
	University	184	193.50			

Father	Illiterate	2	167.00			
	Primary school	23	192.13	4	0.831	.934
	Secondary school	33	214.53			
	High school	103	198.34			
	University	240	201.41			

As can be seen in Table 6., the 'Kruskal Wallis H' test was conducted to determine whether the students' Life Studies course attitude scores showed a significant difference according to the educational level of their fathers and mothers. As a result, no significant difference was found between students' Life Studies lesson attitude scores and the educational level of their fathers and mothers. (X^2= 2.729; X^2= 0.831, p>0.05).

Findings Related to the Fourth Question of the Study

The independent groups' t-test results obtained as a result of the analysis of the gender among the demographic variables are given in Table 7.

Table 7. Independent Groups T-Test Results of Students' Critical Thinking tendency for Gender

Gender	**n**	$\overline{X}$	**S**	**Sd**	**t**	**P**
Female	198	49.1061	7.24298	399	-0.231	.817
Male	203	49.2759	7.47622	398.982		

When Table 7 is examined, it is seen that the average scores of male students from the critical thinking tendency scale (X^2=49.2759) are higher than the average scores of female students (X^2=49.1061). When we looked at the "p" value to determine whether the difference between them was statistically significant, it was concluded that there was no significant difference (p=0.817, p>0.05).

The results of the one-way analysis of variance obtained as a result of the analyzes made for the demographic variables of the number of siblings, preschool education Level, and frequency of book reading are given in Table 8.

Tablo 8. ANOVA Results of Students' Critical Thinking Tendency and Some Variables

Variables		**n**	**x̄**	**S**	**S.V**	**S.S.**	**Sd**	**A.S**	***f***	**p**	**Difference**
Number of siblings	1)1 sibling	101	50.90	7.98	B.G.	461.27	4	115.319	2.157	.073	
	2)2 siblings	142	48.83	7.14	W.G.	21166.93	396	53.452			
	3)3 siblings	112	48.48	7.21	Total	21628.21	400				
	4)4 siblings	41	48.65	6.51							
	5)5 ve 5+	5	45.20	5.01							
Preschool education level	1)None	32	48.75	7.52	B.G.	39.40	2	19.702	0.363	.696	
	2)1 Year	186	48.93	7.17	W.G.	21588.81	398	54.243			
	3)2 Year	183	49.53	7.52	Total	21628.21	400				
Frequency of book reading	1)I never read	4	51.50	7.93	B.G.	1166.20	4	291.551	5.642	.000*	
	2)I read once a week	78	46.29	7.13	W.G.	20462.01	396	51.672			
	3)I read more than once a week	137	48.81	6.93	Total	21628.21	400				
	4)I read once a month	3	45.66	15.27							
	5)I read every day	179	50.74	7.24							5>2

***p<.05**

Looking at Table 8, the critical thinking tendencies of the students change according to the frequency of reading books. It can be seen that there is a significant difference (p=0.000, p<0.05) between the critical thinking tendencies of the students and the demographic variable of the frequency of reading books. According to the results of the Scheff f test, which was carried out to find out between which groups the difference in reading frequency times, it can be seen that there is a significant difference between reading a book every day and reading a book once a week. It was found that there was no significant difference between the number of siblings and the demographic variables of preschool education level and critical thinking tendencies of the students.

The Kruskal-Wallis results obtained as a result of the analyses carried out on the demographic variables of the mother's and father's educational level are presented in Table 9.

Table 9. The Results of the Kruskal-Wallis H Test on the Students' Critical Thinking Tendency Scores and the Variables of Educational Level of Mother and Fathers.

Variables		**n**	**S.O**	**Sd**	**X^2**	**p**
Mother	Illiterate	4	273.63			
	Primary school	48	191.17	4	4.608	.330
	Secondary school	48	211.01			
	High school	117	187.29			
	University	184	208.09			
Father	Illiterate	2	356.75			
	Primary school	23	174.24	4	9.191	.057
	Secondary school	33	175.86			
	High school	103	189.19			
	University	240	210.79			

As seen in Table 9, no significant difference was found between the education level of the mother/fathers and the students' critical thinking tendency scores (X^2= 4.608; X^2=9.191, p>0.05).

Findings Related to the Fifth Question of the Study

The Simple Linear Regression results obtained as a result of the analysis are presented in Table 10.

Table 10. Simple Linear Regression Results regarding the Predictions of Attitudes and Tendencies

	B	**Standard error**	**β**	**t**	**p**
Critical thinking tendency	0.091	0.019		4.734	.000**
Life Studies course attitude	0.583	0.123	0.231	4.734	.000**

R=231; R^2=0.053; R^2=0.051; F=22.406; p=.000

When Table 10 is examined, it is seen that students' attitudes towards the Life Studies lesson affect their critical thinking tendencies. According to the results of the regression analysis, it was determined that the attitudes of the students toward the Life Studies lesson had a statistically significant effect on their critical thinking tendency (F=22.406, p=0.000). Attitudes of students toward Life Studies lessons predict their critical thinking tendencies positively and significantly. Students' attitudes towards the Life Studies lesson have an effect of .05% on their critical thinking tendencies (R^2= 0.053).

The Multiple Linear Regression results obtained as a result of the analysis are presented in Table 11.

Table 11. Multiple Linear Regression Analysis Results Regarding the Prediction of Students' Attitudes Towards Life Studies Lesson to Critical Thinking Tendency

Dependent Variable	Independent variable	B	Standard error	β	t	p
Critical Thinking Tendencies	Constant	31.583	4.287		7.368	.000**
	Negative Attitudes Towards Life Studies Lesson	-0.332	0.241	-0.066	-1.374	.170
	Positive Attitudes Towards content of Life Studies Lesson	0.569	0.281	0.102	2.026	.043**
	Positive Attitudes Towards Life Studies Lesson	1.196	0.225	0.268	5.326	.000**

$R=0.316$; $R^2= 0.100$; $R^2=0.093$; $F=14.686$; $p=0.000$

Looking at Table 11, it can be seen that the variance explained by the variables that are significant at the $p<0.01$ level regarding critical thinking tendencies is statistically significant ($F=14.686$, $p=0.000$). Looking at the results of the analysis, positive attitudes towards the content of the Life Studies lesson and positive attitudes towards the Life Studies lesson explain approximately 10% of the variance in the sub-dimensions. When the parameters of the regression model are examined, according to the standardized regression coefficient (β), the order of importance of the predictor variables on critical thinking tendencies; it is seen that positive attitudes towards the Life Studies lesson are in the form of positive attitudes towards the content of the Life Studies lesson and negative attitudes towards the Life Studies lesson. Considering all the variables, it was found that positive attitudes towards the Life Studies lesson and positive attitudes towards the content of the Life Studies lesson were significant predictors of critical thinking tendencies. It was found that the sub-dimension of negative attitude towards the Life Studies lesson was not a significant predictor. Regression equation (mathematical model) for predicting critical thinking tendencies according to the obtained regression results; "Critical thinking tendencies= 31.583 - 0.332 (Negative attitudes towards the Life Studies lesson) + 0.569 (Positive attitudes towards the content of the Life Studies lesson) + 1.196 (Positive attitudes towards the Life Studies lesson)".

DISCUSSION AND CONCLUSION

The aim of this study was to investigate the relationship between the attitudes of 3rd-grade primary school students towards the Life Studies course and their critical thinking tendencies. According to the findings of the study, when the attitudes and critical thinking tendencies of the 3rd-grade primary school students were examined, it was concluded that the critical thinking tendencies of the students were higher. It was found that there was a low, positive, and significant relationship between the students' attitudes toward Life Studies and their critical thinking tendencies. It was concluded that there was a positive relationship between students' attitudes towards the Life Science course and their critical thinking tendencies. Looking at similar studies in the literature, it can be said that primary school students generally have a positive attitude toward the Life Studies lesson (Oker and Tay, 2020; Sarı, 2020). In the study conducted by Oker (2019), the attitudes of 2nd and 3rd-grade primary school students towards the Life Studies lesson were compared and it was found that the 3rd-grade students had a more positive attitude towards the lesson. In another study, a result in

favor of the 2nd-grade students was found (Çetin, 2020). Pennington (2021) states that perceptions and tendencies regarding a course, subject or phenomenon continue into adulthood. Students are asked to express their knowledge verbally. Thus, in the development of cognitive competence, different learning strategies based on dialogue and discussion that help thinking are used (Thibodeau & Hillman, 2003; Meister & Jenks, 2000). It has been found that students' attitudes towards the life studies lesson are positively affected by various methods used in the third grade of primary schools such as the jigsaw technique, analytical story method, Dunn learning style, story-based activities, scenario-based learning and authentic task-based learning (Ceylan, 2016; Gündoğan, 2017). Going beyond the traditional understanding and using critical thinking as the basis of the instructional processes carried out has a positive effect on the critical thinking skills of primary school students, their academic success, the persistence of instruction, and their attitude towards instruction. The results of this study are similar to other studies conducted on the impact of students on learning outcomes (Antecol et al., 2015; Ehrenberg, Winters, Haight, Swaim & Pickering, 1995). Some methods, such as brain-based learning, discussion techniques, and argument maps, have a positive effect on students' critical thinking skills (Palavan, 2012).

According to the results of the research, there is a significant positive difference among female students. In his study, Çetin (2020) examined the attitudes of 2nd and 3rd-grade primary school students towards the Life Studies lesson according to gender, compared them positively and negatively, and found that the result was in favor of male students in both cases. Sarı (2020), in his study conducted on 2nd and 3rd-grade primary school students, concluded that the attitudes of male students towards the Life Studies lesson are more positive than those of female students. It was found that there was no positive or negative difference in the attitudes of 3rd-grade students towards the Life Studies lesson according to the gender variable. Getting different results in different studies shows that gender is not a determining variable in attitudes toward the Life Studies lesson.

In this study, when the critical thinking tendencies of students were evaluated according to gender, it was found that the results were in favor of male students, but this situation was not statistically significant. In some of the studies conducted on fourth-grade students, different results were obtained that the gender variable did not affect critical thinking (Akar and Kara, 2016; Karasakaloğlu and Bulut, 2012; Yüksekbilgili, 2019). Some of the studies conducted on primary school students found the opposite results to this study and determined that the level of critical thinking skills of female students was higher than that of male students (Aydoğdu, 2020).

According to the research findings; When students' attitudes towards Life Studies lessons were analyzed according to demographic variables such as education level of mother/father, number of siblings, preschool education level, and frequency of reading books, it was concluded that none of these demographic variables affected students' attitudes towards Life Studies lesson. It can be seen that the mother's level of education and the number of siblings do not affect the attitudes of primary school students in grade 3 toward Life Studies, while the father's level of education has a negative effect on the students' attitudes towards Life Studies. It was found that the preschool education of the 2nd and 3rd-grade students and the educational level of the mother/father did not affect the attitudes toward the Life Studies lesson (Sarı, 2020).

Based on the research results, when the critical thinking tendencies of the students were analyzed according to demographic variables such as the educational level of the mother/father, the number of siblings, the level of preschool education, and the frequency of reading books, it was found that the frequency of reading books has a positive effect on the critical thinking tendency and there is a significant difference in favor of the students who read books every day and the students who read a book once a week. However, it was concluded that other demographic variables did not affect students' critical thinking tendencies. In studies with

similar results, it has been found that the fourth-grade students' attendance at kindergarten before starting primary school, the difference in the number of siblings, and the difference in the educational level of their parents do not affect their critical thinking abilities (Yüksekbilgili, 2019). Some studies have found that as the educational level of parents increases, the critical thinking skills of students increase, and the critical thinking skills of students who read more books increase (Okoli, 2017; Melnick & Meister, 2008; Siddig, Scherer & Tondeur, 2016). Kara (2019) concluded that the educational level of mothers did not affect students' critical thinking attitudes, but students whose fathers were high school graduates had higher critical thinking attitudes.

Recommendations

Based on the results of the research, it is believed that critical thinking is one of the most important skills that students should acquire. Technological and social developments in today's world show us that it is appropriate for students to acquire critical thinking skills at an earlier age. For this reason, critical thinking skills should be included more in the curriculum of Life Studies in the first, second, and third years of primary school. In addition, research can be conducted on the teaching of critical thinking to different groups of students. Considering those primary school teachers play a very important role in students' acquisition of critical thinking skills, in-service training programs can be conducted on how teachers can acquire critical thinking skills and what kind of methods they can use while teaching. The research can be carried out using the experimental method with experimental-control groups.

Limitations

Primary school 3rd grade students were included in this study. Primary school 1st, 2nd and 4th grade students were not included in the study. Another limitation of the study is that it was conducted in a single city center. In addition, the research results are based only on quantitative data.

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Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None