Determination of Biology Department Students' Past Field Trip Experiences and Examination of Their Self-Efficacy Beliefs in Planning and Organising Educational Field Trips

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Abstract

The purpose of this study is to determine the past field trip experiences of pre-service teachers who are graduates of Faculty of Sciences, Department of Biology and who had pedagogical formation training certificate and to examine their self-efficacy beliefs in planning and organizing field trips with regard to different variables. The study was carried via cross-sectional design and total 260 pre-service teachers from three different universities, 112 males and 148 females, participated in the study. During the process of data collection, questionnaire form and teacher self-efficacy belief scale for organization of educational field trips (EAGOO) developed by the researcher was used. The numerical data gathered was analysed via descriptive statistical methods and open-ended questions were examined via content analysis. The research findings revealed that nearly half of the pre-service teachers never joined educational field trips and out of the participants, who joined these field trips, three-quarters of them took part in field trips during their university years and they preferred field trip sites which were suitable to their course contents of the department they were studying at. Another finding of the study revealed that pre-service teachers did not have much knowledge about organizing educational field trips, but they thought that they were qualified for organizing field trips.

Keywords Pedagogical formation, Field trip, Department of Biology, Self-efficacy

1. Introduction

Field trips are very important learning environments for students and they are called as places where teaching is experienced because it is remarked that a well-organized trip provides opportunities for students to work collaboratively and also enables them to build relationship between reality and theory at a higher level. Moreover, unlike traditional class environments, field trips increase student motivation more and provide opportunities for students to make learning fun and they are learning environments which provide an effective and practical learning experience for students (Coughlin, 2010; Krakowka, 2012).

It was revealed by the studies that field trips provide opportunities both for cognitive learning (Anderson & Lucas, 1997; Miglietta et al., 2008; Orion & Hofstein, 1994) and also for affective

and psychomotor learning; they also develop thinking skills, enhance motivation and awareness, promote social skills, and prepare a substructure for future learning (DeWitt & Storksdieck, 2008; Houser et. al., 2011; Morag & Tal 2012; Orion & Hofstein, 1994; Skop, 2009). Field trips are regarded as effective strategies for arousing interest in science and generating positive attitudes towards science and they have a profound effect on students' taking interest in science (Cha, 2001).

Although their important functions are revealed with the studies conducted, it is known that both teachers and pre-service teachers encounter many problems regarding designing field trips for educational purposes. The most frequently encountered problems during the field trip can be listed as follows: not being able to make connections between the field trips and the course, lack of planning and organization for a successful trip, anxiety for not being able to control the class, time-constraints for the field trip, funding limitations, the length of bureaucratic process, and lack of appropriate and effective evaluation after the field trip (Bowker, 2004; Bozdoğan, 2012; Bozdoğan & Demirbaş, 2006; Coughlin, 2010; Demir, 2007a; Ekeke, 2007; Griffin & Symington, 1997; Güleç & Alkış, 2003; Kisiel, 2005; Nespor, 2000; Noel, 2007; Tal, Bamberger & Morag, 2005; Morag & Tal, 2012; Wunder, 2002). As it is regarded, a good planning, making connections with the course and coordination, well-prepared activities which would actively engage students in learning, and effective evaluation after the trip are required for successful field trips, which appear as long-term school applications (Bowker & Tearle, 2007; Hurley, 2006; Kisiel, 2005; Nespor, 2000; Tal, Bamberger & Morag, 2005). It was also noted that if field trips are planned because of a prize, a need, or a requirement and they are not linked the course, they will not make any academic contributions apart from being fun (Noel, 2007). Teachers have an important role for the evaluation of education in out of school setting, so that they can promote education in school. Teachers should actively participate in the process of planning and coordinating field trips with an educational intent to non-school environments and they must make great efforts for the process of successful field trips (Demir, 2007a; Kete & Horasan, 2013).

As is seen, the studies conducted demonstrated that both teachers and pre-service teachers encounter various problems regarding planning and organizing educational field trips which are specifically made connections between the course and non-school settings and they revealed that professional training must be given to overcome these problems. Considering the fact that students should practice for the trips to be successful (Clark & Ashton, 1999), specifically, pre-service teachers' receiving such training during their university years will make contributions to use non-school environments more effectively in their professional life. However, before pre-service teachers take part in such training process, their self-efficacy beliefs in organizing trips must be identified and this will provide different perspectives to the instructors of the course. In the light of this data, the instructors of the course should plan and organize learning process and also make up the deficiencies which are very important for the professional development of pre-service teachers.

2. The Purpose of The Study

The purpose of the study is to determine the past field trip experiences of pre-service teachers who are graduates of Department of Biology, Faculty of Sciences, and who had pedagogical formation training certificate and examine their self-efficacy beliefs in planning and organizing field trips with regard to different variables. The research sought answers to the following questions.

1. Have pre-service teachers joined field trips with and educational intent in their past experiences?
2. What are the qualities of the educational field trips which pre-service teachers joined in their past experiences?
3. What is the pre-service teachers' level of competence about organizing an educational field trip?
4. Is there a significant difference between total self-efficacy scores of pre-service teachers about planning and organizing a field trip and gender, their state of joining educational

field trips in their past experiences and receiving training about organizing an educational field trip in their past experiences?

5. What is the pre-service teachers' level of knowledge about the process of organizing a field trip with an educational intent?

3. Method

In the research, a cross-sectional survey design, one of the quantitative research methods, was used. This method is conducted to make evaluation in line with standards, and to reveal the possible relationships between the events. The main purpose of such research is to identify and explain the case which is examined in detail (Çepni, 2007). This method was used in the study because it was considered that both pre-service teachers' (biology majors) past field trip experiences would be determined and their self-efficacy beliefs in planning and coordinating educational field trips would be examined and described with regard to various variables.

3.1. The population of the Study

Total 260 pre-service biology teachers (biology majors), 112 males and 148 females, who graduated from pedagogical formation training certificate program in three different universities in 2014-2015 academic year participated in the research.

3.2. *Data Collection Tool*

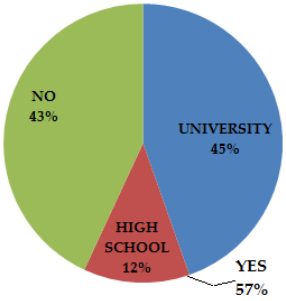
During the process of data collection, questionnaire form and teacher self-efficacy belief scale for organization of educational field trips (EAGOO) developed by the researcher were used. The questionnaire form consists of 9 close-ended questions and 3 open-ended questions. EAGOO which is composed of total 30 items, 17 positive and 13 negative items, is a 5 point Likert type scale. Validity analysis of the scale was performed and it was found that the factor loadings of the 30 items before being exposed to rotation was between 0,460 and 0,706, but after a Varimax rotation, factor loadings with their being exposed to rotation was found to be between 0,404 and 0,711. It was also detected that the scale's item-total correlation coefficients changed between 0,585 and 0,759. Moreover, total explained variance of the scale was determined to be 50,97 %. As a result of the reliability analysis, the scale's Cronbach's Alfa reliability coefficient was calculated to be 0,931, Guttmann Split-Half value was calculated as 0,889, and Sperman Brown reliability coefficient was computed to be 0,889. These results reveal that the scale has quite a high reliability, every item that is included in the scale serves the general purpose of the scale meaningfully which is to measure the desired quality, and every item is distinctive at a desired level.

3.3. Analysis of Data

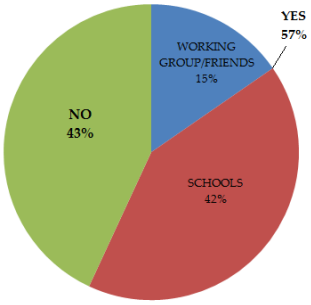
Frequency, percentages and arithmetic average, which are descriptive statistical methods, were used for the statistical analysis of data collected for the sub-problems whose answers were sought within the framework of the general purpose of the research and t-test and one-way ANOVA were benefited from to determine the differences between the independent variables. Data related to the numerical values were arranged in tables and they were interpreted. Whether there is a significant difference between the independent variables or not was tested at the level of $\alpha = .05$. Two open-ended questions in the questionnaire were analysed via content analysis. For that purpose, two researchers examined the responses given to the question in the form individually and they coded the statements of pre-service biology teachers by giving them names. Afterwards, they brought these codes together and they composed the themes considering the common points. Finally, the researchers organized these codes and themes and arranged them in a tabular form. As a result of content analysis, it was found that the percentage of inter-rater agreement was 86%. Some example statements from pre-service teachers' ideas were given below the table which was formed as a result of content analysis.

4. Results

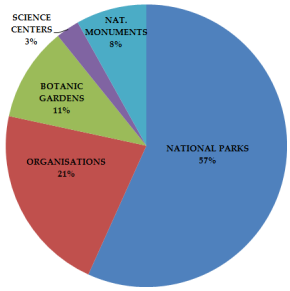
The variables for the pre-service teachers' state of participating educational field trips before, their preferences for the trips, and the person/ institutions that planned and organized the trips were examined and they were presented in Graphic 1, Graphic 2, and Graphic 3.



Graphic 1. Pre-service teachers' state of participating in educational field trips in their past experienecs (N=260)



Graphic 2. People or institutions that organized the educational field trips which pre-service taechers participated (N=260)



Graphic 3 Field trip sites which pre-service teachers visited (N=148)

For Graphic 3:

National Parks; *Ulugöl natural Park, Kızılırmak Delta, Bird Sanctuary (Kuş Cenneti), Ilgaz National Park, Gelibolu National Park,, Hamsilos Natural Park, Bird Sanctuary National Park,, Sultan Marshes National Park Ayder National Park, Uzungöl, Hatila Valley National Park, Karagöl National Park, Bolu Abant National Park and etc.* ***Various Organizations;*** *Water treatment plant, , Food factory, Universities.* ***Botanical Gardens;*** *Batum Botanical Garden, İstanbul University Botanical Garden, Gaziantep Botanical Garden and et.* ***Natural Monuments;*** *Karaca Cave, Fairy Chimneys, and etc. .* ***Science Centres ;*** *Feza Gürsey Science Centre , METU Science Centre and etc..*

When Graphic 1 is examined, it is revealed that 112 of the pre-service teachers (43%)have never been to any educational field before, but 18 of them (57%) have joined field trips for educational purposes. It was discovered that out of 148 teacher candidates who joined educational field trips, 32 of them (12%) participated in these trips while they were studying in high school and 116 of them (45%) took field trips for educational purposes at the university. When Graphic 2 was examined, it was determined that 108 pre-service teachers (42%) participated in educational field trips which were organized by the schools and 40 of them (15%) joined such trips with their friends / working groups. When Graphic 3 was analysed, it was found that 84 of the pre-service teachers (57%) participated in the educational field trips which were organized to National Parks, 32 of them (21%) to various institutions and organizations, 16 of them (11%) to Botanical Gardens, 12 of them (8%) to Natural Monuments, and 4 of them (3%) to Science Centres. It is considered that the reason for more than half of the pre-service teachers' participation in field trips for educational purposes organized to National parks is that these sites may have been suitable for the course contents of Department of Biology.

Content analysis of the responses given to the open-ended question " What contributions did educational field trips to non-school environments make to you?" asked to the pre-service teachers who have been to educational field trips before within the context of the research was performed and it was presented in Table 1.

Table 1. Pre-service teachers' views about the trips they took (n=148)

Pre-service Teachers' Views	**f**	**%**
1. They enabled me to gain new knowledge/ detailed information which I did not know before.	44	29.7
2. Viewing the practical applications of the theoretical knowledge I acquired at school. materialised this knowledge which became meaningful and their retention increased.	40	27.0
3. They enabled me to understand scientific method.	36	24.3
4. They created awareness by fostering my interest in various topic/ events.	12	8.1
5. They made contribution to learning with fun.	12	8.1
6. They made us gain different experiences.	4	2.7

44 of the pre-service teachers (29.7%) stated that as a result of the educational field trips, they acquired new/detailed knowledge about the subjects which they did not know before. 40 of the teacher candidates (27%) stated that thanks to educational field trips which they took, the theoretical / abstract knowledge which they acquired in the school materialized and became meaningful and they added that their retention increased; therefore, trips promoted education in the schools. 36 of the pre-service teachers (24.3%)stated that they learned what kind of process was scientific method. 12 of them (8.1%) remarked that thanks to the field trips with an educational intent, their interest in different subjects/ events increased and this created awareness for them. Finally, 4 prospective teachers (2.7%) stated that they gained experience with educational field trips. For example, while one of the pre-service teachers said, *"I learned the process which scientific studies went through with these trips (M_{12})"* , the other one said, *"… I saw plant species which I have not seen before in botanical garden which I went to (F_{16})"*, still another one said, " …. *I had the opportunity to learn many things, which I did not know, related to my major (F_{88})"*. While a pre-service teacher stated, "*I obtained detailed information about the bird's anatomy and migration in the bird sanctuary where I went (F_5)",* another teacher said, " *I had the opportunity to explore the plants' and animals' habitat in the trip. What l learned in the course became more meaningful. My knowledge materialized (M_{60})"*. Still another teacher candidate said, "*It helped me to learn the subjects which I could not comprehend in theory more easily and retain them (M_{120})"*. Another teacher who went on a trip to Hamilos Natural Park in Sinop stated, *"I can say that information I had materialized and became more meaningful (F_{42})"*. A pre-service teacher who went to Gelibolu *(Gallipoli)* Natural Park stated, *"This trip enabled me to understand the spirit of Çanakkale (Gallipoli) better. I saw how our ancestors fought to come to these days and I think that my awareness increased (F_{92})"*. One of the pre-service teachers who went to Batum Botanical Garden stated, *"I did not know that trees and plants were so fascinating. My interest in plants has increased (F_{70})"*. Another teacher candidate who took a trip to water treatment plant opined, *"….I gained information about the functioning and operation principles of the machines there (F_{72})"*. A pre-service teacher responded this question like that: *"I think that it is remembered easily and I spent time having fun (F_{172})"*. Another candidate who participated in a technical trip to Nevşehir said, *"…We had experience with fermentation process, which was demonstrated in practice (F_{220})"*. One of the pre-service teachers responded, *"…I understood that plants and animals are not as simple as they are viewed, in fact, it takes only seconds to damage them; however, it takes years for them to grow. I can say that I am much more sensitive now (F_{112})"*.

Pre-service teachers' state of receiving training about planning and organising educational field trips (seminar, training, course, etc.,), their place of education, and the desires of those students who did not receive training but who wanted to receive training were examined and presented in Table 2.

Table 2. Pre-service teachers' training and wishes to receiving training about planning and organizing educational field trips

Pre-service Teachers' Views	**f**	**%**
Pre-service teachers' training status (N=260)		
Yes	24	9.3
No	236	90.7
Pre-service teachers' wish about receiving training status (N=236)		
Yes	168	71.1
No	68	28.9

When Table 2 was examined, it was revealed that out of 260 pre-service teachers, 236 of them (91%) did not receive any training (seminar, training, course, etc.,)about planning and organizing educational field trips in their past educational experiences (selective course, course, seminar, etc.,), 24 of them (9%) received training and the whole training was actualized in university years. In Table 2, the wishes of 236 pre-service teachers who did not receive training before but who wanted to get training were examined. It was found that 168 of them (71%) wanted to receive such education whereas 68 of them (29%) did not feel the need to get such training.

Pre-service teachers' reasons for wanting to receive training or not on planning and organizing educational field trips were examined and presented in Table 3.

Table 3. Pre-service teachers' views on wanting to receive training or not (n=236)

Pre-service Teachers' Views	**f**	**%**
Pre-service teachers who want to receive training		
1.To have information about organizing an educational field trip	128	54.3
2. To gain experience by observing implementations of educational field trips	22	9.3
3. To facilitate learning by using non-school environments effectively in my lessons	18	7.6
Pre-service teachers who do not want to receive training		
1. Due to burnout which results from intensive undergraduate program	24	10.2
2. No response	44	18.6

When Table 3 was examined, 128 pre-service teachers (54.3%) stated that they needed such a training because they wanted to gain information about how to plan and organize field trips for educational purposes, 22 of them (9.3%) stated that they wanted to gain experience by observing the implementations of field trips for educational purposes and finally 18 of them explained that they were in need of such a training as they wanted to use the non-school environments effectively in their courses. For that purpose, one of the pre-service teachers said, *"I would like to get such training because I can both develop myself and also obtain information (M_2)"* . Another candidate stated,*"…if I become a teacher, I can offer more effective learning opportunities for my students (M_6)"* and still another teacher said, *"I would like to learn the relationship between non-school settings and education and use them when I become a teacher (F_{22})"* While a pre-service teacher said, *"…. To gain experience about planning and organizing trips (M_{34})"*, the other teacher said *"…to be more conscious and to have information by developing myself (F_{54})"*. Still another pre-service teacher expressed her opinion like that: *"…. To be more helpful and useful about what I can do on a trip with my students (F_{104}).* The other teacher remarked, *"Because teaching frequently in the classroom will cause monotony, it may become boring. Therefore, by receiving*

such training and using non-school environments in my lessons, I believe that my students will show interest in my courses (M_{112})". While another teacher candidate said, *"I would like to receive training to gain more knowledge about my major (M_{62}),* the other one stated, *"Because I would have the chance to gain different knowledge in different circumstances. I could have accumulated more knowledge via course, etc.,(F_{132})"*. Another teacher candidate said, *"I would like to be more experienced when I carry out such an activity with my students (K_{82})"*. Another candidate expressed his opinion in that way: *"I think out of school settings are more beneficial for education and teaching. That's why I would like to obtain information (M_{96})"*. One of the pre-service teachers answered, *"Promoting education in school with such activities allows for knowledge to retain more in brain. Therefore, when I become a teacher, I would like to be informed and learn how to follow a new path (M_{208})"*. In addition to this, 24 pre-service teachers (10.2%) stated that although they had not received such training before, due to burnout resulting from intensive undergraduate program, they did not want to get such training. 44 candidates (18.6%) did not express their reasons for not wanting to receive training. In this respect, a pre-service teacher said, *"Throughout my education life I have taken so many courses that I do not want to do any activity related to school (F_{76})"*. Another teacher stated, *"I do not want to take any courses (M_{106}).* Still another candidate remarked*, "… we have taken many courses in the school, so I think I can plan and organize a trip (F_{118})"*.

Pre-service biology teachers' total EAGOO scores were examined regarding gender, state of participation in an educational field trip, receiving training related to planning and organizing a field trip for educational purposes, and students' who did not receive such training related to planning and organizing an educational field trip but want to get such education and they were presented in Table 4

Table 4. An examination of pre-service biology teachers' EAGOO total scores regarding various variables

Variables	f	Min.	Max.	M(SD)	t value	p
Gender*						
Male	112	3.13	4.70	3.79(.403)	0.874	**.383**
Female	148	2.73	4.93	3.84(.486)		
Their state of joining educational field trips *						
Yes	148	2.73	4.70	3.83(.439)	0.015	**.988**
No	112	3.13	4.93	3.82(.469)		
Their state of receiving training about organizing a trip *						
Yes	24	3.53	4.70	3.96(.452)	1.620	**.106**
No	236	2.73	4.93	3.82(.450)		
The state of those who did not receive training on organizing trips but who wanted to receive education **						
Yes	168	2.73	4.93	3.76(.468)	2.662	**.008*** **
No	68	3.30	4.70	3.93(.378)		

*PS. n=260 total M(SD)=3.82(.453), df=*258 and**234 for t-test, ***p<.05.*

It was determined that pre-service teachers regarded themselves qualified to plan and coordinate an educational field trip *(M=3.82)*. When pre-service teachers' self-efficacy in planning and organizing a field trip for educational purposes regarding gender was examined, it was found that average scores of male pre-service teachers (*(M=3.79)* were lower than female pre-service teachers *(M=3.84)*; however, there was not a significant difference between them *(p=.383)*. In addition, it was revealed that there was not a significant difference *(p=.988)* between the self-efficacy scores of pre-service teachers who joined educational field trips *(M=3.83)* in their past experiences and those who did not participate in educational field trips *(M=3.82)*. Moreover, a significant difference was not observed *(p=.106)* between the self-efficacy scores of pre-service teachers who received training (selective course, course, seminar, etc.,) on how to plan and organize an educational field trip *(M=3.96)* during their university life and those who did not get any training*(M=3.82)*. However, when total scores were examined, it was found that the scores of pre-service teachers who received training were higher than the scores of candidates who did not get such training. This finding reveals that training which is received during the university education can make positive contributions to pre-service teachers to regard themselves qualified about planning and organizing educational field trips.

An interesting finding in the study is that pre-service teachers who participated in the study and did not get training on planning and organizing field trips for educational purposes can not decide whether they want to receive such training or not. In this respect, it was found that there was a meaningful difference *(p=.008)* between the total scores of pre-service teachers who wanted to receive education *(M=3.76)* and those who thought that they did not need training (*M=3.93)* , which was in favour of pre-service teachers who did not want to receive training. In other words, it was determined that when compared to pre-service teachers who did not receive training but who stated that they needed such training, pre-service teachers who did not receive any training about how to plan and organize an educational field trip and who opined that they did not feel the need for such education considered themselves more competent at a significant level regarding planning and organizing a trip. Pre-service biology teachers' level of knowledge related to planning and organizing a field trip for educational purposes was examined and it was presented in Table 5.

Table 5. Knowledge level of pre-service biology teachers about planning and organizing a field trip for educational purposes

Process	Things to do	f	%
Before the trip	**a) Educational Preparation Process**		
	Gathering information about the field trip site	133	51.5
	Informing students about the trip	119	45.7
	Identifying the purpose of the trip	88	33.8
	Making connections between the trip and course subjects/ objectives	64	24.6
	Preparing the teaching materials to be used during the trip	36	13.8
	Finding a guide (if required)	28	10.7
	Visiting the trip site before (if required)	13	5.0
	b) Bureaucratic Procedure and Transportation		
	Preparing a trip plan (means of transport, number of people, destination, fare, etc.,) and presenting it to the authorities	160	61.5
	Granting permission and carrying out informing process	104	40.0
	Informing the authorities in the trip site / obtaining information	29	11.1
	c) Food and Beverage and Accommodation:		
	Meeting the food and accommodation needs	84	32.3

During the trip	Providing concrete learning experiences via giving information and answering the questions	108	41.5
	Providing opportunities for learning with fun without giving too much responsibility	60	23.1
	Promoting active participation and social interaction	45	17.3
	Controlling classes	39	15.1
	Providing opportunities for concrete experiences by exploring knowledge	28	10.7
	Promoting motivation and sustaining it at a higher level	4	1.5
	Providing students free time activities in line with their interests	---	---
	Making use of the teaching materials which were prepared	---	---
	Developing various skills (Critical thinking, research, etc.,)	---	---
After the trip	Evaluating the trip (discussion , question and answer, etc.,)	105	40.4
	Informing those concerned / organizations	31	11.9
	Determining whether the trip reached its aims via assessment tools	21	8.1
	Writing a trip report, presenting it, and exhibiting the visuals on notice boards	20	7.7
	Suggesting new ideas to make the next trip more effective	---	---

Within the scope of "educational preparation", one of the things to do before the trip, it was determined that 51.5% of the pre-service teachers stressed that information about the site where field trip was going to be organized must be collected, 45. 7% of them said that students must be informed about the trip, 33.8 % of them remarked that the purpose of the trip must be identified, and 24.6 % of them emphasized making connections between the field trip and the course / subject. Regarding "bureaucratic procedure, 61.5% of the pre-service teachers stated that a trip plan must be prepared and presented to the authorities and 40 % of them emphasized that necessary permission must be obtained. With regard to length of trips and "food and beverage and accommodation", it was discovered that 32.3 % of the pre-service teachers emphasized that food and accommodation needs must be met. Within the scope of the things to do during the trip, it was determined that 41.5% of the teacher candidates stated that students must be informed in the trip site and the questions they ask must be answered, 23.1% of them indicated that opportunities to make learning fun must be promoted, 17.3% of them stated that active participation and social interaction must be fostered, and 15.1% of them emphasized that class control must be provided in the trip site. Concerning the things to do after the trip, it was revealed that 40.4 % of pre-service teachers stressed that the trip must be evaluated through discussion, question and answer, etc., after the trip and 11.9% of them emphasized that families and administration must be informed.

5. Discussion, Conclusion and Suggestions

It was revealed by the study that nearly half of the pre-service teachers, who are graduates of Department of Biology which is one of the departments most suitable for the field trips, have never participated in educational field trips and three-quarters of the participants have joined these trips during their university years. In the renewed biology curriculum, biology subjects are related to daily life and it is found that such educational trips were not provided during secondary education. When the studies which examine the reasons for not preferring field trips in literature are reviewed, the main reason is the financial problems (Carr, 2003; Güleç & Alkış, 2003; McKeown-Ice, 2000; Mc-Lure, 1999; Ritchie & Coughlan, 2004). In the studies conducted teachers' and school administration's lack of interest in field trips and lack of knowledge about planning and organization process of field trips draw attention (Morag & Tal, 2012; Tal,

Bamberger & Morag, 2005). In addition to this, tight curricula (McKeown-Ice, 2000), lack of information about the content of the trip, long travel time and weather conditions (Goh & Ritchie, 2011) attract the attention. With regard to organization of field trips for educational purposes, it is suggested that universities should provide financial support and they should implement different courses to their teaching programs. These recommendations are precautions which will increase pre-service teachers' demand for field trips. Moreover, it is suggested that teachers who teach secondary school biology courses should be encouraged by the school administration and the directors regarding planning and designing educational field trips and they should be informed about this field. Furthermore, the results of the study reveal that participation of three-quarters of the pre-service teachers who joined educational field trips in such educational field trips organized by the schools demonstrate the importance of the schools. It was discovered in literature that teachers and class mates had an effect on students' participation in field trips (Goh & Ritchie, 2011; Wong & Wong, 2008; Xie, 2004). However, the studies reveal that the students who join outside the school setting activities acquire more knowledge and scientific thinking skills (Crowley et. al., 2001) and outside the school settings develop students' problems solution skills quite a lot when compared to the other students (Carr, 2004) .

It was revealed that more than three-quarters of pre-service biology teachers (biology majors) who participated in educational field trips in their past experiences preferred national parks botanical gardens, and natural monuments. It is considered that with regard to professional development, such a condition occurs due to their preferences of trip sites suitable to the content of the courses which they study at the department. Considering the fact that most of the students choose field trips because they think that they are beneficial to their studies and future careers, it can be suggested that educators should use field trips as a path in this context. Moreover, educators must emphasize the importance of field trips by stating that students will be able to observe the implementations of the concepts learned in the classroom in the real world via field trips. Thus, question marks in students' minds about the purpose of the trip will be removed and also it will help them to take a positive attitude towards field trips (Goh & Ritchie, 2011).

Nearly one-third of the pre-service teachers who participated in field trips with an educational intent in their past experiences stated that they gained new and detailed information with these trips, three-quarters of them said that the knowledge they gained in the school became concrete and meaningful and added that they had information about scientific method. It is revealed in the studies that field trips have positive effects on cognitive learning (knowledge, understanding, and thinking skills) (Anderson & Lucas, 1997; Houser et. al., 2011; Miglietta et al., 2008; Morag & Tal 2012; Orion & Hofstein, 1994; Pace & Tesi, 2004; Skop, 2009; Wong &Wong, 2009). Still other studies prove that field trips develop independent analysis skills (Skop, 2009), and a field trip makes contributions regarding planning, coordinating students, effective time management and collaborating with other teachers (Krahenbuhl, 2014). As a result of the study, nearly all the pre-service teachers stated that they did not receive any training (selective course, course, seminar, etc.,) related to planning and organizing educational field trips in their past educational lives and two-thirds of them stated that they wanted to receive such training. An interesting finding is that nearly one-third of the pre-service teachers who have not received training before still do not want to receive such training.

Another finding of the study is that pre-service teachers consider themselves competent regarding planning and organizing an educational field trip *(M=3.82)*. It is revealed in the study that there was not a meaningful difference between pre-service teachers' total EAGOO scores and gender, participation in the trips, receiving training on this subject, and self-efficacy points. However, it is found that the self-efficacy scores of pre-service teachers who received training about how to plan and organize an educational field trip (selective course, course, seminar, etc.,) *(M=3.96)* was higher than self-efficacy scores of the pre-service teachers who did not get training *(M=3.82)*. This finding demonstrates that training received during the higher education will make positive contributions to pre-service teachers' regarding themselves self-sufficient with respect to planning and organizing field trips for educational purposes. When it is considered in literature that

knowledge and experiences which retain most in brain are provided with field trips (Krakowka, 2012) and even an average student who joins field trips in the class develops his/her research and analytical skills (Hefferan, Heywood & Ritter, 2002), pre-service teachers' gaining various experiences with such implementations will make contributions to their professional development. In this respect, the studies conducted reveal that thanks to field trips, prospective teachers gain important experiences about planning a trip and the details to take into account when planning a trip (Bozdoğan, 2012; Munakata, 2005). An interesting finding in the study is that a significant difference was revealed *(p=.008)* between the self –efficacy scores of the pre-service teachers who did not receive training on planning and organizing an educational field trip but who want to get an education *(M=3.76)* and the scores of the pre-service teachers who claim that there is no need for such training *(M=3.93)*. In other words, it was determined that pre-service teachers who did not receive any training about how to plan and organize an educational field trip and stated that they did not need such training regarded themselves more qualified at a meaningful level with respect to planning and coordinating trips than pre-service teachers who did not receive training but stated that they needed such training. The reason for this occurs as a condition which must be examined in future studies.

Pre-service teachers' level of knowledge related to the process of planning and organizing a field trip for educational purposes was also examined in this study. It was discovered within this framework that pre-service teachers' level of knowledge was rather low. Similar studies are reviewed in literature (Bozdoğan, 2012; Demir, 2007a). It was determined that regarding the things to do before the trip, nearly half of the pre-service teachers highlighted the preparation of a trip plan and its presentation to relevant departments, gathering data about the trip site, informing students before the trip, and finalizing the necessary permission procedures and one-third of them put emphasis on identifying the purpose of the trip and meeting the needs of food /accommodation. Only a quarter of pre-service teachers laid emphasis on the trip site and making connections between the trip and course/subject, most important aspects of a trip and very few of them laid stress on the preparation of teaching materials to be used in the trip, finding a guide, and obtaining / giving information in situ. Nearly half of the pre-service teachers emphasized that students' questions must be answered by informing them during the trip; nearly a quarter of them laid emphasis on offering students an opportunity to make learning fun without giving them too much responsibility and very few of them laid emphasis on students' active participation, social interaction and ensuring class control. What draws attention is that only one tenth of the pre-service teachers emphasised exploring and gaining knowledge in their field trips. Moreover, none of the pre-service teachers laid stress on sustaining student motivation, free time activities, using work sheets, and developing skills such as critical thinking, doing research, and analysis. Regarding things to do after the trip, nearly half of the pre-service teachers highlighted the evaluation process via chatting in the class. Approximately one tenth of prospective teachers laid emphasis on informing those concerned after the trip (family, school administration), assessing whether the trip achieved its goal or not with assessment tools, exhibiting visuals on the notice boards, and preparing/presenting a trip report. It is determined in the literature that new teachers frequently focus on bureaucratic details (registration, departure times, transportation, etc.,) too much and they think over the safety of the trip. In fact, making connections between the trip and teaching program and things to do before, during and after the trip are more important than bureaucratic procedures for the trip to be meaningful. Although these procedures are challenging, they are creative and fun. In conclusion, these practises exhibit what students have learnt from the trip and help us understand whether the trip achieved its goal or not (McLoughlin, 2004). Within this context, non-school related field trips have many advantages and planning, implementation and evaluation processes of the trip must be emphasised strongly so that they can achieve their goals (Bozdoğan, 2007, 2012; Demir, 2007b; Ertaş, Şen & Parmasızoğlu, 2011). The most important aspect which is emphasised in field trips is that field trips must be well-planned to achieve their goals and they must be linked to school curricula (Bowker & Tearle, 2007; Hurley, 2006; Kisiel, 2005; Port, 1997; Tal, Bamberger & Morag, 2005). It is revealed in the studies in literature that specifically, research courses based on a field trip in university teaching programs

will foster pre-service teachers' motivation to do research, provide them opportunities to work collaboratively, develop their scientific skills and provide feeling of self-confidence in their professional life (Bozdoğan, 2012; Hefferan, Heywood & Ritter, 2002; Tal, Bamberger & Morag, 2005).

The most interesting condition which draws attention in the study is that even though pre-service teachers who are graduates of department of biology regard themselves self-sufficient regarding planning and coordinating an educational field trip, their level of knowledge about planning and organizing an educational field trip is rather low. In other words, pre-service teachers with low level of knowledge about planning and coordinating an educational field trip consider themselves self-sufficient in terms of organizing trips. This contradiction may be an interesting topic which needs to be explored for future studies.

Multiple data are required for a detailed investigation of field trip implementations in our country. For that purpose, data which will be obtained from different samplings composed of teachers and pre-service teachers will make contributions to the detailed examination of the situation.

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