

Pre-Service Science Teachers' Views towards the Process of Associating Science Concepts with Everyday Life*

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ABSTRACT

For students to be educated as science-literate individuals; It is expected that they will be able to know the basic knowledge of science, transfer these knowledge to everyday life, and use them to solve issues / problems they encounter. At this point, there are great duties for prospective teachers, who are teachers of the future, to raise science-literate individuals. It is aimed to take the opinions of prospective science teachers about the process of associating science subjects with everyday life in this study. 106 prospective science teachers participated in the research carried out as a case study. Opinion form and semi-structured interview were used as data collection tools while descriptive and content analysis methods were preferred in analysis. According to the theme created from the findings, the prospective teachers defined association with daily life as the use of information in everyday life, the connection of information with everyday life, giving examples from everyday life. As a result, in the study, it was found that, in associating with daily life, prospective teachers focused on transfer of knowledge to everyday life whereas they emphasized less about feeling, seeing or understanding science in events or situations that they encounter in everyday life.

Keywords: Association with everyday life, opinion, prospective teacher, science.

INTRODUCTION

Parallel to the increase in knowledge, individuals who know the necessary information and in addition to this, can access the information that they need whenever necessary are required instead of individuals who memorize all information. Parallel to this situation, the educational programs of the countries have begun to be changed (Schudel, Le Roux, Lotz-Sisitka, Loubser, O'Donoghue and Shallcross, 2008) and some changes have been made in the teaching programs in Turkey over the years. This change has a background which is an international concept, for ex. PISA's contextual learning (OECD, 2015). Associating science with daily life is a key factor for PISA which OECD countries become more and more interested in (Carvalho & Costa, 2015). Because we believe it is an indicator that shows us students from all over the world are becoming scientific literate individuals (OECD, 2015). As Eryilmaz and Kaya (2011) stated; Students in science programs are expected to explain the



problems they encounter in their lives and use the information they have acquired in their solution. As a matter of fact, the vision of the science curriculum is defined as; "To educate all students as science literate individuals" [Ministry of National Education (MEB), 2013:1]. As a result, in the science program; It is expected that instead of memorizing knowledge, they should be science literate individuals who are active in the process and have high-level thinking skills. One of the most basic features of being science literate individuals, besides knowing the concepts of science, is to understand the place of these concepts in daily life and to be able to use concepts effectively in everyday life. Science education aims to make students aware of how science concepts can be used in everyday life (Çepni, Taş & Köse, 2006; İlkörücü, Göçmençelesi & Özkan, 2009). In this context, it can be said that associating science programs with daily life has a prominent place.

Association with daily life is to be able to perceive that science in the nature exists in every field of human life, to understand what events can be made up of which causes and to be able to comprehend what field of science these causes belong to (Yılmaz 2008). In this context, the association with daily life provides a meaningful learning of science concepts and the use of this knowledge in situations or problems where they are encountered in life. As stated by Ay (2008); giving examples from daily life during the course presentations and establishing the necessary relationships in this area will also minimize the misconceptions that arise from the daily misguided observations of the students. In addition, the association with daily life increases the interest and attitudes of the individuals towards science and provides the permanence of the learned information (Hürcan & Önder, 2012). As it can be understood, the association with daily life has an important place in the development of cognitive, affective aspects and skills of students.

While the association with daily life is important in science lessons, it can be said that, the association with daily life is not done completely in science lessons and the level of students' association with daily life is low. In the studies conducted in field literature, it has been concluded that the students are not in a sufficient level to associate the concepts of science with the events in everyday life (Akgün, Tokur & Duruk, 2016; Deder, Şen, Sarı & Çelik, 2013; Doğan, Kırvak & Baran, 2004; Emrahoğlu & Mengi, 2012). Similarly, parallel results were obtained from the studies conducted with prospective teachers and it was understood that their levels of association with daily life were low or moderate (Özmen, 2003, Yadigaroglu, Demircioğlu, Azizoglu, Topal, Ağalar, Crespo & Pozo, 2004) also point out that, most of the studies done on teaching science indicate that students have difficulty establishing relationships between daily (intuitive) and scientific knowledge taught to them. In this context, it is thought that it is important in terms of field literature to dwell on the subject on association of science concepts with everyday life, on how to make association with everyday life and to go over the shortcomings made in the process.

For science lessons to be associated with daily life, it can be said that it is necessary to continue the lessons with examples and connections from the daily life in the process of discussing the topics. Likewise, Yildirim and First (2014) concluded that students can more easily explain situations which resemble the events that they encountered in textbooks or teaching process, but they cannot explain adequately in face of different examples. In parallel with this situation, it can be said that the more place is given in the lessons to association with daily life, the more effective it is on the students. Malan, Ndlovu and Engelbrecht (2014) concluded that using realistic activities during lessons, cognitive processing became more concrete and realistically oriented and the students reported greater motivation to learn. In this context, several factors such as course books, teacher, and teaching process influence the process of association with daily life. It is stated in field literature that teacher, curriculum, textbook, laboratory, learning attitudes and socio-economic factors (Koçak Kösece, 2013; Yılmaz, 2008) are affective in association of science with everyday life. In this context, it is

thought that taking the views of the participants on the process of association with daily life and determining the expectations and deficiencies in these points will be important in terms of field literature. When the literature is examined, we met very few studies which have identified the views of the participants on associating science with everyday life. Kamaraj (2009) examined the opinions of teachers and secondary school students on how they relate science and technology curriculum to daily life. Tanuğur, Ogan-Bekiroğlu, Gürel and Süzük (2012) evaluated the associations of secondary school physics program with everyday life according to teacher's opinions. In some studies conducted in the field, the views of science teachers on the effects of misconceptions on the daily life regarding heat and temperature (Türkoğuz & Yankayı, 2015) and the solar system and space (Yılmaz, Türkoğuz & Şahin, 2015) were examined. Ürek and Dolu (2016), on the other hand, determined the views of university students on the subject of elements and compounds in everyday life. Yildirim, Köklükaya & Selvi (2015) have taken prospective science teachers' views on the use of science in daily life in 3-Idiot film and the role of the public education in the education process. In this context, it is understood that the opinions on the association with daily life are usually based on the reflection of a science theme in daily life. However, there was no study in which the views of teachers or teacher candidates regarding the theoretical structure of association with daily life were taken. In this regard, in this study, it is aimed to determine the views of prospective teachers on matters such as what they understand from association with daily life, what are the factors that are effective in association with daily life, the level of usage of association with daily life in their lessons and how effective it is on students.

METHODS

A holistic single case design was used in the study in which the prospective science teachers' views on the process of associating science concepts to everyday life were determined. A case study was deemed appropriate because of the presence of a single analytical unit in a holistic one-case study and an investigation of its unique situation in the process (Çepni, 2014) and because, in the study done, status of the students in one faculty regarding association with daily life was aimed to be determined.

The study done was conducted in the education faculty of Uludağ University in 2015-2016 academic years. 106 prospective science teachers, including 39 fourth grade, 36 third grade and 31 second grade, participated in the study. First class students were not included in the study because training courses and field courses were differentiated in the questions in the study and they had not yet taken the training courses. For this reason, the participation of second, third and fourth grade prospective teachers were deemed appropriate. 87 of the prospective teachers in the study are female and 19 are male.

Opinion form and semi-structured interviews were used as data collection tools in the study. When the opinion form was prepared, firstly the field literature was searched and important points related to the association process with daily life were determined. Parallel to this point, open-ended questions are drafted. The questions were sent to two people who are experts about association with daily life and one person who is an expert about qualitative researches. Some inquiries were issued according to the feedbacks received, and some of the questions were edited. For example; It was proposed by the expert to add sub-dimensions to the questions written on what the factors that are effective in association with daily life are, and the question was structured from scratch by adding sub-dimensions. Parallel to this situation, the opinion form consists of 5 open-ended questions. In addition, open-ended questions were added to the form on demographic features and association with daily life, and the final form was given. The interview form was prepared in parallel with the open-ended questions on the opinion form and probe questions were added to the form. The response form was answered within a total of 30 minutes with 106 prospective teachers at different grade

levels. The interviews were selected among the participants who completed the opinion form. Participants were selected from among the students who were in good, intermediate and low level in their elective courses, and care was taken to include students with knowledge about association to everyday life. Interviews were done with the participation of a total of 21 students, with six of them in the fourth grade, eight of them in the third grade and seven of them in the second grade.

Content and descriptive analysis was used in the analysis of the data. From the data analysis, the data obtained from the opinion form was analyzed first. For this purpose, codes were extracted in the analysis process, and then categories were created by combining these codes. Frequency and percentage values for these have been established. The data obtained from the interviews were then transcribed and used to support findings from the opinion form. Here, notations such as Ö24 have been used in the representation of prospective teachers. Here, Ö indicates prospective teacher, 2 indicates that he/she is in second grade and 4 indicates that he/she is the fourth prospective teacher.

FINDINGS

Findings regarding prospective science teachers' views on the process of associating science concepts with everyday life are included. In Table 1, there are findings about the opinions of prospective teachers about the importance of association to daily life.

Table 1. Findings regarding importance of association with daily life

	Very Important		Important		Undecided		Insignificant		Very Insignificant	
	f	%	f	%	f	%	f	%	f	%
The importance of association with daily life in learning a subject	58	55.2	43	40.9	4	3.8	-	-	-	-
Biology's place in your daily work in your life	20	19.1	64	60.9	20	19.1	1	0.9	-	-

It is seen that prospective teachers are aware that transfer of scientific concepts to daily life is very important but that they give less space to this subject in their lives. They pointed out that transfer to daily life is important in the context of students' learning at school. They considered that concepts such as persistent learning and concretization were effective in learning, and stated that this problem could be solved by transfer. This condition can have different causes. As a result of the individual interviews with the students, the views on the importance of transfer to daily life can be seen in more detail with the following examples.

Ö44: *I do not think I use it enough, of course, I need to get more information on this subject. I also think that the lessons in the school are sufficient.*

Ö25: *I use it. For example, even when I buy detergent, I look at it and it says with bleach additive. I check exactly what it does and doesn't have. Milk, for instance has everything such as pasteurization method and such written on its back. I pay attention to those kinds of things. Even when I get a hand cream, I look at its content chemically, I do it in this way. Or I give you the smallest example; Here we are working on chemical substances in our laboratory lessons. Let's just say, how do we clean it when something splashes on our hand? You cannot wash everything under water.*

Ö34: *as one will consider it alive knowing that it is related to life and in this way, he will establish a connection with his life, I think that he will never forget, as a matter*

of fact, I don't forget the knowledge I learned in this fashion but I usually forget it when I memorize.

Ö41: When we give examples of daily life to the students, we see that it is much more lasting and interesting. In this school, I think that these laboratories, training courses are useful in this regard.

In table 2, there are findings related to the process of giving place to association with daily life of prospective teachers.

Table 2. Findings related to the process of association with daily life

	Always		Frequently		Occasionally		Rarely		Never	
	f	%	f	%	f	%	f	%	f	%
The status of giving place to association with daily life in your lessons when you are a teacher	37	35.2	66	62.9	1	0.9	1	0.9	-	-
The status of giving place to association with daily life in your lessons at university	1	0.9	13	12.4	63	60.0	26	24.8	3	2.9

In table 2, the degree to how much transfer to daily life is used in the lessons students take at university and their answers related to giving place to transfer to daily life in their lessons when they become a teacher are given. Accordingly, they clearly show that when they are teachers, they will use transfer to daily life in their lessons. However, transfer to daily life in the lessons they have taken at university, although included, is not widely used. Students have answered this question with rarely or occasionally (84.8%). The rate of the answer frequently is 12.4%. In the individual interviews carried out with students, they have stated that daily life is not generally given a place except for some particularly some lessons. They have stated that in other lessons an occasional place is given. Therefore, it can be said that these lessons are not taught in the context of transfer to daily life. It is important for the students to indicate that there is not much room for transfer and that it is a deficiency and that it is difficult for them to understand the course subjects. Below are the opinions of the students about the situation; as a result of the individual interviews.

Ö32: frankly speaking, they were all taught theoretically. Yes, of course there were examples in them from daily life, in genetics course for instance, mostly in genetics, but because it was mostly taught theoretically, it was never related to daily life.

Ö42: there was no place given to it in biology lessons until now. Because we only took information from books. We learned them but we never encountered them, but it was happening in other lessons, teachers were instructing us to do it.

Ö21: if I cannot give this to a student when I am a teacher, there wouldn't already be any meaning for me to give that information. Of course, my job is to deliver knowledge but I should also be able to teach him how to use that knowledge.

Table 3. Findings of prospective teachers' understanding from transfer to daily life

Category	Code	f	%	f	%
From knowledge to daily life	Usage/practice of knowledge in daily life	46	34.1	108	80.0
	Association of knowledge with daily life	22	16.2		
	Giving examples related to daily life	10	7.4		
	Practice of knowledge in problems encountered in daily life	9	6.7		
	Turning knowledge into practical methods	7	5.2		
	Transferring knowledge to daily life	6	4.4		
	Explaining knowledge with examples from daily life	5	3.7		
	Experiencing knowledge by way of life	2	1.5		
	Preferring events from daily life in lessons	1	0.8		
From daily life to knowledge	Showing that lesson is a part of daily life	5	3.7	15	11.1
	Becoming aware of the subject in daily life	4	2.9		
	Seeing where knowledge is in daily life	3	2.2		
	Combining daily life with the subject of the lesson	3	2.2		
Its effect on learning	Increasing permanence	4	2.9	12	8.9
	Grasping the subject better	3	2.2		
	Concretization of teaching	2	1.5		
	Learning by doing and living	1	0.8		
	Knowledge creating differences in our behavior	1	0.8		
	Knowledge making life easier	1	0.8		
Total		135	100.0	135	100.0

When table 3 is evaluated, students mostly (80%) perceive transfer to daily life or association as applying the theoretically learned knowledge to daily life, to put it into practice. Bringing knowledge to bear, establishing a relation between knowledge and daily life, experiencing knowledge in daily life are different statements of students in the first theme at similar starting points. There are also students (11.1%) who state an opinion on using events observed in daily life reaching the information in class. These expressions include explanations such as perceiving the lesson content as a part of daily life, explaining knowledge by using daily life events and using daily life events as lesson content which can be counted as contra directional with the first theme. In addition, students also defined the transfer to daily life, depending on its effect on learning (8.9%). It has been seen that they use expressions such as increasing persistence, better comprehension of the subject, embodied teaching. Students then gave explanations in individual interviews supportive of these answers that they gave. Examples from these explanations are given below.

Ö22: *I immediately think about how to explain or understand a subject that I have learned by thinking practically. I immediately must implement the thing that I have learned so that it can be permanent.*

Ö31: *I understand giving examples from daily life about the subject that we will transfer, I understand relating it to daily life, for example where do we use force in daily life.*

Ö33: *I perceive it as transferring the scientific concepts that we have learned, the scientific events that we have seen in class to daily life. I perceive it as using these in daily life.*

Ö41: *let it be subjects in science, or subjects related to biology or chemistry or physics; it comes to my mind that we come across these in daily life and that we should be able to associate them with daily life.*

Table 4. *Opinions of prospective teachers about the use of transfer to daily life in biology lessons in university*

Status	f	%	Lessons	f	%	Subjects	f	%						
Yes	86	85.1	General biology	47	37.8	Diseases	7	10.1						
						Systems	6	8.7						
						Nature, living and non-living beings	6	8.7						
						Plants	4	5.8						
						Environment	2	2.9						
						Animals	2	2.9						
						Blood groups	1	1.5						
						Respiration and photosynthesis	1	1.5						
						Environmental science	43	28.5		43	28.5	Environmental pollution and solution suggestion	5	7.2
			Recognizing living things	4	5.8									
			Lifecycles	2	2.9									
			Ecology	2	2.9									
			Raising environmental awareness	2	2.9									
			Using the news	1	1.5									
			World organizations	1	1.5									
			Genetics	24	15.9		24	15.9	Blood groups	3	4.4			
									Genetic structure of living beings	3	4.4			
									Judicial events, paternal cases	2	2.9			
									Relative relations	1	1.5			
									Diseases	1	1.5			
			Evolution	12	7.9		12	7.9	Function of wisdom tooth during the process	1	1.5			
									Source of life	1	1.5			
									Investigating organ	3	4.4			
			Biology laboratory	5	3.3		5	3.3	Environment observations	1	1.5			
									How systems keep the body in balance	1	1.5			
			Partly	6	5.9		6	5.9	Plant and animal collecting	2	1.3			
									Earth science	1	0.7			
Heredity	1	0.7												
Special subjects in biology	1	0.7												
Environmental science	5	3.3												
General Biology	3	1.9								3	1.9	Our environment	1	1.5
												Environmental pollution	1	1.5
Genetics	2	1.3								2	1.3	Support and movement model	1	1.5
												Diseases	1	1.5
Evolution	1	0.7								1	0.7			
No	9	8.9	-	-	-	-	-	-						
Total	101	100.0		151	100.0		69	100.0						

Table 4 contains answers on whether association with daily life is made in the biology-based lessons that the students take. General Biology, Environmental Science, Genetics, Evolution, Biology laboratory, Human Anatomy, Plant and Animal Collecting, Geography, Inheritance, Biology Special Topics are compulsory and elective biology based courses. Students mostly (85.1%) stated that there is a place to association with daily life in these lessons. They also expressed their opinions about the fact that a transient amount of

place to transfer to daily life was given (5.9%) or that it was not used at all (8.9%). It is seen that the contents of these courses and the related instructors during the lesson refer to different topics while giving place to transfer to daily life. In addition, it can be said that the instructor uses the same daily life context through different subjects while giving examples from daily life. For example, associations related to diseases seem to be used for Genetic, Evolution and General Biology topics. It can be said that transfer to daily life is used more in general biology (37.8%) and environment (28.5%) courses.

In the individual interviews done later, it is drawn to attention that there are differences in the expressions of the students. A large majority of the students stated that transfer to daily life was done in the lessons, but that this was not enough. Below are examples from the individual interviews that were done.

Ö31: *frankly speaking, there is a lot of subjects in biology but I don't think that we use transfer to daily life in the biology course that is taught at the university. I think for that I would mostly say environmental science.*

Ö25: *it is done a lot in biology lessons. Especially the subject of living beings, to begin with, we are living beings. Even the subject of nutrition that we see, carbohydrates, fats and proteins for instance and their benefits in our body. Simply what do we do when we are ill? We take vitamin C. where do we learn this? We learn it in biology lesson. It becomes easier to implement it to life after we have learned it. Or if we gain a lot of weight and if we want to lose it, we can transfer to life things like where to start from, that we would use carbohydrates less, that we would use fats less since they are deposited in the body.*

Ö44: *there is place. In laboratory for instance, we had a lesson called plant and animal collecting, it was an elective course. For instance, I learned things that wouldn't come to my mind while I collected plants and that is how I started getting with it.*

Table 5 shows the opinions of prospective teachers regarding the effectiveness of their lessons in transfer to daily life. Prospective teachers have questioned the use of transfer to daily life in terms of the lessons they have given, and they have indicated in what sense it has influenced learning. According to this, students stated that transfer to daily life is used more frequently in field education courses because they are carrying out practical activities. They thought that the high rate of association with daily life in these activities, supporting the subjects with materials, causes such as how to narrate it to a student are effective in the use of transfer to daily life. At the same time, there are prospective teachers who indicate a reason in both education and field courses (29.5%) or particularly field courses (21.9%). Particularly, for both the education and the field courses, the rate of prospective teachers who stated an opinion such as "since we learn the subject in field courses and methods and skills used in (field) education courses " is 13.9%. in the field lessons, the opinions mostly (22.8%) are that it is due to applications in laboratories, greater association with daily life and subjects being nature and human. Below are examples of individual interviews with prospective teachers.

Ö31: *I think that the education courses are more effective. The reason is this: in biology 1-2, there is more theoretical knowledge and a teacher-based education, for instance we were designing material in Material Design, we were doing somethings on our own, it was more student-based, it was more contributive to me. Whereas in special education, it was mostly real life, there were more examples given in the lesson related to daily life.*

Ö35: *both are effective. Because education courses are related on a one-to-one basis daily to students' education but I suppose field courses are more effective. After all,*

because our field is science and science is directly about daily life, place to several examples that are used in every field of my life can be given. I can say that majority is the same.

Ö41: is it easier to associate any subject of science or something that is related to the lessons we have taken in education courses? I think because it is from examples directly inside life, education courses are easier.

Table 5. *Opinions of prospective teachers on the efficacy of their lessons in transfer to daily life*

Lessons	f	%	Codes	f	%
Field education courses	51	48.6	Since it is more practical	9	11.4
			Because there is more association with daily life	6	7.6
			Since subjects are supported with materials	3	3.8
			Since it brings teaching skills	3	3.8
			Since it explains how to narrate to a student	3	3.8
			Since it is related to learning	2	2.5
			Since it is for human behaviors	2	2.5
			Since it is effective in interpersonal communication	2	2.5
			Since it takes up more place in our lives	1	1.3
			Since it appeals to every group	1	1.3
			Since it is more important in teaching	1	1.3
			Since students take active roles	1	1.3
			Since it contains solid examples	1	1.3
Both field courses and field education courses	31	29.5	Since in field courses, we learn about the topic, the methods and the skills used in training courses	11	13.9
			Since they are interrelated	5	6.3
			Since they contain implementations	2	2.5
			Because in field lessons, daily life problems include implementation to life in education	2	2.5
			Because they include the principle of learning by doing and living	1	1.3
Field courses	23	21.9	Because there is human theme in their subjects	1	1.3
			Since there are applications in the laboratory	7	8.9
			Since it related more to daily life	6	7.6
			Since the subjects are nature and human	5	6.3
			Since science subjects make one more aware	1	1.3
			Since the abstracts are supported in concrete	1	1.3
			Since more subject is focused on	1	1.3
			Since if the knowledge in these lessons is inadequate, it wouldn't be transferred	1	1.3
Total	105	100.0		79	100.0

Table 6 shows the types of factors that prospective teachers take into consideration in terms of learning while transferring to daily life. According to these views, prospective teachers care a lot (42.1%) about the position of the teacher in transfer to daily life. They have explained the effectiveness of the teacher in the class, such as being in the role of the guide / lead, knowing the subject and describing the method, giving examples or teaching of the course being in the hands of the teacher. Laboratory use, learning / teaching approaches, strategies and methods, curriculum and course book are other factors. The theme of laboratory and learning approaches seems to be a little more important. Prospective teachers have expressed their opinion that the choice of approach or method should be transferable to daily life. It can be said that the laboratory is an important factor in terms of providing more practical activities / experiments and providing practical and concrete experiences. Examples of individual interviews with prospective teachers are given below.

Ö42: *all of them are effective but because now, students are practicing in the laboratories, it attracts their attention more and its effects are greater.*

Ö36: *laboratory; because it is a place where you need to be constantly active and most of the things that you learn are practiced over there. Because of this, we learn them by doing and it becomes easier to carrying the things that we have learned by doing to daily life.*

Ö36: *in my opinion, teacher is the most effective. Because teacher is the one who uses things like textbook, method, laboratory etc. and hence he is the one who narrates it all.*

Table 6. *Prospective teachers' views on the most important factor in transfer to daily life*

Factor	f	%	Codes	f	%
Teacher	74	42.1	Since he/she is in the role of guide/lead	12	9.2
			Since he/she is the most important factor	11	8.5
			Since he/she is the one who knows the subject and explains the method	6	4.6
			Since he/she is the one who teaches the subject	6	4.6
			Since model is the teacher	5	3.9
			Since teaching of the lesson is dependent on the teacher	4	3.1
			Since he/she is the one who gives direction to knowledge	3	2.3
			Being in continuous contact	2	1.5
			Necessity to be skilled gerektiği	2	1.5
			Being the one to associate the subject	2	1.5
			Being in interaction with the student	1	0.8
Laboratory	42	23.9	Turning it into practice	11	8.5
			Enabling learning by doing and living	11	8.5
			Presence of experiments/events	3	2.3
			Concretization with experiments	3	2.3
			Enabling improvement of skills	3	2.3
			Presence of practical events	2	2.3
			Being the first environment for transfer	1	0.8
			Being important in effective learning	1	0.8
Learning attitudes that are used	36	20.5	Being the way to narrate subject to a student	5	3.9
			There should be a student-based approach	4	3.1
			Selection should be made according to the student	3	2.3
			Selected approaches being important	3	2.3
			They should be life-based approaches	2	1.5
			Containing theoretical knowledge and application	2	1.5
			They should be approaches related to daily life	2	1.5
			Material, event and model being important	2	1.5
			There should be question/answer	1	0.8
Making transfer easy	1	0.8			
Curriculum	16	9.1	Boundary of curriculum / achievements	5	3.9
			It must contain event and explanation from daily life	3	2.3
			Including how the subject progresses	1	0.8
			It should be in their preparations	1	0.8
Textbook	8	4.5	Student studying from the book	3	2.3
			Providing an opportunity to check again and again	1	0.8
			Containing a lot of examples	1	0.8
			It should a material suited to the method	1	0.8
Total	176	100.0		130	100.0

DISCUSSION and CONCLUSION

Prospective teachers attach immense importance to the use of transfer to daily life according to the findings obtained. Especially, they argue that the examples given from everyday life are more concrete and increase the permanence of information. They are justified by the examples given by their own learning experiences. Because of students considering science as a field where there are no personal or social relations, perception of science as a foreign culture is caused (Aikenhead, 2006). Therefore, it can be said that the transfer or relationship between science and daily life at school can create a positive attitude towards the science. One of the repeated criticisms based on the evidence of traditional school knowledge is the lack of relation with everyday life (Gibbs & Fox, 1999; Millar & Osborne, 1998; Osborne & Collins, 2000; Reis & Galvão, 2004; Reiss, 2000;). Especially when the limitations of learning events outside of school and the importance of association-based learning in the learning of science is taken into consideration (Yavuz Topaloğlu & Balkan Kızılcı, 2015), it is important that prospective teachers gain awareness by association and that they come to a state of being able to use it. This awareness lead future's teachers to global issues which they can use it in science lessons to teach with using daily life examples. Water purification, flood control, renewable energy, climate change or more local contexts can be used as daily life situations which effect on human life. In modern economics a major emphasis in business education has been to make the experience more authentic for students, and to instill skills that are transferable to real world applications (Cinebell & Cinebell, 2008). Grinenko, Makarova & Andreassen (2016) integrated the theoretical material with real life practice in their project and found that added value is expected to occur from graduated when employed in different companies/official services; an improved scientific competence in the regions is expected to strengthen both business and social services.

Prospective teachers pointed out the importance of transfer to everyday life, and at the same time they pointed out that the courses they had taken at university were deficient in associating to everyday life. It is especially important to indicate that they have less difficulty in the courses where association is included in the understanding of the topics. However, the value they give to transfer to daily life may also refer to the presence of other causes that positively influence their views on the use of transfer to daily life in their lessons when they become teachers. It has been a subject laid emphasis on by researchers that there is a profound relationship between the information and context to be transferred and how it should be done (Gilbert, Bulte & Pilot, 2011), but it has been pointed out by prospective teachers that it is key factor in a better understanding of the subject. Prospective teachers therefore seem to be positively approaching the use of transfer to daily life in teacher education in the field of science.

Gilbert et al. (2011) identified association with daily life as widening of the extent of learning by integrating everyday events, in addition to the learning that the students perform at school, into these learnings. The answers that the prospective teachers gave to the question of how to associate with everyday life show that they have a lot of knowledge about the concept. Most students responded with using the knowledge learned in class, or associating it or practicing it in everyday life. This description, which shows that the transfer of information is one way, is less complete than the definition of Gilbert et al. (2011). Therefore, it is suggested that more attention should be paid to reading and research in this subject, which prospective teachers attach importance to. Most of the prospective teachers have indicated that they will use the transfer to their daily life during their teaching period, which means updating and deepening their knowledge of the concept. The use of transfer to daily life has changed in biology lessons in university.

General biology and environmental science draw attention as the subjects where the rate of transfer is greatest. In addition, the contexts used in transfer can show similarities between

courses. In Altunoglu and Atav (2005) studies, teachers talked about the shortcomings in biology textbooks, they mentioned that there is little room for current information and that there is not enough association with daily life while the topics are being taught. The transfer to daily life is indicated as the result of many researches that have positive attitude towards biology lessons (Acar & Yaman, 2011; Lubben & Campbell, 1996; Rayner, 2012; Riesoco, 1995;). Therefore, regardless of the contexts used in the lessons, the transfer to daily life can be used entirely in biology-based lessons. Since the contexts used in the lessons are similar, it can be said that association with daily life can be made in all biology-based lessons. But one of the criticisms that should not be forgotten about association to everyday life is that the curriculum content is so fragmented that there may be inconsistencies in the conceptualization of learners' knowledge and this can prevent a significant mind map (Gilbert et al., 2011). Therefore, it is important that the transfers to daily life made in different courses are consistent. Otherwise, prospective teachers may be confronted with problems related to the learning of scientific knowledge, especially misconception. It should be noted that teachers have transferred their conceptual misconceptions to their own students (Çepni, Küçük & Ayvaci, 2003).

Prospective teachers seem to have a more positive attitude towards field education courses when considering the concept of transfer to daily life. This can be explained by the fact that different models in field education courses are processed for practice and the students are directed to the activities that connect between daily life and science. It is suggested that education based on specific standards and models is given in field courses, field education and practical lessons (Meriç & Tezcan, 2005), in the context of which association with daily life is an important option. It has been seen that prospective teachers have made explanations in this direction in the individual interview session. Thoughts of prospective science teachers on the course content of field lessons being tough and not addressing teacher qualifications (Demirtaş, Cömert & Özer, 2011; Şahin Taşkın & Hacıömeroğlu, 2010), may have directed them to a more positive attitude towards the field education courses. But it should not be forgotten that without the knowledge of the field it is impossible for the teacher to produce ideas or practice (Çepni et al., 2003). Therefore, it is suggested to teach the knowledge in the field lessons as well as how to use this information or to practice in which practical areas it will work.

Prospective teachers see teachers as the biggest factor in using the transfer to daily life in the classroom. Laboratory use and learning approaches draw attention as the other factors. The common feature of these factors is the inclusion of active learning activities and practical activities, which are supported by the opinions of the teacher candidates. The fact that the teacher is mentioned as the most important factor is because he/she is considered as the decision mechanism in education. Demirtaş et al. (2011) concluded that teacher candidates had low self-efficacy especially in the areas of mathematics and science. Prospective teachers' deficiencies in the field information can lead to this situation. It should be taken into consideration that the different applications mentioned earlier in the field information lessons will help teacher candidates in this respect and positively affect their distrust about providing student participation (Demirtaş et al., 2011). Sumarni, Sudarmin, Wiyanto and Supartono (2016) stated in the study that they have done parallel to the results of this study that science learning that takes place as a result of everyday life events and phenomena being related to concepts, processes and contexts with scientific knowledge will be more meaningful and contextual.

It becomes more important that prospective teachers make up for their shortcomings in their science field knowledge, that the prospective teachers at university give more place to association with daily life in the field courses that they have taken, that they lay a stronger emphasis on the concept of association with everyday life in the training courses that they

have taken at university and that they improve themselves to the level of being able to make an association between the events occurring in their surroundings and science subjects. It is suggested that, especially in pedagogical subject areas such as special teaching method, emphasis is placed upon learning of models which are based on real life just like problem based learning and which provides improvement of skills in this context (Akçay 2009).

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