

The Effect of a Project on Teachers' Self-Efficacy Beliefs in Organizing Trips to Out-of-School Environments

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Abstract: *The aim of this study is to determine the effect of a project on teachers' self-efficacy beliefs about organizing trips to out-of-school environments. The present study is a simultaneous mixed pattern research using quantitative and qualitative data. Twenty-four science teachers participated in the study. The effect of training and applications was also evaluated in terms of gender and seniority. Data were collected through Self-Efficacy Belief Scale for Organizing Educational Trips to Out-of-school Environment and open-ended question forms. While there was no difference in self-efficacy beliefs between male and female teachers at the beginning of the project, there was a difference in favor of females at the end of the project. Also, while there was a difference in favor of senior teachers at the beginning of the project, this difference disappeared at the end of the project. As can be seen in the present study, practical activities related to out-of-school learning are very important and such training should be delivered to both in pre-service and in-service teachers.*

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Ethics: This research is the product of a project. The project was reviewed and approved by a board before it was accepted. Announcements have been made for the approved project. In the application form, it is stated that data will be collected for a research in the project, the data will be used in scientific publications and photographic and video recordings will be taken. The participants were selected from among the volunteers who accepted these conditions.

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Introduction

OUT-OF-SCHOOL learning environments are informal environments, such as museums, zoos, botanical gardens, aquariums, and science centers. Planning the field trips to these environments by associating them with the lessons and providing the teaching of the subjects through these environments is defined as out-of-school learning.

It has been argued for many years that school trips should be associated with school lessons (Falk & Dierking, 1997) but field trips to out-of-school environments require a lot of preparation. These preparations can be grouped under three main headings: official procedures, organization of the trip and instructional preparations (Baker, 2002; Behrendt & Franklin, 2014; DeWitt & Osborne, 2007; Jarvis & Pell, 2005; Laçın Şimşek, 2020; Rix & McSorley, 1999). Official procedures include the permits that must be obtained from the institutions and parents related to the trip. These operations must be carried out in accordance with the procedures. In addition, each student's parents must be informed about the trip and their approval for the participation of the student must be obtained (Saul, 1993). The preparations that need to be made in many matters such as choosing the travel location, arranging transportation, providing food during the trip, making accommodation arrangements if the trip takes longer than a day, making reservations, arranging the duration and date of the trip are part of the organization.

In addition to all these, teachers are asked to plan a field trip in a way that links the environment they are going to visit with the lessons. Field trips are trips associated with course subjects. It will be the educational preparations that make out-of-school learning a learning activity. Therefore, teachers are expected to associate the course subjects with the environment visited. For the trips to be efficient, many preparations should be made before, during and after the trip (Coll & Coll, 2018; Laçın Şimşek, 2019, 2020). Before the trip, it is necessary to explain the purpose of the trip to the students, to inform the students about the destination, to prepare the worksheets that are going to be used during the trip and the evaluation tools that are going to be used after the trip. During the trip, teachers should guide students' discoveries and observations, ask questions to make them think, and continue the trip in a way that is relevant to the subject of the lesson, as well as maintain discipline and control the children. After the trip, evaluation forms can be applied to understand whether the expected learning outcomes have been achieved by students. However, in many studies, it is seen that only official procedures and trip planning are emphasized, and any or very little educational activities are done (Tal & Morag, 2009).

All these preparations must be carried out by teachers. All of these create a serious burden on teachers (Griffin, 2004). Researches show that the preparations that need to be done cause teachers to abstain from organizing trips (Rebar & Enochs, 2010; Scribner-MacLean & Kennedy, 2007; Şentürk, 2015). Teachers' concerns about keeping students under control during the trip, bringing them back safely and completing the trip without any problems are frequently expressed. In addition, it is frequently stated that they do not know how to turn these trips into a learning opportunity, and the methods and techniques that can be used (Griffin & Symington, 1997; Tal & Morag, 2009). These types of anxieties are also directly related to experience. It is usual for a teacher who is organizing a trip for the first time to have much more concerns. As the experience of organizing trips increases, the problems of teachers will decrease relatively, and they will feel more competent.

Competence is having the necessary knowledge, skills, and equipment in a subject. For a job to be done well, the necessary competencies must also be well. Personal perceptions and beliefs about being able to do a job are self-efficacy. The judgment about the capacity of individuals to organize the necessary activities and perform them to exhibit a performance (Bandura, 1986) is formed by the individual himself. While competence is having a skill or knowledge, self-efficacy is a person's perception and belief in this. Self-efficacy belief is an important factor for an individual to cope with different situations and achieve a certain activity (Senemođlu, 2013). It can be said that the higher the self-efficacy beliefs, the higher the self-confidence and motivation of the person to accomplish that job. One's interpretation of one's own performance creates a sense of self-efficacy (Dinther et al., 2011).

It is also possible to define self-efficacy as the self-confidence that an individual needs in performing a certain task that requires effort and persistence. No matter how much potential and advantage an individual has, if s/he does not feel competent in a certain subject, s/he may have difficulty in starting and continuing an action (Erol & Avcı-Temiz, 2016). At this point, it is necessary for teachers to have good self-efficacy beliefs about organizing trips to out-of-school environments that require a lot of preparation and practice. Teachers who are anxious about these trips, those who hesitate and think they are incompetent about organizing and arranging the necessary activities, will abstain from organizing these field trips.

In studies conducted with teachers on organizing field trips to out-of-school learning environments, it was found that teachers felt incompetent about organizing, controlling, and associating the trips with lessons (Griffin & Symington, 1997; Yurdakal ve Karadaş, 2021; Kisiel, 2003; Orion, 1993; Rickinson et al., 2004; Storksdieck, 2001; Tal & Morag, 2009; Tuckey, 1992; Uludađ, 2021). In many studies, teachers, and researchers (DeWitt & Osborne, 2007; Tal, 2004) have stated that they need in-service training in order to develop their knowledge and competencies in these subjects. It has been stated that studies conducted to increase knowledge about out-of-school learning have achieved positive results on these issues. In the study conducted by Bozdođan (2012), after the theoretical information about the out-of-school environments was given to the pre-service teachers, they were taken to six different environments and the applications were made and then the participants' opinions were asked. At the end of the study, it was found that pre-service teachers felt more competent about organizing trips. Anderson, Lawson, and Mayer-Smith (2006) found the positive effects of field trips in their studies with pre-service teachers. Positive results were also obtained in Moseley, Reinke, and Bookout's (2002) studies on the pre-service teachers' self-efficacy regarding field trips. In the study conducted by Tal and Morag (2009), it was stated that pre-service and in-service teachers had low self-confidence at the beginning but positive developments were observed during field trips with learning experiences. It is seen that the studies in the literature mostly focus on pre-service teachers. It is stated that there is limited literature on preparing teachers for field trips (Tal & Morag, 2009), there are criticisms about how the activities to be done in these environments should be, what can be done for educational purposes before, during and after the trip (Carrier, 2009; Chin, 2004; Morentin & Guisasola, 2015).

When the studies on what needs to be done for out-of-school learning are examined, it is seen that they mostly focus on procedural preparations and little mention of educational goals and preparations. For example, in the study conducted by Tal, Bamberger, and Morag (2005), with 30 teachers in four natural history museums in Israel, they found out that only one-third of these teachers provided specific purposes for

conducting the museum visit, explaining how the visit was connected to the school curriculum. Most of the teachers gave general answers about the purpose of the visit, while in many cases teachers stated that others had planned the visit and they were unaware of the purpose. However, it is the educational activities that will make out-of-school learning a learning activity. A critical need for teachers in this context is to acquire new understandings and skills in using blended learning environment for out-of-school visits to support teaching in the light of a student-centered approach (Coll & Coll, 2018). At this point, teachers should focus on what should be done educationally during visits for out-of-school learning, and these should be included more in in-service and pre-service trainings.

In the present study, teachers were trained on organizing trips to out-of-school environments. They participated actively during the trainings, prepared, implemented, and evaluated the activities themselves. In the studies conducted, it is seen that most of the time, teachers are taken to out-of-school areas and carrying out activities is the basis. In the present study, teachers took an active role in all activities (observation forms, worksheets, educational game et.) prepared. It was aimed to determine the effect of this process on teachers' self-efficacy beliefs about trips and whether it made a difference in terms of gender and seniority (professional experience). Bandura (1997) stated that experience is very important in self-efficacy beliefs. Therefore, it was necessary to make a comparison in terms of seniority. In addition, there are many situations that need attention (such as arranging the tools, disciplining, controlling the children etc.) during a trip (Dillon, et al., 2006). Such requirements may reveal gender differences in self-efficacy beliefs. For this reason, it was felt the need to make an evaluation according to the gender variable.

Purpose of the Research

This research was carried out to determine the effects of the activities carried out in the project on teachers' self-efficacy beliefs in organizing out-of-school environments. For this, answers to the following questions were sought:

Sub-Problems

1. What is the effect of the studies conducted in the project on teachers' self-efficacy beliefs about organizing trips to out-of-school environments?
2. Does the effect of the studies conducted in the project on teachers' self-efficacy beliefs vary by gender?
3. Does the effect of the studies conducted in the project on teachers' self-efficacy beliefs vary according to seniority?

Method

Research Model

In the present study, both quantitative and qualitative research techniques were used together to determine teachers' self-efficacy beliefs. In the study, which was planned as a concurrent/parallel mixed design, it was aimed to elaborate and support the findings

Table 1. Demographic Characteristics of the Study Group.

Study Group	Variable	N
Gender	Female	15
	Male	9
Seniority	1-5 years	6
	6-10 years	13
	11 years and above	5
Age	21-25	1
	26-30	10
	31-35	11
	36-40	2

obtained with more than one data source. Thus, by using qualitative and quantitative methods together, it was ensured that the weaknesses of one method were complemented with the strengths of the other. This pattern contributes to the comparison and interpretation of qualitative and quantitative data, and to strengthen the validity reliability (Creswell & Plano Clark, 2011).

Study Group

The study group of the present research consists of 24 science teachers. The participants were selected from among 360 teachers who applied for the project announcement. The demographic characteristics of the participants are presented in **Table 1**.

Studies Carried Out within the Scope of the Project

The training of the project in this research lasted for 1 week. The following trainings were provided given step by step during the project.

1. First of all, it was explained what is out of school learning. It was especially emphasized that for a school trip to be an out-of-school learning visit, there should be educational activities associated with the lessons. During these trainings, information about what learning is in out-of-school environments, how qualified field trips should be, how these trips can be associated with lessons, and what to do before, during and after the trip was provided.
2. The preparations that needed to be made for the out-of-school learning visit and what to do during and after the trip were explained.
3. Observation forms and worksheets (these are defined as teaching materials) that can be used during the visits are explained and examples were presented. Accordingly, it was stated that the teaching materials that are going to be used in the out-of-school learning environment should enable students to make observations, interact with exhibitions, use the concepts they know, and make new discoveries.
4. Educational games are explained and the features of educational games that can be used in out-of-school learning environments were presented.

5. Examples of observation forms, worksheets and educational games prepared for different out-of-school learning environments were examined by the participating teachers.
6. Afterwards, science centers, one of the out-of-school learning environments that science teachers can benefit the most from, were introduced to the teachers and the science center where the project was carried out was visited.
7. During this visit, teachers were asked to take notes for the teaching materials they would prepare.
8. Since the project took place at the science center, this place was used as an out-of-school learning environment. The teachers were provided with the necessary information regarding for all out-of-school learning environments. However, studies have been carried out on the science centers to improve the skills of preparing teaching materials. The important thing here is that the teaching materials that are going to be used during the visit include questions that guide students to make observations, enable them to explore and think, and help them relate to the course topics. It is important for teachers to develop their knowledge and skills related to this.
9. The teachers prepared teaching materials for 3 days using the exhibits in the science center. For this, they worked in groups of 4 people. During this process, the project experts guided the groups.
10. After 3 days, the teachers gave the teaching materials they had prepared to the other groups for review. Each group tried and examined the materials prepared by the other groups in the science center and gave feedback and evaluations.
11. After the groups presented their feedback, each group reviewed and arranged the teaching materials they had prepared.

Data Collection Tools

In the study, quantitative and qualitative data collection tools were used together. As a quantitative data collection tool, the Self-Efficacy Belief Scale for Organizing Educational Trips to Out-of-school Environment, and as a qualitative data collection tool, open-ended question forms were used.

Self-Efficacy Belief Scale for Organizing Educational Trips to Out-of-School Environments

The scale consists of 30 items developed by Bozdoğan (2016). The scale includes items aimed at revealing self-efficacy beliefs in organizing educational trips to out-of-school environments. The Cronbach Alpha reliability coefficient was 0.93. In the present study, the relevant scale was applied twice as pre-test at the beginning of the project and post-test at the end of the project. The scale is a 5-point Likert type scale. It is scored as I totally agree (5), to I do not agree at all (1). The scale includes 17 positive and 13 negative items. The scores of the negative items were reversed. The Cronbach Alpha reliability coefficient value of the scale in this study was found to be 0.885. Some of the items on the scale are as follows:

1. I find it difficult to guide students at the trip destination.
3. I can enable students to gain practical skills by playing an active role during the field trip.

18. I am confident in guiding students with various questions and enabling them to access information during the field of trip.

Open-Ended Question Form

In the research, two separate forms consisting of open-ended questions were used before and after the project. Forms were filled in individually. In the open-ended question form used in the pre-application, the participants were asked about their ability to organize trips, if they felt competent to organize trips and about the places where they organized trips.

In the open-ended question form used in the last application, they were asked “how they felt about their competence to organize trips to out-of-school environments” and “the contribution of the studies conducted in the project”. In the present study, the data collected through open-ended questions were used to support quantitative findings about gender and seniority.

Data Analysis

SPSS 20 package program was used in the analysis of quantitative data. First, whether the group showed normal distribution was tested. Fisher Skewness Coefficient of the test was found to be 1.36. Since the Fisher Skewness Coefficient takes a value between “-1.96 and 1.96”, the data is normally distributed and subjected to parametric tests.

Qualitative data were evaluated with content analysis. The answers to the open-ended questions were first examined and coded separately by the researchers. Subsequently, the researchers determined suitable examples by focusing on the data that would support the quantitative findings in the open-ended question form.

Validity and Reliability Studies

The data were first examined separately by the researchers, detailed notes were taken, categories were created, and then a consensus was reached by discussing them. In revealing the findings, the obtained models and categories were highlighted by making direct quotations from the teachers’ expressions. No corrections or changes have been made in the quotations. While presenting the expressions, the names of the participants are kept confidential and the nicknames (F = Female, M = Male, Seniority; 1 or 1-5 year, 2 for 6-10 year, 3 for 11- above) given to them are used.

Findings

The Effect of the Studies Conducted in the Project on Teachers’ Self-Efficacy Beliefs

20 of the 24 teachers involved in the project organized a trip to an out-of-school environment at least once, and 4 teachers did not. It has been determined that the teachers who organized trips have visited various museums (history museums, science centers,

Table 2. t Test Results on Self-Efficacy Belief Scores.

	N	Mean	ss	t	Sd	p
Pre-test	24	122.62	12.48238	-5.894	23	0.000
Post-test	24	139.17	9.92873			

Table 3. Independent Groups (Gender) t Test Results Related to Self-Efficacy Belief Pre-Test Scores.

Groups	N	Mean	ss	t	Sd	p
Female	15	122.0667	13.3709	-0,277	22	0,784
Male	9	123.5556	11.5554			

Table 4. Independent Groups (Gender) t Test Results Related to Self-Efficacy Belief Post-Test Scores.

Groups	N	Mean	ss	t	Sd	p
Female	15	142.4000	7.5479	2.231	22	0.036
Male	9	133.7778	11.4649			

aquariums, zoos etc.) and they organized city breaks, nature trips and institutional visits. In order to determine teachers' self-efficacy beliefs in organizing trips, the scale "was applied and it was determined whether any change occurred". The findings obtained are reflected in **Table 2**.

The teachers got an average score of mean = 122.62 in the pre-application, and an average score of mean = 139.17 in the post application. There is an increase in the scores and this increase is statistically significant ($t_{(23)} = -5.894$, $p < 0.05$). Considering that the highest score that can be obtained is 150, it is seen that the self-efficacy beliefs of the group are also at a high level in the pre-application. It is important that this value increases significantly after the project.

This finding is supported by the findings obtained from the open-ended question form. In the open-ended question form asking about their competencies to organize trips to out-of-school environments, it was observed that at the beginning of the project 13 of the teachers stated that they felt competent in this regard, and 3 teachers felt partially competent. While 6 teachers stated that they felt inapt regarding this issue, 2 teachers who had no experience in organizing trips did not comment on this issue. As can be seen, most of the participants find themselves competent to organize out-of-school trips before the project. At the end of the project, it is supported by both quantitative and qualitative data that teachers' self-confidence in their competencies increased.

In the qualitative data, after the project, the teachers stated that they felt better equipped, more conscious, and willing than before in terms of their belief in organizing educational trips to out-of-school environments. At the end of the project, they stated that they felt more competent and gained experience in planning, they realized how to associate the trip with the lesson and how to designing an activity. Sample expressions that will clarify these situations are given in the section of seniority and gender.

Investigation of the Effects of the Studies Conducted in the Project on Teachers' Self-Efficacy Beliefs by Gender

In the applications carried out before and after the project, it was examined whether the teachers' self-efficacy beliefs in organizing educational trips to out-of-school environments differ according to gender, and the data obtained are presented in **Tables 3** and **4** and supported with qualitative data.

As seen in **Table 3**, the self-efficacy belief pre-test scores do not show a significant difference according to the gender factor [$t_{(22)} = -0.277$, $p > 0.05$]. It is seen that the average scores of the female and male participants are very close to each other.

As seen in **Table 4**, it is found that the mean scores of female participants (mean = 142.4000) are higher than the mean scores of male participants [mean = 133.7778, $p < 0.05$]. It has been determined that there is a significant difference in the post-test scores of female participants for making trips out of school compared to male participants.

Examples of the statements of the female participants regarding their competencies at the end of the project are given below:

A female teacher 9F1, who had organized a trip before, said, "*I never imagined that I could structure this trip. This situation changed my perspective enormously. I realized that while focusing more on the control of the students during the trips, I could actually control their learning very well.*" emphasizing her awareness on this issue.

The teacher 21F2, said, "*If I had planned such a trip before participating in this training, I think it would have been completely superficial... I can't wait to take my students to the science center*" and stated that she has become eager in this regard.

The teacher named 23F3, who had many trip experiences before, said at the end of the project: "*I feel quite competent. I will even convey this information to my fellow teachers, I want them to design a trip like this and learn while observing my students' trip.*"

In the statements of the female participants, it is seen that they feel themselves more competent after taking part in the project. Qualitative findings support the significant increase in favor of female participants in self-efficacy belief posttest scores for out-of-school trips.

Investigation of the Effects of the Studies Conducted in the Project on Teachers' Self-Efficacy Beliefs by Seniority

Table 5. One-Way Variance Analysis (ANOVA) Results of Self-Efficacy Belief Pre-Test Scores According to the Seniority Variable.

Group	N	Mean	ss	KT	Sd	KO	F	p
1-5 yrs	5	115.00	11.96	Inter-Group	1250.292	2	625.146	
6-10 yrs	13	120.00	6.48	In-Group	2333.333	21	111.111	5.626
≥11 yrs	6	134.67	15.86	Total	3583.625	23		0.011
Total	24	122.62	12.48					

Table 6. Bonferroni Test Results Showing Which Subgroups Differentiate Self-Efficacy Belief Pre-Test Scores According to the Seniority Variable.

		Averages Variation	Standard Error	p
1-5 yrs	6-10 years	-5.00000	5.54700	1,000
	11 years and above	-19.66667 [*]	6.38285	0.017
6-10 yrs	1-5 year	5.00000	5.54700	1.000
	11 years and above	-14.66667 [*]	5.20245	0.031
≥ 11 yrs	1-5 years	19.66667 [†]	6.38285	0.017
	6-10 years and above	14.66667 [†]	5.20245	0.031

Table 7. The Corrected Post-Test Average Scores of Seniority Groups.

Group	N	Mean	Corrected Mean
1-5 yrs	5	144.40	146.61
6-10 yrs	13	136.08	136.84
≥ 11 yrs	6	141.50	138.01

Table 8. ANCOVA Analysis Results of Self-Efficacy Belief Post-Test Corrected Scores.

	KT	Sd	KO	F	p
Pre-Test	196.427	1	196.427	2.211	0.153
Seniority	332.545	2	166.272	1.871	0.180
Error	1777.196	20	88.860		
Total	467084.000	24			

Whether the change in teachers' self-efficacy beliefs differs in terms of seniority has been tested and the findings obtained are presented in tables.

As seen in **Table 5**, the difference between the arithmetic averages of the seniority groups was found to be statistically significant because of the one-way variance analysis (ANOVA) conducted to determine whether the pre-test arithmetic mean of the scale of self-efficacy beliefs showed a significant difference compared to the seniority variable [$F = 5,626$; $p < 0.05$]. Thereupon, complementary post-hoc analysis techniques were used to determine which groups caused the significant difference after ANOVA. The hypothesis of whether the variances of group distributions are homogeneous or not was tested with Levene's test and it was determined that the variances were homogeneous (Levene = 1.931; $p = 0.170$). Bonferroni multiple comparison technique made on this was preferred and the analysis results are presented in **Table 6**.

According to the results of the post-hoc test, the average scores of the self-efficacy belief scale of teachers with seniority of 11 years or more were found to be comparable to the results of teachers with seniority of 1-5 years ($p = 0.017$) and teachers with seniority of 6-10 years ($p = 0.031$), in favor of teachers of 11 years or more. As seen in **Table 7**, no statistically significant difference ($p > 0.05$) was found between the average scores of teachers with 1-5 years of seniority and those with 6-10 years of seniority.

Since the pre-test results differed by seniority, the analyses were continued with ANCOVA. Post-test average scores of seniority groups, which were corrected according to their pre-test scores, are given in **Table 7**.

When **Table 7** is examined, according to the corrected posttest scores, the post-test average score of the teachers with 1-5 years of seniority is 144.40, while the corrected average score is 146.61. The final test average score of teachers with 6-10 years of seniority is 136.08, while the corrected average score is 136.84. The post-test average scores of teachers who are 11 years and over were 141.50, while their corrected average score was found 138.01. As can be seen, the final test corrected scores of the groups are different from each other. ANCOVA was applied to test whether this difference was significant or not, and the results obtained are presented in **Table 8**.

In **Table 8**, it was seen that there was no statistically significant difference between the post-test average scores of the teachers, which were corrected according to the pre-test average scores [$F_{(1,20)} = 1.871$, $p = 0.180$]. In this case, it can be said that the difference between the pre-test score average, which is in favor of teachers with a seniority of 11 years or more, get closed after the application, and the teachers' self-efficacy beliefs with less than 10 years of professional experience have improved thanks to the project.

When the qualitative data were analyzed, it was found that the teachers with 11 years of seniority felt themselves competent at the beginning of the project because they had more experience in the profession than the participants with less seniority. For example, the teacher named 17F3, who has 11-15 years of experience, stated that she organized trips to different places and made plans by "*Organizing trips to the places relevant to the topics and gains we dealt with*" and felt competent in this regard. However, at the end of the project, the same teacher said, "*The detailed trips we made, the worksheets we created, the observation forms, and the exhibitions allowed me to have an idea about how I should use them. I think that thanks to the activities I have done here, I can make not only the trips to the science center, but all the trips I will make, in my field, more productive.*" and added "*It has become easier for me to associate any trip I will make with a lesson, a gain. Thanks to this project, I learned what kind of path I should*

follow". Even if the teacher has experience in organizing trips, it is comprehended from her expression that she did not have enough knowledge about how the trips should be structured. Similarly, the teacher named 18M3, who stated that he organized many trips and felt competent, said, "*The meeting held on the first day, about preparing a study [sheet] and observation form, made me realize my shortcomings,*" and stated that the project work contributed a lot to his personal and professional development.

While some of the teachers with less seniority stated that their self-efficacy was lacking at the beginning of the project, others stated that they view themselves as competent. For example, 3M2, one of the teachers with a seniority of 6-10 years, stated that he did not feel fully competent, and at the end of the project said, "*I will take students to visit the science center and reinforce the subject and provide easier and fun learning*", stated that he gained self-confidence, felt "*more developed*" and added "*We learned how to implement planning*". Similarly, 8F2 stated that he had not organized a trip before, and he felt inadequate about it. At the end of the project, "*I had no idea about this. It made me conscious and confident about this.*" she said, and "I feel more conscious and qualified about associating." she added.

On the other hand, 19M2 stated that there were too many places in the city where he was located, he organized too many trips and said that he saw himself as competent. However, at the end of the project, he said, "*I realized that we need to improve ourselves a lot and constantly renew and develop ourselves.*"

10K1, one of the teachers with 1-5 years of seniority, stated that he is new in the profession and that he has little travel experience; he said "*I think I have a lot to learn about it.*" At the end of the project, he said, "*It helped me to learn about the subjects that I found insufficient*" and "*I gained new information on how to associate the science center visits with the lessons and make these visits more meaningful*".

Although she has organized trips to many different places, 16F1 said before the project, "*I don't think I am enough. I couldn't guide the students very well during the trip I organized.*" she stated at the end of the project, "*I think I am better at this issue now. The activities and feedbacks made helped a lot*"

As can be seen in the statements of the teachers, it was determined that the teachers, whether they are senior or have less seniority, see themselves much more competent in organizing field trips at the end of the project. It can be said that this difference, which also occurs in quantitative results according to seniority, has been disappeared because of the acquired knowledge and experience.

Discussion

In the present study, in which the effect of the project carried out in the science center on out-of-school learning was investigated, it was observed that the activities carried out during the project had positive effects on teachers' self-efficacy beliefs of organizing trips to out-of-school environments. At the beginning of the project, it was determined that teachers' self-efficacy beliefs were high, and this was supported by qualitative findings. Although self-efficacy beliefs were high even at the beginning of the project, it was observed that the studies carried out during the project further increased the teachers' self-efficacy beliefs at the end of the project. This result can be evaluated as the effect of teachers actively designing activities and making applications.

It is very important for teachers to develop self-efficacy beliefs about being able to organize trips to out-of-school environments, because teachers who do not have confidence in this issue will be reluctant to organize trips. Whereas trips to out-of-

school environments have positive effects on students cognitively, affectively and psychomotorly (Bakiođlu, Karamustafaođlu, Karamustafaođlu & Yapıcı, 2018; Bozdođan and Kavcı, 2016; Bozdođan & Yalçın 2006; Ertaş, Şen & Parmaksızođlu, 2011; Jarvis & Pell, 2005; Michie, 1998; Saidi & Sigauke, 2017), and it have been identified in many studies. Therefore, it is important to organize trips associated with the lessons, and teachers have a lot of responsibility at this point (Falk & Dierking, 2000; Hein, 1998; Jarvis and Pell, 2005). At the end of the study, the teachers stated that they were both better equipped and more willing on this subject.

In the comparison of teachers' self-efficacy beliefs based on gender, there was no difference between male and female teachers at the beginning of the study, but at the end of the study, it was observed that the difference developed in favor of female teachers. At this point, it is possible to say that as the knowledge of female teachers about these activities where there is a high burden in terms of responsibilities increased their self-efficacy beliefs also increased. In a study conducted by Bozdođan (2012) with pre-service teachers, it was found that female participants were more concerned about safety, accidents, and discipline than male teachers.

In the study on seniority, it was found that teachers with more seniority had higher self-efficacy beliefs at the beginning of the project. It is normal that those who have been teaching for many years have more experience due to the possibility that they have organized more trips, and therefore have high self-efficacy beliefs. In the study conducted by Tal (2001), it was found that pre-service teachers and teachers who are new in the profession were more hesitant to organize field trips. Sontay & Karamustafaođlu (2017) concluded that science teachers' self-efficacy belief scores on organizing trips are affected by professional experience but not by gender. As a result of the project studies, it is seen that this difference has disappeared. Here, too, it is possible to say that to get information about the educational preparations (before, during and after the trip) to organize trips to out-of-school environments, to prepare teaching materials (observation forms, worksheets, and educational games) that can be used in these trips, and to conduct discussions about these forms has an important in the development of these beliefs. Because, in self-efficacy belief, the knowledge and experiences (Aydın, İnnalı, Batar & Çakır, 2013) play an important role, it can be emphasized that it is important for the in-service trainings to be practical.

In the questions asked to the teachers about the impact of the project the teachers stated that they felt much more competent and equipped about how the trips should be organized. They stated that they became aware of the organization of the trip and the preparations that need to be made, and that they learned how the trip could be associated with the lesson. Since the success of the trips is directly related to the preparations made before, during and after the trip (Jarvis & Pell 2005), it is known that teachers' guidance is very important for students (Cox-Peterson & Pfaffinger, 1998). It has been found that teachers' knowledge and awareness on this issue have increased.

It is very important to have experience and knowledge for out-of-school activities. This will give both motivation and encourage the organization of such field trips. In the study, many participants stated expressions according to this finding and explained that their experiences throughout the project increased both their motivation and desire. Lakin's (2006) study also asked pre-service teachers whether they would organize a trip to the river. The pre-service teachers stated that they would not want to travel because of the risks. However, after the field trip to the riverside, it was determined that most of them became enthusiastic about this issue. In the study carried out by Carier (2009), it was stated that pre-service teachers were hesitant at first because they did not

experienced activities carried out in nature before, and they felt more competent in this regard after the activity. As in these studies, it is emphasized in many other studies that applied activities related to field trips to both pre-service and in-service teachers should be done (Cox-Petersen and Pfaffinger 1998; Michie 1998; Olson et al. 2001).

Conclusion and Recommendations

Griffin (1994) states that teacher' perceptions, perspectives, values and motivations are very important factors for the trip they will organize and that these directly affect the quality of the trips they organize. Therefore, it is very important to increase the awareness and knowledge of teachers about their role in field trips, to practice and to gain experience In the present study, not only were the out-of-school learning environments introduced to the teachers, but most importantly, what could be done educationally in these environments was explained and teaching materials were prepared. It is seen that these materials provide teachers with a better understanding of how educational practices should be in out-of-school learning. It has been observed that the studies conducted have created very positive results on teachers. It is thought that especially practical training has a significant contribution to this. In the present study, the things that can be done in out-of-school learning environments were explained giving the example of a science center, and applications were made in the science center. Botanical garden, zoo, aquarium etc. applications can be made in many different environments. In addition, researches can be carried out with students, and students' ideas can be obtained.

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