

Analysis of the relationship between science and environmental attitudes with certain value tendencies of secondary school students

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ABSTRACT

The present study aimed to establish the relationship between middle school students' attitudes toward science and the environment with their love, respect, responsibility, empathy, aggression, bullying tendencies and attitudes toward reading. One of the most general survey models, the relational survey model was employed in the study, and it was conducted with the participation of 216 secondary school students. Data were collected using the Attitude Scale for Science, Environmental Attitude Scale, Tendency to Love Scale, Tendency to Respect Scale, Personal and Social Responsibility Scale, Cognitive, Affective and Somatic Empathy Scale, Aggression Scale, Cognitions Related Bullying Scale and Attitudes Towards Reading Scale. The data obtained were analyzed with SPSS package software. The results of the study revealed that there was a positive and low-level relationship between students' science attitudes and their tendency to love, empathy, aggression, and bullying, and a positive and medium-level relationship between science attitudes and their tendency to be respectful, responsible behaviors and reading tendencies and that these relationships were statistically significant. It was concluded that there was a positive and low-level relationship between students' attitudes towards the environment and their tendency to be respectful, responsible behaviors, aggression and bullying tendencies, and a positive and moderate relationship between their attitudes towards the environment and their love tendency, empathy and reading tendency scores, and this relationship was statistically significant.

Keywords: Values education, science, environment, love, respect, empathy, bullying.

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INTRODUCTION

The increase in human mobility across countries in recent years due to globalization, war and economic reasons has made it essential for people with different beliefs and cultures to live together in various countries. It is a fact that harmony is one of the most vital keys to the peace and prosperity of society. One of the most prominent factors in the process of adapting to a different culture is education. The overall aim of education is to help individuals adapt to society healthily and productively by ensuring their social, emotional, psychological, and academic development. The individual, who has been developing under the

influence of family and social environment since his early years of life, continues his development through education and training processes when school age is reached. This enables the individual to adapt to society and engage in cognitive, emotional, and physical interactions with the social environment. It is extremely crucial for the individual to adapt to society and to keep up with the social and cultural values that exist in society. In this regard, it is essential to teach various values such as love, respect, tolerance, compassion, responsibility, and empathy, and to avoid negative behaviors such as aggression and

bullying. Several of these values are included in the curriculum, and individuals acquire them directly or indirectly by associating them with both subjects and other values and skills. In the acquisition of values, a teaching process that includes in-class or out-of-class activities is carried out in accordance with various methods and techniques. The developmental levels and needs of students, the expectations of society, and the aims of education are taken into account in the activities carried out. Furthermore, depending on the activity chosen, not all the values that the curriculum aims to acquire may be present simultaneously and some values may be at the forefront more.

In the study conducted by Baş and Beyhan (2012) analyzing the postgraduate theses on values education between 2005 and 2010, it was concluded that the majority of the studies were conducted in the field of educational programs and teaching. Kapkın, Çalışkan and Sağlam (2018) analyzed the postgraduate thesis studies on values education between 1997 and 2017, and revealed that the highest rate was in the field of Turkish education and Turkish education as a foreign language and on the perception of values in literary works. Both studies indicated that there are very few studies on values education. However, although an increase in the number of studies in the field of values education has been observed in the literature in recent years, these studies are mostly focused on Turkish (Coşkun and Derse, 2021; Mete and Dağ, 2019), Social Sciences (Elbay, 2022; Tahiroğlu and Çetin, 2019), Religious Culture and Moral Knowledge (Zengin and Altuntaş, 2018) courses, only very few studies were encountered in which values education was questioned in the Science course. Nevertheless, values education has been included in the science curriculum in Türkiye since 2005. The Science and Technology curriculum in 2005 included Attitude and Value (AT) outcomes to be gained by students. These learning outcomes are organized in a way that supports students to acquire scientific and technological knowledge and to utilize this knowledge for the mutual benefit of themselves, society, and the environment. Additionally, these outcomes also aim for students to respond to actions, events and objects, to be satisfied with their reactions, to give importance and value to the situations around them, to develop a coherent value system and to create a lifestyle under the control of this value system (MoNE, [Ministry of National Education], 2005). The 2013 revised Science Curriculum included the sub-headings of attitude, motivation, value, and responsibility in the field of affective learning (MoNE, 2013). 2018 updated Science Curriculum includes "justice, friendship, honesty, self-control, patience, respect, love, responsibility, patriotism, and benevolence" among the core values. It was underlined that these values would come to life in the learning-teaching process by themselves, in association with the sub-values they are related to and with other core values.

The curriculum states that values, which constitute basic human characteristics, are the source of the power to take action in the routine flow of life and in dealing with the problems encountered (MoNE, 2018).

The attitude started to be studied scientifically in the 19th century (Arkonaç, 2011) and was first defined by Allport (1935) in the psychological literature. According to this definition, attitude includes important concepts such as being organized, readiness, being learned through experience, mental and nervous state, and the effect of dynamism on behavior (Aronson and Lindzey, 1969). Attitude is defined by Thurstone (1967) as psychological states that lead to an object orientation or cause a distance from an object. Wallace (1997) explained attitude as the feelings that an individual learns in order to evaluate objects, events, people and situations related to learning. An individual's attitude towards an event, situation or object cannot be observed directly, but the individual's attitudes significantly affect his love, hate and behavior towards this event, situation or object (Morgan, 1995).

The attitude towards science is defined as students' positive and negative thoughts about science (Craker, 2006). The environmental attitude is all of the positive or negative demeanors and thoughts of people towards the environment, such as fear, anger, restlessness, values and readiness for the solution of environmental problems (Erten, 2005).

Herdem and Çinici (2021) revealed that teaching activities integrated with the values of tolerance, democratic culture, solidarity, self-confidence, and perseverance in teaching the subjects of simple machines, electric current, current, voltage, atomic structure and mixtures were effective on the value acquisition of seventh-grade students. The study conducted by Aktaş and Bozdoğan (2016) concluded that the activities associated with the value of compassion for the Human and Environment unit in the science course improved students' compassion value positively. Moreover, the study conducted by Şentürk and Arslan (2020) found that teachers, who are the practitioners of the science course, stated that students can acquire the values of love, respect, responsibility and empathy in the science course. The same study also showed that values education should be included in science courses since science courses integrate science with society, focus on nature and living things, and aim to raise wise and good people. These studies conducted in the field of science analyzed the effectiveness of some activities integrated with the values related to science subjects on the stated values. However, no study was encountered in which the relationship between students' attitudes towards science and the environment and values was revealed. Therefore, the present study has been conducted to statistically analyze the correlational relationship between attitudes of middle school students in Türkiye towards science and the environment with their values of love, respect, responsibility, empathy, positive states such as reading

tendency and negative behaviors such as aggression and bullying. The questions sought to be answered in the study are as follows:

1. Is there a significant relationship between students' science attitudes and love tendencies?
2. Is there a significant relationship between students' science attitudes and respect tendencies?
3. Is there a significant relationship between students' science attitudes and responsibility tendencies?
4. Is there a significant relationship between students' science attitudes and empathy tendencies?
5. Is there a significant relationship between students' science attitudes and aggression tendencies?
6. Is there a significant relationship between students' science attitudes and bullying tendencies?
7. Is there a significant relationship between students' science attitudes and reading tendencies?
8. Is there a significant relationship between students' attitudes toward the environment and love tendencies?
9. Is there a significant relationship between students' attitudes toward the environment and respect tendencies?
10. Is there a significant relationship between students' attitudes toward the environment and responsibility tendencies?
11. Is there a significant relationship between students' attitudes toward the environment and empathy tendencies?
12. Is there a significant relationship between students' attitudes toward the environment and aggression tendencies?
13. Is there a significant relationship between students' attitudes toward the environment and bullying tendencies?
14. Is there a significant relationship between students' attitudes toward the environment and reading tendencies?

METHODOLOGY

Research model

One of the general survey models, the relational survey model has been employed in the study. This model can be used where experimental models cannot be used due to time and economic insufficiency (Köse, 2010). The relational survey model is a survey model that aims to determine the existence and/or degree of change between two or more variables (Karasar, 2010). A cause-effect relationship is not sought in the model but it makes it possible to predict and interpret relationships. In this model, there are three situations: "There is no relationship between two variables", "There is a relationship between two variables and it is directly proportional", and "There is a relationship between two variables and it is inversely proportional" (Köse, 2010).

Study group

The study was conducted with a total of 216 students (54 for each grade level) studying in the fifth, sixth, seventh and eighth grades in a middle school in a district of Samsun Province in Türkiye affiliated to the Ministry of National Education. The study group was selected based on convenience sampling under purposive sampling methods. Convenience sampling is a type of sampling in which a situation that is easy to reach by the researcher is selected so that the speed and practicality of the research process are gained (Yıldırım and Şimşek, 2011).

Data collection tools

Science Attitude Scale, Environmental Attitude Scale, Tendency to Love Scale, Tendency to Respect Scale, Individual and Social Responsibility Scale, Cognitive, Affective and Physical Empathy Scale, Aggression Scale, Bullying Related Cognitions Scale and Attitudes toward Reading Scale were administered to the study group to obtain data. This section presents the purposes of the measurement tools used and introduces the scales.

Permission was obtained from Samsun Provincial Directorate of National Education for the application of the scales in the study. Parents' permission was also obtained for the administration of the measurement tools to the students. The measurement tools were administered to the students using pseudonyms at three separate times.

While developing the scale the data obtained should be suitable for factor analysis. The Barlett Globality Test and the Kaiser-Mayer-Olkin (KMO) coefficient are examined to determine the accordance of the data for factor analysis. KMO coefficient greater than 0.60 indicates the suitability of the data structure for forming factors. The Barlett test examines whether there is a relationship between the variables in the context of partial correlation. The chi-square statistics calculated in the Barlett test are significant indicating that the data set is appropriate and the normality of the scores (Büyükoztürk, 2010).

Attitude scale for science

The scale was developed by Şener (2016) to assess middle school students' attitudes toward science. The scale is a five-point Likert scale with the following options: "strongly disagree, disagree, neutral, agree, and strongly agree." The (KMO) coefficient of the scale was found to be 0.907, whereas the Bartlett Sphericity test result was significant, and the Cronbach Alpha reliability coefficient was measured as 0.870. Consisting of 21 items, the lowest score that can be obtained from the scale is 21 and the highest score is 105.

Environmental attitude scale

The scale was developed by Özata-Yücel and Özkan (2014) to assess middle school students' attitudes toward the environment. The scale is a five-point Likert scale with the following options: "never, rarely, occasionally, mostly, always." The KMO coefficient of the scale was found to be 0.890, whereas the Bartlett Sphericity test result was significant, and the Cronbach Alpha reliability coefficient was measured as 0.84. The lowest score that can be obtained from the 21-item scale is 21 and the highest score is 105.

Tendency to love scale

The scale was developed by Sarmusak (2011) to explain the love tendencies of students in identifying their moral behavior levels. The scale is a four-point Likert-type scale consisting of "always, mostly, very rarely and never" and consists of 11 items. The KMO coefficient of the scale was found to be 0.740, whereas the Bartlett Sphericity test result was significant, and the Cronbach Alpha reliability coefficient was measured as 0.732. The lowest score that can be obtained from the scale is 11 and the highest score is 44.

Tendency to respect scale

The scale was developed by Sarmusak (2011) to explain students' respect tendencies in identifying their moral behavior levels. The scale is a four-point Likert-type scale consisting of "always, mostly, very rarely and never" and consists of 14 items. The KMO coefficient of the scale was found to be 0.709, whereas the Bartlett Sphericity test result was significant, and the Cronbach Alpha reliability coefficient was measured as 0.773. The lowest score that can be obtained from the scale is 14 and the highest score is 56.

Personal and social responsibility scale

The scale was developed by Li, Wright, Rukavina and Pickering (2008) and adapted into Turkish by Filiz and Demirhan (2015). The scale is a six-point Likert scale, with the following options: "Strongly disagree, slightly disagree, disagree, agree, slightly agree, strongly agree". The scale was administered to 250 secondary school students in exploratory factor analysis and 210 secondary school students in confirmatory factor analysis during the adaptation of the scale. At the end of the adaptation process, it was concluded that the scale consisted of a single dimension called responsibility behaviors and 13 items. The KMO value of the scale was found to be 0.947,

whereas the Bartlett Sphericity test result was significant, and the internal consistency coefficient was measured as 0.925. The study indicated that since the statements in the scale are general statements covering responsibility behaviors, they can be applied in the fields of education, psychology and guidance, and that it is a valid and reliable measurement tool suitable for Turkish culture. The lowest score that can be obtained from the scale is 13 and the highest score is 78.

Cognitive, affective and somatic empathy scale

The scale was developed by Raine and Chen (2018) and adapted into Turkish by Güzel, Sevi-Tok, and Güney (2019) in order to bring a measurement tool that can assess cognitive, emotional and physical empathy into Turkish. The scale consists of 30 items and is scaled as "rarely, sometimes, often". The Cronbach Alpha reliability coefficient of the scale was measured as 0.840. The lowest score that can be obtained from the scale is 30 and the highest score is 90.

Aggression scale

The scale was developed by Şahin (2004) to determine the aggression levels of students. The scale consists of 13 items and is scaled as "I always do it, I sometimes do it, I never do it". The Cronbach's alpha reliability coefficient of the scale was calculated to be 0.940. The lowest score that can be obtained from the scale is 13 and the highest score is 39. The scoring was conducted in such a way that students with high aggression scores had more aggression tendencies.

Cognitions-related bullying scale

The scale was developed by Gökkaya and Tekinsav-Sütçü (2015) to assess middle school students' cognitions about bullying. The scale consists of 22 items and is scaled as "not true at all, somewhat true, quite true and completely true". The KMO coefficient of the scale was 0.958, whereas the Bartlett Sphericity test result was significant, and the Cronbach Alpha reliability coefficient was measured as 0.870. The lowest score that can be obtained from the scale is 22 and the highest score is 88. The scoring was conducted in such a way that the student with a high bullying score had a higher tendency to bully.

Attitudes toward reading scale

The scale was developed by Karadağ (2022) to determine middle school students' attitudes toward reading. The

scale is a five-point Likert scale, consisting of 14 positive and 3 negative items, and has the following options: "strongly disagree, disagree, neutral, agree, strongly agree." The KMO coefficient of the scale was calculated as 0.941, whereas the Bartlett Sphericity test result was significant, and the Cronbach Alpha reliability coefficient was measured as 0.947. The lowest score that can be obtained from the scale is 17 and the highest score is 85.

Data analysis

The scores obtained from the scales were separately entered into the SPSS package program based on their own Likert scale structure and scored. Negative items were reverse-coded in the software. The normality of the variables was taken into account to determine the tests to be used for the analysis. Sample size constitutes a criterion in deciding on the test to be used in determining the normality of variability. Kolmogorov-Smirnov test, Anderson-Darling test, Cramer-von Mises test and Shapiro-Wilk test are statistical tests frequently used to determine normality. Among these tests, the Shapiro-Wilk test gives the best and most precise results in small samples (Ahad, Yin, Othman and Yaacob, 2011). The Shapiro-Wilk test is suitable when the sample is between 3 and 50, and the Kolmogorov-Smirnov test is suitable when the sample is 50 and above (Shapiro and Wilk, 1965).

Quantitative studies analyze whether there is a statistically significant difference between two variables. The level of significance (p) is the level at which this difference becomes statistically significant for the interpretation of the results. Choosing a small significance level increases the reflection rate of the result (Çepni, 2007). The present study chose a significance level of .05.

The fact that the p values are greater than .05 in the normality tests shows that the groups are normally distributed. Parametric tests should be utilized in cases where the groups are normally distributed and nonparametric tests should be utilized in cases where the groups are not normally distributed (Büyüköztürk, 2004).

Since the number of individuals in the groups was over 50, the Kolmogorov-Smirnov test was employed to determine whether the groups were normally distributed or not and p -values were taken into consideration. In cases where the p -values were greater than .05, parametric tests were employed, assuming that the groups were normally distributed, and in cases where the p -values were less than .05, nonparametric tests were employed, assuming that the groups were not normally distributed.

The increasing or decreasing relationship between two or more variables analyzed in studies is called correlation (Çepni, 2007). The correlation coefficient is between -1 and +1. A positive coefficient indicates that the relationship is positive, i.e. one of the values increases while the other

increases, a negative coefficient indicates that the relationship is negative, i.e. one of the values increases while the other decreases, and a coefficient of 0 indicates that there is no relationship between the variables (Fraenkel and Wallen, 2009). The criteria used in the interpretation of correlation analysis are presented in Table 1 (Roscoe, 1975).

Table 1. Correlation coefficient criteria.

Coefficient	Meaning
Less than 0.300	Low level of relationship
0.300 - 0.700	Medium level of relationship
0.700 - 1.000	High level of relationship

If the correlation coefficient is less than 0.300, it is interpreted that there is a low level of relationship between the two variables, if the correlation coefficient is between 0.300 and 0.700, it is interpreted as a medium-level relationship and if the correlation coefficient is between 0.700 and 1.000, it is interpreted as a high-level relationship.

The relationship between two variables in the study is analyzed by Pearson Product Moment Coefficient in cases where both variables are normally distributed, and Spearman-Brown Rank Difference Correlation Coefficient, which is a non-parametric test, in cases where neither of the variables is normally distributed (Büyüköztürk, Çokluk and Köklü, 2010).

RESULTS

In this section, Cronbach Alpha reliability coefficients were calculated for each of them in order to determine the reliability of the scales applied to 216 students within the scope of the research. Then, in order to find answers to the research problems, the analysis of the correlational relations between the scales aiming to determine the value tendencies of the students was presented.

Reliability analysis for measurement tools

The Cronbach Alpha reliability coefficients were calculated in order to determine the reliability of the scales applied in the study. The reliability coefficients obtained are presented in Table 2.

Cronbach Alpha reliability coefficients of all scales used were calculated above 0.700. The reliability coefficient of a test of 0.700 and above is generally considered sufficient in terms of the reliability of that test (Büyüköztürk, 2004; Fraenkel and Wallen, 2009).

Table 2. Cronbach Alpha reliability coefficients of the measurement tools.

Scale	Cronbach's alpha coefficient
Attitude scale for science	0.889
Environmental attitude scale	0.779
Tendency to love scale	0.711
Tendency to respect scale	0.708
Responsibility scale	0.898
Empathy scale	0.867
Aggression scale	0.791
Bullying scale	0.919
Reading scale	0.920

Correlational findings for measurement tools

In this section, answers to 14 questions in the research were sought. Firstly, the Kolmogorov-Smirnov test was

applied to determine the normality of the variables in order to decide on the test to be used first. Then, correlation analysis was performed using non-parametric tests.

Descriptive statistical information about students' scores for the measurement tools and the results of the normality test with the Kolmogorov-Smirnov test are presented in Table 3.

The normality tests revealed that the scores of the science attitude scale and the empathy scale were normally distributed, while the scores of the other scales were not ($p < .05$). Therefore, the Pearson Product Moment correlation coefficient was employed in correlation analyses for normally distributed variables and Spearman-Brown Rank Difference Correlation coefficient was employed for non-normally distributed variables. Pearson Product Moment Correlation was employed in the correlation analysis between science attitude scale scores and empathy scores, and the Spearman-Brown Rank Difference Correlation coefficient was employed in other analyses.

Table 3. Descriptive statistics and Kolmogorov-Smirnov test results of the measurement tools.

Scale	N	Mean	Standard Deviation	p
Attitude scale for science	216	78.02	14.55	.083
Environmental attitude scale	216	82.57	11.53	.018*
Tendency to love scale	216	35.00	4.28	.000*
Tendency to respect scale	216	48.07	4.65	.000*
Responsibility scale	216	64.77	11.71	.000*
Empathy scale	216	70.51	9.90	.200
Aggression scale	216	16.40	3.38	.000*
Bullying scale	216	31.36	10.77	.000*
Reading scale	216	67.61	13.69	.000*

*: $p < .05$, N: The number of participants.

The results of the correlation analysis between the students' science attitude scale scores and the scores of the tendency to love, tendency to be respectful,

responsibility, empathy, aggression, and bullying scale (research questions 1 to 7) are presented in Table 4.

Table 4. Correlation analysis results for the attitude scale for science.

	Love scale	Respect scale	Responsibility scale	Empathy scale	Aggression scale	Bullying scale	Reading scale
Attitude scale for science	r 0.299	0.344	0.391	0.222	-0.218	-0.114	0.410
	p .000*	.000*	.000*	.001*	.001*	.096	.000*
	N 216	216	216	216	216	216	216

*: $p < .05$, r: Correlation coefficient, N: The number of participants.

It was concluded that there was a positive and low-level relationship [$r < 0.300$] between students' attitudes toward

science and their tendencies towards love and empathy, and that these relationships were statistically significant [p

< .05]. It was revealed that there was a positive and medium-level relationship [$0.300 < r < 0.700$] between students' science attitudes and their tendency to be respectful, responsible behaviors and reading tendencies and that these relationships were statistically significant [$p < .05$]. It was also established that there was a negative and low-level relationship [$r < 0.300$] between students' science attitudes and their aggression and bullying

tendencies and that these relationships were statistically significant [$p < .05$].

The results of the correlation analysis between the environmental attitude scale scores of the students and the scores of the tendency to love, tendency to be respectful, responsibility, empathy, aggression, and bullying scale (research questions 8 to 14) are presented in Table 5.

Table 5. Correlation analysis results for the environmental attitude scale.

		Love scale	Respect scale	Responsibility scale	Empathy scale	Aggression scale	Bullying scale	Reading scale
Environmental attitude scale	r	0.316	0.285	0.264	0.340	-0.152	-0.263	0.419
	p	.000*	.000*	.000*	.000*	.026*	.000*	.000*
	N	216	216	216	216	216	216	216

*: $p < .05$, r: Correlation coefficient, N: The number of participants.

It was concluded that there was a positive and low-level relationship [$r < 0.300$] between students' attitudes toward the environment and their tendency to be respectful and responsible behaviors and that these relationships were statistically significant [$p < .05$]. It was revealed that there was a positive and medium-level relationship [$0.300 < r < 0.700$] between students' attitudes towards the environment and their tendency to love, empathy and reading tendencies and that these relationships were statistically significant [$p < .05$]. It was also established that there was a negative and low-level relationship between students' attitudes toward the environment and their aggression and bullying tendencies [$r < 0.300$] and that these relationships were statistically significant [$p < .05$].

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The present study aimed to identify the correlational relationships between middle school students' attitudes toward science and the environment with their values of love, respect, responsibility, empathy, reading tendency, and behaviors such as aggression and bullying. The study results were obtained through scientific statistical analysis and serve as a guide for program developers, school administrators, teachers and parents who want to increase the development of values in children.

Living in a peaceful society depends on the existence of individuals who can adapt to the rules within the society. The ability of individuals to adapt to society also depends on the presence of positive values and the absence of negative behaviors. Therefore, it is essential to identify the factors associated with the formation of desired behaviors and the avoidance of undesired behaviors.

The present study concludes that there was a significant relationship between students' attitudes toward science and all the values addressed in the study. It was established that the relationships between science attitudes-love disposition, and science attitudes-empathy disposition were at a low level; the relationships between science attitudes-respect disposition, science attitudes-responsibility disposition, and science attitudes-reading disposition were at medium level. These results indicate that as students' attitudes towards science increase, their tendencies towards love, being respectful, taking responsibility, empathic thinking and reading increase. Moreover, it was also concluded that there was a negative relationship between students' science attitude-aggression tendencies and science attitude-bullying tendency scores. The fact that the relationship is negative indicates that as students' science attitude scores increase, their bullying and aggression scores decrease. These results reveal that students with high science attitudes also have high positive value tendencies. This indicates how important science attitudes are in students' value development and the positive relationship between science and values education should be emphasized. These findings are in line with Allchin's (1999) view that science is not independent of values. Kumarassamy and Koh (2017) analyzed the views of 8th-grade science teachers on how science lessons affect students' value tendencies and actions. They concluded that the values within the scope of science improve students' prosocial behaviors, which refers to positive social behaviors. Similarly, Herdem and Çinici (2021) also concluded that science teaching activities integrated with values improved students' values.

Based on the findings of the present study regarding the relationship between students' attitudes toward science

and their positive value development, it is suggested that values education should be integrated into the science course. Thus, there is a need to include more values education in the science curriculum and science teachers, who are the practitioners of the science course, should know how to integrate values in the methods and techniques they will employ in the teaching process. Allchin (1999) stated that science teachers who understand the multifaceted relationship between science and values will guide students more effectively in understanding the nature of science.

It has been concluded that there was a significant relationship between students' attitudes toward the environment and all the values discussed in the present study. It was also revealed that the relationships between environmental attitude-respect disposition, and environmental attitude-responsibility disposition were at a low level; the relationships between environmental attitude-compassion disposition, environmental attitude-empathy disposition, and environmental attitude-reading disposition were at medium level. These results indicate that as students' attitudes towards the environment increase, their tendencies towards love, being respectful, taking responsibility, empathic thinking and reading increase. Furthermore, it was concluded that there was a negative relationship between students' environmental attitude-aggression tendency and environmental attitude-bullying tendency scores. The fact that this relationship is negative indicates that as students' environmental attitude scores increase, their bullying and aggression scores decrease. The relationship between environmental attitudes and the positive development of values is in line with Aktaş and Bozdoğan's (2016) findings that the activities associated with values within the scope of the environmental unit in the science course positively developed the values of the students.

The study suggests that the relationship between attitudes towards science and attitudes towards the environment within the scope of the science course and values shows that the science course can be enriched with content equipped with values. According to Şentürk and Arslan (2020), teachers working in the field, who are the practitioners of the science course, stated that the values of love, respect, responsibility and empathy can be developed through the science course, which indicates that the science course is appropriate in terms of values education.

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