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The Effect of Out-of-school Learning Environments Used in Life Studies Lessons on Students' Academic Achievement and Attitudes[1*]

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Abstract
The purpose of this research is to examine the effects of teaching the subjects and concepts under "life in nature" unit of the 3rd grade life science lesson, on the academic achievement and attitudes of the students. In order to achieve this aim, a quasi-experimental model with pretest posttest control group was used in the study. In the study, an experimental (28) and a control group (31) classes were selected. Guidance teacher material was developed in order to guide teachers in the implementation phase of the study. The achievement test developed by the researcher, and the life studies lesson attitude scale developed by Oker (2019) were used as data collection tools and applied as pretest and posttest. Before this study, the personal information form was used to obtain the demographic information of both the experimental and control group students. The obtained data were analyzed with SPSS 20 computer program. As a result of the research, the pretest scores of the life studies lesson achievement test and the posttest scores after the application were in favor of the experimental group; life studies lesson attitude pretest scores were similar for the experimental and control group students; after the application, it was revealed that the life studies lesson attitude posttest scores were in favor of the experimental group students. Within the scope of the results obtained, "recommendations for the design and implementation of the developed guidance teacher material in different classes, courses and subjects, and some suggestions for future research" were made.

Keywords: Out-Of-School Learning, Classroom Education, Life Studies, Life In Nature, 2023 Education Vision

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1. Introduction

İn this era we are in, it is a be constant change and development. Ministry of National Education (2018) science-technology has affected the roles expected from society. Revolutionary changes and developments took place in the 20th century (Karbeyaz, Yurtdakal & Kurt, 2021; Çakır & Ceyhan, 2022; Çakır & Erbaş, 2022). Today, important developments are taking place in many fields (Karbeyaz & Bayar, 2020). For this reason, the education of individuals and society cannot be left to chance. "Knowledge is power" means; while human beings accept the power of nature, they control nature for their own purposes and transform their energy (Dewey, 2001). As in other countries, Turkey is making serious efforts in this regard. This effort is carried out within the framework of an educational philosophy in which the student gains first-hand experience and the student is put in the center, in line with the student-centered education approach that is dominant in Turkey. According to this idea, the activities to be carried out in formal education institutions are carried out in a planned and programmed way through teaching programs. School is primarily a social institution (Dewey, 1897). The knowledge and skills to be given to the students are realized through the curricula of the courses. The importance of life knowledge in these courses cannot be denied. Life science lesson; it is a course that takes the child as a whole by making use of multiple disciplines, helps the student to adapt to life in one way, supports the child's spiritual and physical development, supports him to be a good person and a good citizen, and prepares the child for life by making use of data from social and natural sciences (Demir, 2018).

1.1. Purpose of the research

The aim of this study is; to examine the effects of teaching the subjects and concepts in the "Life in Nature" unit of the 3rd grade life science lesson in out-of-school environments on the academic achievement and attitudes of the students. The inclusion of out-of-school learning environments in the 2023 Vision of the Ministry of National Education can be considered as proof that such learning environments are given importance by the Ministry of Planetarium offers students experiences that they cannot encounter elsewhere (Schmoll, 2013). With the achievement in the curriculum in out-of-school learning environments, the student understands the subject better, learns the subject by doing and living (Kılıç, 2020), the learned information becomes more permanent (Wright, 2012), the academic success of the students increases (Kılıç, 2020), students develop a positive attitude towards students (Can, 2019; Kılıç, 2020), while students have fun, become happy and produce new ideas (Can, 2019). Planetarium visit contributed positively to students' attitudes, interests and learning (Schmoll, 2013). In the interview with the personnel working in science centers, it was revealed that two-thirds of the personnel who visited the science center felt positive emotions about science were happy and learned the subject more easily, and also used the information they learned in daily life (Eshach, 2007). In the interview with the staff working in the science centers, more than half of the interviewees stated that effective learning occurs thanks to the interactions with the objects in the museum (Eshach, 2007). Thanks to out-of-school learning environments, it contributes to students not only in terms of academic success, but also in terms of various support and orientation (Wright, 2012; Karbeyaz & Kurt, 2022). Soysal (2019) found in he study that the lessons held in out-of-school learning environments have a positive contribution to the interest, attitude and motivation of the students. The student needs to be supported in terms of transferring knowledge between two different concepts (Schmoll, 2013). Thanks to out-of-school learning environments, students' critical thinking skills are supported (Gever, Tunca, Boluwatife, Nwogbo, Onuoha, Ugwuoke & Talabi, 2021). Skills such as motivation, personal development, academic success, time management, independent thinking, teamwork and professional judgment are transferred to real life (YrAdranPlant, Addysg & DysguGydolOes a Sgiliau, 2008). The aim of many out-of-school programs is to support students in disadvantaged areas in terms of academic and personal development by providing a safe learning environment (Helms, Fukkink, Driel & Vorst, 2021). In out-of-school learning environments, people are more exposed to speaking English (Munoz & Cadierno, 2021).

The increase in the human population in the world, urbanization and the resulting destruction cause the havoc of the natural environment. The more industrialization, the more our environment is destroyed (Karbeyaz, Özdemir & Kurt, 2019; Michelle, 2021). The threat on the world's climate and natural resources is recognized by almost the whole world (Chelala & Akar, 2021; Zikargae, Woldearegay & Skjerdal, 2022). The natural environment has been severely damaged by human influence (Michelle, 2021). Conservation of natural resources is important for

a sustainable environment (Thiemann, Carvalho & Oliveira, 2018). Sustainable environment is important for future generations. “We borrowed nature from future generations” expression comes to mind. Sustainable environmental education is important for environmental problems faced globally (Michelle, 2021; Rickinson & Kenzie, 2021). Environmental approaches bring attitude and behavior change (Zikargae et al., 2022). The most important tool to be used to overcome environmental pollution can be seen as environmental education (Thiemann, Carvalho & Oliveira, 2018). Non-formal learning environments are an important tool that positively affects people's attitudes and behaviors towards the environment and sustainable environment (Zikargae et al., 2022). Formal, non-formal and informal education is used to create awareness for a sustainable environment in people (Zikargae, 2018). Out-of-school education includes a series of activities that combine environmental management with sustainable environment and physical activities (Gruno & Gibbons, 2021). So how can environmental education best be given to students? question comes to mind. The commonly used form of environmental education is to take place in out-of-school learning environments (Johnson & Cincera, 2021). By seeing living and non-living things in nature, students can learn how to protect and develop them. Out-of-school learning environments positively affect students' participation in class (Sivarajah, Smith & Thomas, 2018) and support their environmental knowledge and skills (Brownin & Penner, 2018). Thanks to out-of-school learning environments, people have an adventurous spirit outside their homes and a desire for the natural world (Gruno & Gibbons, 2021). Thanks to the excursions carried out in out-of-school learning environments, participants can relate their environmental problems to the world and respect nature by establishing a strong relationship with it (Michele, 2021; Ratinen, Sarivaara & Kuukkanen, 2021). In early childhood, students should be educated on environmental education and waste management in formal and informal settings (Ceylan, 2022). Environmental education becomes more meaningful and more permanent in out-of-school learning environments (Ceylan, 2022). It is important to provide enriched environments for educationally gifted students (Kutlu Abu, 2019). Instructional environments offer many opportunities to students. In the United States, general health goals guided out-of-school environmental education, various trips to city parks, forests, and municipal parks were organized, supported by youth organizations, churches, nature centers, and private organizations winter orienteering, deep snow adventure and ice hole fishing (Pasek, Bendíková, Kuska, Zukowska, Drozdz, Olszewski-Strzyzowski, Zajac, & Szark-Eckardt, 2022). People are in constant communication and interaction with their environment since birth (Çakır & Ceyhan, 2021). In order to raise awareness of the natural environment in Germany, sports and fun activities were carried out for nature places close to the cities (Pasek et al., 2022). With the mobile museum project initiated in a school in England, it has been revealed that students and people who visit the museum create awareness about plants by interacting with objects found in nature (Cornish, Driver, Nesbitt & Willison, 2021). Zikargea et al. (2022), it was revealed in his research that the knowledge and skills of individuals increased thanks to the activities carried out in out-of-school learning environments, and these environments helped to reduce the impact of environmental problems.

1.2 Explore importance of the problem

The aim of the curriculum is to internalize the achievements in the best way by the students. For this, the student should draw all his attention to the subject to be studied without worry (Karbeyaz, 2018). Perhaps one of the reasons why informal learning environments are considered to be leading is that it attracts students' attention (Schmoll, 2013). Planetarium learning environments support students to learn concepts related to astronomy and increase students' attitudes towards astronomy (Schmool, 2013). Thanks to out-of-school learning environments, 21st century skills can be better given to students (Sullivan, Bray & Tangney, 2021). Thanks to out-of-school learning environments, students are interested and excited about the subject, and they get involved with the equipment outside the school or home (Schmoll, 2013). Motivation has a positive effect on long-term memory (Gostev & Weis, 2007). The student has a complex structure that is affected by many variables. No matter how much attention is paid to these variables, there are always elements that are not taken into account. Application of knowledge in real life is very important (Karbeyaz, 2018).

When the content of the life studies textbook taught to the 3rd grade students in the 2021-2022 academic year in Sivas is examined; it is seen that the achievements are tried to be given to the students on the book. However, giving the achievements of the unit "Life in Nature" in out-of-school learning environments is important in terms of providing learning by doing-living for the student. There is unlimited scientific evidence in nature (Dewey,

1929). Out-of-school learning environments support classroom teaching (Richmond, Sibthorp, Gooking, Annarella & Ferri, 2017). For this, in giving the achievements of the course to the student; it is important to carry out activities that the student will have fun and interest while doing the lesson. With field trips, it is possible for students not only to learn the subject, but also to be happy (Eshach, 2007). It is important to carry out activities in which the student cares and takes responsibility. The places where these activities are carried out are out-of-school learning environments. Many field trips help students strengthen the link between their informal and formal learning (Schmoll, 2013). However, some teachers do not want to go to out-of-school learning environments due to reasons such as security and economic inadequacy (Doğan, 2022; Gürbey, Mertoğlu, Sayan & Akgül Macaroğlu, 2022; Taytaş, 2022). In addition, teachers take students on field trips aimlessly, do not know where to go, and thus the interest of the students is lost, they cannot answer the questions correctly and the purpose of the trip cannot be achieved (Eshach, 2007). It is thought that this study will guide teachers who want to take their classrooms to out-of-school learning environments.

1.2.1. The problem of research

The problem statement of this research is; What is the effect of teaching the subjects and concepts in the "Life in Nature" unit of the 3rd grade life studies lesson in out-of-school environments on the academic achievement and attitudes of the students? question will be answered.

Sub-problems:
1- Is there a statistically significant difference between the life studies lesson achievement test pretest scores of the students in the experimental group and the control group, who performed the lessons in out-of-school learning environments?
2- Is there a statistically significant difference between the life studies lesson achievement test posttest scores of the students in the experimental group and the control group, who performed the lessons in out-of-school learning environments?
3- Is there a statistically significant difference between the life studies lesson attitude pretest scores of the students in the experimental group and the control group, who performed the lessons in out-of-school learning environments?
4- Is there a statistically significant difference between the life studies lesson attitude posttest scores of the students in the experimental group and the control group, who gave the lessons in out-of-school learning environments?

2. Method

In the study, a quasi-experimental model with an unequal pretest-posttest control group was used. It may not be possible to use the real experimental model, especially in research on education. İt is difficult to appoint people randomly in line with the purpose of the research (Özmen, 2019).

2.1. The work plan

The application was carried out by using an experimental group studying in the 3rd grade in Sivas province in the 2021-2022 academic years and a control group classroom that did not receive any intervention. Various meetings were held with the teachers of the experimental group classes. In particular, meetings were held with the classroom teacher of the experimental group at every stage of the application. An achievement test was developed by the researchers in the study. Before the application, a one-week introduction was made to the experimental group about the out-of-school learning environments. Afterwards, the "Achievement Test developed by the researchers and life studies attitude scale" by Oker (2019) were applied to both groups as a pre-test. “Personal Information Form” was applied to the groups before the procedure. In order to guide the teacher about the trip, Guidance Teacher Material and worksheets for the application were developed. After the Guidance Teacher's Material and Worksheets were prepared, they were shown to two faculty members who were experts in their fields and corrections were made in line with the warnings received. The worksheets prepared for

out-of-school learning environments were given to the experimental group for each trip before, during and after the trip. Before the application, the students in the experimental group were given information about the out-of-school learning environments, what to do in these environments, and the places to visit. Since there are six achievements in the "Life in Nature" unit of the 3rd grade life studies lesson, six places to visit were determined beforehand. The out-of-school learning environments in which the application is carried out and the related acquisitions are given in Table 1. After the necessary planning was made, the tour started on March 31, 2022. One excursion area was visited each week. Since there was an Interim Holiday between 11-15 April 2022, there was no trip that week and the last trip was made on 12 May 2022. Worksheets were prepared for the students before the trip, during the trip and at the end of the trip.

Table 1: Activities Related To Out-Of-School Learning Environments

Outcomes of the 3rd Grade "Life in Nature" Unit	**Event Name**
HB.3.6.1. Understands the importance of plants and animals in terms of human life.	Stray Animal Care and Rehabilitation Center
HB.3.6.2. Researches the growing conditions of fruits and vegetables.	Sapling Foundation
HB.3.6.3. He/she finds directions by taking advantage of nature.	Brothers Urban Forest
HB.3.6.4 He/she gives examples of the influence of people on natural elements from her immediate surroundings.	Garbage Gas Electricity Production Facility and Solid Waste Storage Facility
HB.3.6.5. Takes responsibility for protecting nature and the environment.	Directorate of Nature Conservation and National Parks
HB.3.6.6. He/she gives examples of the contribution of recycling to herself and the environment she lives in.	Environmental Protection Waste Recycling Facility

2.2. Development of guidance teacher material

In this study, Counseling Teacher Material was developed in order to realize the achievements of the 2018 Life Studies Curriculum, 3rd grade Life in Nature Unit, in out-of-school learning environments.

The following steps were followed while developing the guide material:

- Determining the Subject: It has been determined that the achievements of the 3rd grade life in nature unit in the 2018 life studies curriculum are appropriate in out-of-school learning environments in line with the expert opinions.
- Identification of subject-related needs: the method-technique to be used in the realization of the 3rd grade Life In Nature unit in out-of-school learning environments was developed by scanning the literature for the material that teachers and students will need before, during and after the trip.
- Material preparation approach: while developing the guide material; students' prior knowledge was taken into account. ın addition, the guidance teacher material has been prepared to support out-of-school learning environments for the evaluation of the trip at the end of each application.
- Arrangement of content and learning activities: the application consists of three stages: activities to be done before the trip, during the trip and after the trip. Worksheets were prepared in order to improve the readiness of the students before the trip, to ensure that the trip was productive during the trip, and to reinforce the information that the students learned after the trip.
- Evaluation of measurement and evaluation tools: ın line with the relevant acquisitions, worksheets were developed before and after the application and made by students.

- Developing and ımplementing the material: the developed guidance teacher material was applied to the experimental group. No intervention was made in the control group. The control group conducted the life science lessons according to the 2018 life studies lesson curriculum.

2.3.Working grup

Two classes in Sivas in the 2021-2022 academic years were determined for the experimental and control group in this study. The demographic structure of the study group is given in Table 2.

Table 2: Demographic Information of Participants

Gender	f	%
Experimental Group		
Male	18	64.3
Female	10	35.7
Control Group		
Male	14	45.2
Female	17	54.8
Financial Status of the Family (Turkish Lira)		
Experimental Group		
5000-12000	17	60.7
12001-19000	5	17.9
19001-25000	6	21.4
Control Group		
5000-12000	29	93.5
12001-19000	2	6.5
19001-25000	0	0
Number of Trips Made by Students to out-of-school learning environments		
Experimental Group		
who never did	19	67.9
Joining a Trip	7	25
Participating of Two Trips	2	7.1
Control Group		
who never did	24	77.4
Joining a Trip	5	16.1
Participating of Two Trips	2	6.5

When Table 2 is examined; 64.3% of the experimental group were male, 35.7% were female, 45.2% of the control group were male and 54.8% were female; 60.7% of the family income of the experimental group is 5000-12000 Turkish Lira, 67.9% of the family income of the control group is between 5000-12000 Turkish Lira; predominantly 67.9% of the experimental group and 77.4 of the control group did not participate in any excursions.

2.4. Measurement tools and data collection

Data collection tools in this research; achievement test and life studies lesson attitude scale.

2.4.1. Achievement test

The Achievement Test was developed by researchers. After the achievement test was administered to a total of 485, 4th grade students in six schools. After scoring, item and test analyzes were started. The difficulty and discrimination index of each item was calculated. After the analysis, the item difficulty of the achievement test was ranging from .45 to .75; achievement test consisting of 30 items with discrimination indexes ranging from .26 to .72 and KR 20 value of .86 was obtained. These results show that the achievement test is reliable enough to be used.

2.4.2. Life studies attitude scale

In the study, the "Life Studies Lesson Attitude Scale" developed by Oker (2019) was used to determine students' attitudes towards life science. The purpose of the scale; the aim of this study is to determine primary school students' attitude level towards life studies lesson and to examine students' attitudes towards life studies lesson in terms of different variables. The sample of the study consisted of a total of 355 students studying in the 2nd and 3rd grades. The scale, which has a total of 16 items, consists of three factors: "Negative Attitudes Towards Life Science Lesson", "Positive Attitudes Towards Life Sciences Lesson Content" and "Positive Attitudes Towards Life Studies Lesson". The level of students' agreement with the scale items is Agree: 3, Partially Agree: 2, and Disagree: 1. Negative items are items 2,4,5,6,7,16 and the level of agreement with these items is Agree: 1, Partially Agree: 2 and Disagree: 3. This scale, which was developed with exploratory factor analysis, explains 46.30% of the total variance. The Cronbach Alpha value for the overall scale is .88.

2.5. Analysis of data

The obtained data were analyzed using the SPSS 20 package program. In the study, levene test was performed on the data in order to find out whether the data were normally distributed or not. Afterwards, non-parametric tests were performed on the distributions with significant differences, and parametric tests were performed on the data with normal distribution. In the research, Mann Whitney-U test, T-test for Independent Groups, %, frequency were used on the data.

3. Results

A total of 59 students in the experimental and control groups in which the research was carried out were tested on whether the data showed a normal distribution by using the levene test based on the scores they received from the life studies lesson unit achievement test in life in nature and life science attitude scale. The findings of this test are given in Table 3.

Table 3: Levene Test Normality Findings

Tests	**N**	**Sd**	**Levene Statistics**	**p**
Achievement Pretest	59	1	18.99	.000
Achievement Posttest	59	1	8.38	.005
Experimental Group Achievement Test pre-posttest	56	1	31.436	.000
Control Group Achievement Test pre-posttest	62	1	2.045	.158
Life Science Attitude Scale Pretest	59	1	.002	.964
Life Science Attitude Scale Posttest	59	1	4.544	.037

Significance value p<.05

When Table 3 is examined; It is seen that the achievement test pre-post test (p=.158) and life studies lesson attitude scale pretest (p=.964) scores of the control group show normal distribution. Since the scores are normally distributed, parametric tests can be applied on these data. Achievement pretest (p=.000), achievement posttest (p=.005), experimental group achievement test pre-posttest (p=.000) and life studies lesson attitude scale

posttest (P.037) scores do not show normal distribution, so these data are not normally distributed. non-parametric tests can be applied.

3.1. Findings regarding the 1st problem of the study

The first problem of the research, is there a statistically significant difference between the life studies lesson achievement pretest scores of the students in the experimental group and the control group, who performed the lessons in out-of-school learning environments? is in the form. Since the life studies lesson achievement pretest score did not show a normal distribution, non-parametric Mann Whitney-U test was performed on the data and the analysis results are given in Table 4.

Table 4: Mann Whitney-U Test Results of the Achievement Pretest according to Group

Groups	n	Rank Average	Rank Sum	U	p
Experiment Group	28	38.88	1088.50	185.500	.000
Control group	31	21.98	681.50		

p<.05

When Table 4 is examined; It was observed that there was a statistically significant difference between the life studies lesson achievement pretest scores in favor of the experimental group (U=185.500, p<.05). Considering the mean rank, it was observed that the pretest scores of the experimental group were higher than the control group. Since the scores for the comparison of the achievement test pre-posttest scores of the experimental group did not show a normal distribution, the Mann Whitney-U test was performed on the data and the analysis results are given in Table 5.

Table 5: U-Test Results of the Experimental Group Achievement Pre-Post-Test according to Group

Groups	n	Rank Average	Arithmetic mean	Rank Sum	U	p
Pretest	28	15.57	17.79	436.000	30.000	.000
Posttest	28	41.43	27.50	1160.00		

p<.05

When Table 5 is examined; It was understood that there was a significant change in favor of the experimental group students in terms of achievement pre-posttest scores (U=30.000, p<.05. It was seen that this difference was in favor of the achievement posttest. In order to compare the achievement test pre-posttest scores of the control group, since the scores showed normal distribution, t-test for independent groups was applied on the data and the results are given in Table 6.

Table 6. T-Test Results of the Control Group Life Science Achievement Pre-Posttest Pretest Scores according to Group

Groups	N	Arithmetic mean	S	sd	t	p
Experiment Group	31	11.87	3.201	60	5.854	.000
Control group	31	17.61	4.425			

P<.05

When Table 6 is examined; it was understood that there was a significant change in favor of the posttest score between the achievement pre-posttest scores of the control group students (t(60)=5.854, p<.05). When the achievement posttest and pretest scores of the experimental and control group students were compared; It was

observed that the achievement posttest (17.79; 27.50) scores of the experimental group students increased more than the achievement posttest scores of the control group (11.87; 17.61).

3.2. Findings regarding the 2nd problem of the study

The second problem of the research is, is there a statistically significant difference between the life studies lesson achievement test posttest scores of the students in the experimental group and the control group, who performed the lessons in out-of-school learning environments? is in the form. Since the life studies lesson achievement posttest scores did not show normal distribution, the Mann Whitney-U test, which is a non-parametric test, was performed on the data and the analysis results are given in Table 7.

Table 7. Mann Whitney-U Test Results of Achievement Test According to Group

Groups	**n**	**Arithmetic Average of Pretest Scores**	**Arithmetic Average of Posttest Scores**	**Rank Average**	**U**	**p**
Experiment Group	28	17.79	27.50	1251.50	22.500	.000
Control group	31	11.87	17.61	518.50		

p<.05

When Table 7 is examined; As a result of the experimental study, which was implemented for 6 weeks, it was understood that there was a significant change in the direction of the experimental group between the life studies lesson achievement posttest scores of the experimental group, who carried out the lesson in accordance with the guidance counselor material in out-of-school learning environments, and the control group, which did not receive any intervention (U=22.500, p<.05). Considering the mean rank, it is seen that the students who take the life studies lesson in out-of-school learning environments are more successful in the life studies lesson than the students who perform the lesson according to the 2018 life studies lesson curriculum. This finding shows that out-of-school learning environments are effective in increasing students' life studies lesson achievement test scores.

3.3. Findings related to the 3rd problem of the study

The third problem of the research; is there a statistically significant difference between the life studies lesson attitude pretest scores of the students in the experimental group and the control group, who performed the lessons in out-of-school learning environments? is in the form. Since the life studies lesson achievement pretest score showed a normal distribution, t-test for independent groups, which is a parametric test, was performed on the data and the result is given in Table 8.

Table 8. T-Test Results of Life Science Attitude Scale Pretest Scores according to Group

Groups	**N**	**Arithmetic mean**	**S**	**sd**	**t**	**p**
Experiment Group	28	40.32	6.177	57	.668	.507
Control Group	31	41.35	5.713			

p>.05

When Table 8 is examined; it was found that there was no significant difference in terms of life studies attitude pretest scores t(57)=.668, p>.05). The pretest scores of both groups are similar. In the dimension of negative attitudes towards life studies lesson, which is the first sub-dimension of the scale, the results of the independent

groups t-test performed on the data obtained from the students' life studies lesson attitude scale pretest are shown in Table 9.

Table 9: T-Test Results of Pretest Scores of Life Studies Lesson Attitude Scale-Negative Attitudes Towards Life Studies Lesson Sub-Dimension according to Group

Groups	N	Arithmetic mean	S	sd	t	p
Experiment Group	28	16.57	1.854	57	2.484	.016
Control Group	31	14.74	3.473			

p<.05

1st sub-dimension of the scale; since the items in the negative attitudes towards life studies lesson sub-dimension are reverse scored (Agree: 1, Partially Agree: 2, and Disagree: 3), a low test score indicates that the group is closer to a negative attitude. When Table 9 was examined, it was seen that there was a difference between the experimental group in terms of pretest scores, $t(57)=2.484$, $p<.05$). It was observed that the students in the experimental group had higher negative attitudes towards life studies lesson pretest scores than the pretest attitude scores of the students in the control group. The perception of negative attitudes towards life studies lesson of the experimental group is less than that of the control group. T-test analysis for independent groups performed on the data from the positive attitudes towards life studies lesson content pretest, which is the second sub-dimension of the scale, is given in Table 10.

Table 10: T-Test Results of Pretest Scores of the Life Studies Lesson Attitude Scale-Positive Attitudes towards the Content of Life Studies Lesson Sub-Dimension according to Group

Groups	N	Arithmetic mean	S	sd	t	p
Experiment Group	28	14.36	1.283	57	6.414	.000
Control Group	31	11.45	2.063			

p<.05

2nd sub-dimension of the scale; it was understood that there was a significant change in favor of the experimental group in terms of positive attitudes towards life studies lesson content pretest scores ($t(57)=6.414$, $p<.05$). In Table 10, it was seen that the attitude scores of the students in the experimental group were higher than the students in the control group. The results of the t-test for independent groups performed on the data from the positive attitudes towards life studies lesson pretest, which is the third sub-dimension of the scale, are given in Table 11.

Table 11: T-Test Results of the Pretest Scores of the Life Studies Lesson Attitude Scale-Positive Attitudes towards the Life Studies Lesson Sub-Dimension according to Group

Groups	N	Arithmetic mean	S	sd	t	p
Experiment Group	28	14	1.217	57	4.950	.000
Control Group	31	11.94	1.879			

p<.05

3rd sub-dimension of the scale; it was observed that the pretest scores of the experimental group attitudes towards life studies lesson were significantly higher than the attitude scores of the control group students ($t(57)=4.950$, $p<.05$). When Table 11 is examined, it is seen that the pretest scores of the students in the

experimental group for the positive attitudes towards the life studies lesson sub-dimension were higher than the pretest scores of the students in the control group.

3.4. Findings related to the 4th problem of the study

The fourth problem of the research; Is there a statistically significant difference between the life studies lesson attitude posttest scores of the students in the experimental group and the control group, who performed the lessons in out-of-school learning environments? expressed as. Since the posttest scores of the life studies lesson attitude scale were not normally distributed, the Mann Whitney-U test was performed on the data, and the analysis results are listed in Table 12.

Table 12: U-Test Results of Life Science Attitude Scale Posttest Results according to Group

Groups	n	Arithmetic Average of Pretest Scores	Arithmetic Average of Posttest Scores	Rank Average	U	p
Experiment Group	28	40.32	44.93	1143.00	131.000	.000
Control Group	31	41.35	38.13	627.00		

p<.05

When Table 12 is examined; as a result of the 6-week experimental study, it was observed that the change in the life studies lesson attitude scale posttest scores of the experimental group students who conducted the lesson in line with the guidance teacher material in out-of-school learning environments was significantly higher than the control group students who did not receive any intervention (U=131.000, p<.05). Considering the mean rank, it was seen that the students in the experimental group who took the life studies lesson in out-of-school learning environments had higher life studies attitude posttest scores than the students in the control group who performed the lesson according to the 2018 life studies curriculum. This finding shows that out-of-school learning environments are effective in increasing students' attitude scores about life sciences lesson. The Mann Whitney-U Test results for the answers given by the students to the life studies attitudes posttest in the dimension of negative attitudes towards life studies lesson, which is the first sub-dimension of the scale, are given in Table 13.

Table 13: U-Test Results of the Posttest Scores of the Life Studies Lesson Attitude Scale-Negative Attitudes towards the Life Studies Lesson Sub-Dimension according to Group

Groups	n	Arithmetic Average of Pretest Scores	Arithmetic Average of Posttest Scores	Rank Average	U	p
Experiment Group	28	15.53	16.57	971.00	303.000	.040
Control Group	31	15.41	14.74	799.00		

p<.05

1st sub-dimension of the scale; since the related items in the negative attitudes towards life studies lesson sub-dimension were reverse scored (I Agree: 1, Partially Agree: 2, and Disagree: 3), the low test score indicates that the group is closer to a negative attitude. Accordingly, it was understood that there was a significant change between the posttest scores of the groups in terms of the experimental group (U=303,000, p<.05). According to this, it was observed that the students who took the life studies lesson in non-school learning environments had higher negative attitudes towards the life studies lesson score than the students in the control group. The perception of negative attitudes towards life studies lesson of the experimental group is less than that of the control group. Table 14 shows the results of the Mann Whitney-U Test conducted for the answers given by the

students to the post-test in the dimension of positive attitudes towards the content of life studies lesson, which is the second sub-dimension of the scale.

Table 14: U-Test Results of the Posttest Scores of the Life Studies Lesson Attitude Scale-Positive Attitudes towards the Content of the Life Studies Lesson Sub-Dimension according to Group

Groups	n	Arithmetic Average of Pretest Scores	Arithmetic Average of Posttest Scores	Rank Average	U	p
Experiment Group	28	13	14.36	1177.00	97.000	.000
Control Group	31	12.82	11.45	593.00		

p<.05

2nd sub-dimension of the scale; positive attitudes towards life studies lesson content were found to be in favor of the experimental group in terms of posttest scores (U=97.000, p<.05). Considering the mean rank, it was observed that the students in the experimental group who took the life studies lesson in out-of-school learning environments had higher scores on the positive attitudes towards the content of the life studies lesson than the students in the control group. Table 15 shows the results of the Mann Whitney-U Test conducted for the answers given by the students in the post-test in the dimension of positive attitudes towards the life studies lesson, which is the third sub-dimension of the scale.

Table 15: U-Test Results of the Posttest Scores of the Life Studies Lesson Attitude Scale-Positive Attitudes towards the Life Studies Lesson Sub-Dimension according to Group

Groups	n	Arithmetic Average of Pretest Scores	Arithmetic Average of Posttest Scores	Rank Average	U	p
Experiment Group	28	11.78	14.00	1108.50	165.500	.000
Control Group	31	12.61	11.94	661.50		

p<.05

3rd sub-dimension of the scale; it was understood that there was a significant change in favor of the experimental group among the positive attitudes towards life sciences lesson posttest scores (U=165.500, p<.05). Considering the mean rank, it was seen that the scores of the students in the experimental group, who took the life studies lesson in out-of-school learning environments, in the positive attitudes towards the life studies lesson sub-dimension were higher than the scores of the students in the control group.

4. Discussion

The findings obtained in this section are discussed according to the literature.

4.1. First research question: discussion on the comparison of the life studie lesson achievement pretest scores of the experimental group and the students in the control group, who conducted the lessons in out-of-school learning environments.

As a result of the findings, it was seen that there was a significant change in favor of the experimental group in terms of the life science achievement pretest scores of the students in the experimental and control groups (U=185.500, p<.05). Looking at the mean rank, it was seen that the pretest score of the experimental group was higher.

In the statistical analysis made between the pre-posttest scores of the experimental group students, it was observed that there was a significant change in favor of the posttest score (U=30.000, p<.05). Considering the

mean rank, it was seen that the life studies lesson achievement posttest scores of the experimental group students increased significantly after the application. When the achievement pre-posttest scores of the control group were compared, it was observed that there was a significant change in the direction of the posttest score ($t(60)=5.854$, $p<.05$).
When the findings are examined; it was observed that the achievement pre-posttest mean scores of the students in the experimental group (17.79; 27.50) increased more than the achievement pre-posttest mean scores of the control group (11.87.17.61).

4.2. Second research question: discussion on the comparison of the life studie lesson achievement test posttest scores of the experimental group and the students in the control group, who performed in out-of-school learning environments

When the findings are examined; as a result of the experimental study, which was implemented for 6 weeks, a significant change was observed in favor of the experimental group in terms of the life studies lesson achievement posttest scores of the students in the experimental group who carried out the lesson in line with the guidance teacher's material in out-of-school learning environments and the students in the control group who did not receive any intervention. It can be said that out-of-school learning environments are effective in increasing the academic achievement of students.

When the literature is examined; it has been revealed that out-of-school learning environments have a positive contribution to the academic success of students and effectively support the teaching of knowledge and concepts related to the subject (Schmoll, 2013; Bolat, Karamustafaoğlu & Karamustafaoğlu, 2016; Stubble, Badri, Telford, Hust & Joolingen, 2016; Topaloğlu, 2016; Bakioğlu, 2017; Richmond et al., 2017; Bülbül, 2018; Coll & Coll, 2018; Engel, Coll, Membrive & Oller, 2018; Frerichs, Fenton & Wingert, 2018; Çağlar, 2019; Karslı, Karamustafaoğlu & Kurt, 2019; Bakioğlu & Karamustafaoğlu, 2020; Collins, Corkery, McKeown, McSweeney, Flannery, Kennedy & O'Riordan, 2020; Dannwolf, Matusch, Keller, Redlich & Siegmund, 2020; Kılıç, 2020; Küçük, 2020; Cunningham & Gomez, 2021; Kır, Kalfaoğlu & Aksu, 2021; Sarıgül, 2021; Staus, O'Connell & Storksdieck, 2021; Karakılçık & Uçar, 2022). Thanks to out-of-school learning environments, students learn by doing and experience positive experiences (Yüzbaşıoğlu, Yüzbaşıoğlu & Kurnaz, 2021; Özyıldırım & Durmaz, 2022; Taytaş, 2022; Uğurlu, 2022). In this way, students learn by doing-living and touching objects (Yazıcı, Ertürk & Kulaca, 2022) and in the face of a situation that he does not understand, he/she immediately gets answers to his questions. Thanks to out-of-school learning environments, the information learned becomes more permanent (Kır et al., 2021; Özyıldırım & Durmaz, 2022). There is an interdisciplinary teaching through out-of-school excursions (Özyıldırım & Durmaz, 2022). These environments can be a learning resource not only for students but also for teachers (Telli, 2022). In addition, out-of-school learning environments contribute to the development of students' self-care and motor skills (Dere, 2022). It is important for teaching that teachers give lessons in a comfortable way (Karbeyaz & Kurt, 2021).

In a study conducted by Erten (2016), it was revealed that students improved their scientific process skills thanks to out-of-school learning environments. In addition, these environments are interesting for students, increase their motivation and arouse curiosity (Vollmae, Randler & Greulich, 2018; Coll & Coll, 2018; Dannwolf et al., 2020; Demir & Çetin, 2022; Uğurlu, 2022). Students have fun and are happy in out-of-school learning environments. Positive attitudes and behaviors towards the course also affect the success of the course positively. Ertaş (2012) and Topaloğlu (2016) found in their research separately that out-of-school learning environments increase students' positive attitudes towards their lessons.

Out-of-school learning environments offer many opportunities to students (Simeonova, Zlatanova, Racheva, Angelovb & Asenova, 2009). Thanks to out-of-school learning environments, students learn subjects and concepts better (Schmoll, 2013; Güngör & Demir, 2022; Küçük & Yıldırım, 2022). The subject is better understood during trips to out-of-school learning environments (Simeonova et al., 2009; Lai, Zhu & Gong, 2015; Karbeyaz & Kurt, 2020). In a study conducted by Cunningham & Gomez (2021), it was revealed that black

students support mathematics teaching when out-of-school learning environments are used in addition to mathematics teaching in the classroom.

Museum programs contribute to the cognitive development of children and increase their interest in the subject (Mierdel & Bogner, 2021; Panskyı & Rovinska, 2021; Ratinen, Sarivaara & Kuukkanen, 2021; Stamer, David, Höffler, Schwarzer & Parchmann, 2021). Subjects are learned better thanks to out-of-school learning environments (Stamer, David, Höffler, Schwarzer & Parchmann, 2021; Zimerman, Weible, Wright, Vanderhof & Jablonski, 2022). Out-of-school learning environments support individuals' language skills (Syahrin, 2021). Students feel comfortable and free in out-of-school learning environments (Röllke & Grobmann, 2022). Out-of-school learning environments offer many educational opportunities to the audience (Newman, 2022). Out-of-school learning environments embody abstract learning (Demir & Çetin, 2022; Doğan, 2022).

4.3. Third research question: discussion on the comparison of the life studie lesson attitude pretest scores of the experimental group and the students in the control group, who gave the lessons in out-of-school learning environments

When the findings were examined, it was understood that there was no significant change between the groups in terms of life studies lesson attitude pretest scores $t(57)=.668$, $p>.05$. Life studies lesson attitude pretest scores are similar for both groups.

1st sub-dimension of the scale; it was observed that there was a significant change in favor of the experimental group in terms of pretest scores in the dimension of negative attitudes towards life studies lesson, which is the first sub-dimension of the scale $t(57)=2.484$, $p<.05$). It was observed that the pretest scores of the students in the experimental group negative attitudes towards the life studies lesson were higher than the pretest attitude scores of the students in the control group. According to this finding, it was revealed that the students in the control group had more negative attitudes towards the life studies lesson. Since the sub-dimension of the scale is reverse scored, higher scores indicate less negative attitudes.

2nd sub-dimension of the scale; it was observed that there was a significant change in favor of the experimental group in terms of the pretest scores of positive attitudes towards the content of life sciences lesson, which is the second sub-dimension of the scale ($t(57)=6.414$, $p<.05$). In the dimension of positive attitudes towards the content of life studies lesson, it was observed that the pretest scores of the students in the experimental group were higher than the pretest scores of the students in the control group.

3rd sub-dimension of the scale; it was observed that the pretest scores of positive attitudes towards life studies lesson, which is the third sub-dimension of the scale, changed in favor of the experimental group students ($t(57)=4.950$, $p<.05$). In the dimension of positive attitudes towards life studies lesson, it was observed that the pretest scores of the students in the experimental group were higher than the scores of the students in the control group.

4.4. Fourth research question: discussion on the comparison of the life studie lesson attitude posttest scores of the experimental group and the students in the control group, who gave the lesson in out-of-school learning environments

As a result of the experimental study, which was implemented for 6 weeks, it was understood that there was a significant change in favor of the experimental group in terms of the life studies lesson attitude scale posttest scores of the students in the experimental group who taught the lesson in line with the guidance teacher material in out-of-school learning environments and the students in the control group who did not receive any intervention. It was observed that the students who took the life studies lesson in out-of-school learning environments had higher life studies lesson attitude posttest scores than the students who took the course according to the 2018 life studies curriculum. This finding shows that out-of-school learning environments are effective in increasing students' attitude scores towards life studies lesson. Out-of-school learning environments

are environments where students love, have fun and be happy (Simeonova et al., 2009). Out-of-school learning environments positively affect students' attitudes towards the course (Topaloğlu, 2016; Çebi, 2018; Çağlar, 2019; Sosyal, 2019; Kılıç, 2020). It realizes learning by doing-living in out-of-school learning environments (Taflı & Atıcı, 2022; Torun & Yıldırım, 2022). In out-of-school learning environments, students feel more comfortable without class anxiety (Torun & Yıldırım, 2022).

1st sub-dimension of the scale; in the dimension of negative attitudes towards life studies lesson, which is the first sub-dimension of the scale, it was understood that there was a significant change in the life studies lesson attitudes posttest scores in the direction of the experimental group. According to these findings, it was observed that the students who took the life studies lesson in out-of-school learning environments scored higher than the control group. Accordingly, out-of-school learning environments positively affect their attitudes towards life studies lesson.

In the second sub-dimension of the scale, positive attitudes towards the content of life studies lesson, there was a significant change between the posttest scores in favor of the experimental group. According to this finding, it was observed that the scores of the positive attitudes towards the content of life studies lesson of the students who took the life studies lesson in out-of-school learning environments were higher than the attitude scores of the students in the control group. From this point, out-of-school learning environments have been effective in increasing the posttest scores in the positive attitudes towards the content of the life studies lesson sub-dimension.

3rd sub-dimension of the scale; it was understood that there was a significant change between the posttest scores of the groups in the dimension of positive attitudes towards the life studies lesson, which is the third sub-dimension of the scale, in favor of the experimental group. According to these findings, it was observed that the students who took the life studies lesson in out-of-school learning environments had higher positive attitude scores towards the life studies lesson than the students in the control group. from this point of view, the positive attitudes towards life studies lesson sub-dimension of out-of-school learning environments has been effective in increasing the posttest scores.

4.5. Suggestions

1. It has been concluded that the guidance teacher material developed within the framework of the research is effective in increasing the academic success of the students. For this reason, it is recommended that classroom teachers use the guidance teacher material in out-of-school learning environments.
2. Out-of-school learning environments can be included more in curricula.
3. Due to bureaucratic legislation, teachers do not want to take their students to out-of-school learning environments. In addition, school administration and teachers are held responsible and prosecuted for any harm that may occur to students in out-of-school learning environments. For this reason, bureaucratic obstacles can be further reduced.
4. The school administration and teachers do not want to go to out-of-school learning environments because of travel-related expenses such as vehicles, accommodation and food and beverage. For this reason, it can be suggested to develop various projects and provide resources.
5. University etc. It may be suggested to provide support from these institutions and organizations during the trips carried out within the body of institutions and organizations.
6. It can be suggested that out-of-school learning environments be included in the more application dimension of universities.
7. It can be suggested to consider the age and developmental characteristics of the students when determining the places to go on the trip.
8. It may be suggested that a parent or another teacher who will assist the teacher during the trip participate in the trip.
9. Activities can be suggested for students to share their experiences with their families.

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