

Full Length Research Paper

The problem-based learning process: Reflections of pre-service elementary school teachers

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This study aims to identify the benefits acquired by third-year pre-service elementary school teachers participating in a problem-based learning process in social studies education, the issues they encountered in that process and those they are likely to encounter, and their feelings about the process. Semi-structured interviews were used as one of the qualitative research methods. During the 2014 to 2015 academic year, problem situations related to the subjects of “Historical Values” and “Being a Child in Africa” were studied for five weeks through problem-based learning in the social studies education course. At the end of the process, 16 pre-service teachers with perfect attendance and active participation were interviewed. The interviews were recorded on tape recorders. The obtained data were analyzed via content analysis. The results indicate that problem-based learning (PBL) offers positive reflections/benefits to pre-service elementary school teachers in terms of learning, democracy education, and skills acquisition in social studies education classes. Although one participant considered the course unproductive, the pre-service teachers mostly had positive opinions regarding the problem-based learning process.

Key words: Problem-based learning (PBL), benefits, issues, social studies, elementary school teacher.

INTRODUCTION

Social studies is one of the most important courses used to foster the type of individuals who are equipped to meet the needs of our age. Social studies courses have been defined several times in the literature. The US National Council for the Social Studies (NCSS) defines social studies as follows: “The integrated study of the social studies and humanities to promote civic competence” (Savage and Armstrong, 1996; Öztürk, 2012).

In Turkey, social studies courses are defined as: “an elementary school course, formulated with the understanding of collective education, which embodies

such social sciences as history, geography, economics, sociology, psychology, philosophy, political studies and law as well as citizenship subjects, involves uniting all learning areas under one unit or theme, and includes the examination of humans’ interactions with their social and physical environment within the context of past, present, and future” (MoNE, 2005).

Doğanay (2004) defines social studies as “an area of study which, by utilizing the content and methods of social sciences and other humanities, handles humans’ interactions with their social and physical environment

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within the framework of time dimension and in an interdisciplinary approach in order to raise reasonable, skilled, and democratic citizens who are equipped with fundamental democratic values one needs to survive in a globalizing world.”

The common point in all these definitions is the role of social studies in raising democratic citizens. Universal goals should be attained for a democratic society. These goals are:

1. Knowledge acquisition
2. Learning how to use information analytically / processing information
3. Having proper attitudes, values, and feelings / examining beliefs and values, and
4. Taking action/playing an active role as a citizen (Barth and Demirtaş, 1997).

However, under today's conditions, knowledge acquisition cannot be considered adequate in the teaching of social studies. Indeed, socio-economic changes and developments, as well as developments and changing approaches in the educational sciences, have brought about the need for constant change and transformation of social studies curricula.

In the social studies curriculum put into practice by the Ministry of National Education in Turkey in 2005, the aim was for students to transcend knowledge, use knowledge in new settings, transform knowledge into skills, form their own values, and acquire the attitudes and behaviors of a responsible citizen (MoNE, 2005).

How can this be realized? All the practices expected to be carried out in this course aim to allow students to use knowledge, position them to think, and help them to become social and responsible students whose behaviors reflect what they have learned. Therefore, constructivist learning theory and methods, techniques, and tools that can ensure the active engagement of students have frequently been brought to the agenda. In this regard, problem-based learning (PBL) attracts the attention of educators as an approach that can be adopted in social studies education.

Problem-based learning was first developed by John Dewey in the early 1900s, and was first used in the area of medicine (Rhem, 1988; Chapin and Messick, 1992). Although PBL has a long history, it was first used at the University of McMaster in Ontario, Canada in 1969 and later on the number of universities using this method increased (Checkley, 1997). This approach, apart from in the area of medicine, also gained popularity in engineering, architecture, economics, social studies, and hence education in the 1980s (Azer, 2009; Hansen, 2006; Reynolds, 1997). PBL began to be used in elementary and secondary education in the 1990s (Sage, 1996 cited by Koçakoğlu, 2010). It has become an increasingly popular subject in the literature and has

been addressed in studies since the curriculum regulations of 2005 in Turkey.

By means of the featured PBL, students confront a complex situation or case, and they undertake or become responsible for the situation. A program is developed regarding the problem so that students engage in a proper learning process in which they can grasp correlations. Teachers select a real life problem and direct various questions to students. Then, a learning environment is created in which teachers urge students to engage in a self-struggle of learning and offer them cognitive guidance (Karen and Downing, 2013; Loyens et al., 2011; Tan, 2003; Torp and Sage, 2002).

Schuncke (1988) identifies three main problem-solving approaches: exploration, inquiry, and decision making. He puts the research model steps of these approaches in order as follows:

1. Determining the problem
2. Formulating hypotheses
3. Planning the data gathering process
4. Gathering data,
5. Examining, analyzing, and evaluating data
6. Rejection or approval of the hypotheses, and (vii) making a generalization.

The process elaborated earlier is not a process in which one needs information to define and solve the problem but is contented with the existing information. It is a process in which gathered information needs to be reorganized so that it serves the solution to the problem; that is, there is a need for thinking, planning, discussion, review, and re-informing.

Being “informed” in the information age means developing learning capacities, being able to use information, obtaining new skills, and turning this into a consistent form of behavior (Yıldırım, 2001). All the skills obtained should respond to the needs of both the individual and society. On the one hand, these skills should organize and harmonize the relationship between the individual and society; on the other hand, they should equip the individual with the cultural and psychological competence that they need in order to be at peace with themselves, with society at large, and with the universe (Balay, 2004).

Social studies classes aim not only to raise citizens of today, but to achieve this via the most effective means. Such practices as PBL can be utilized to gain the skills required in social studies classes. Teachers' and pre-service teachers' opinions about this approach appear to be important in achieving the active use of PBL in classroom settings.

The present study, in considering the social studies course content, organization, and goals, aims to identify pre-service teachers' benefits, experienced/potential issues, and feelings about problem-based learning

implemented in social studies education classes. To this end, an attempt was made to answer the questions below:

- i. What are the pre-service elementary school teachers' positive reflections/benefits concerning the PBL process conducted in social studies education classes?
- ii. What are the pre-service elementary school teachers' negative reflections/issues concerning the PBL process conducted in social studies education classes?
- iii. How do the pre-service elementary school teachers feel about the PBL process conducted in social studies education classes?

METHODOLOGY

This is a case study. Case study, which is a qualitative research method, was employed in this study. The most prominent aspect of a case study is the thorough investigation of a single or multiple cases. The components of a new case (for example, setting, individuals, cases, processes) are explored and focus is placed on how they affect or are affected by the present situation (Yıldırım and Şimşek, 2013).

Semi-structured interviews were carried out with the pre-service teachers. In this method, interviewers prepare the questions to be asked before the interview; however, they can change the flow of the interview by asking different questions or sub-questions and they can encourage the interviewee to elaborate on or explain their answers. If the interviewee replies to certain questions within another question, then these questions can be omitted. Therefore, semi-structured interviews offer flexibility to interviewers and also enable interviewees to actively participate in the interview and give unconstrained responses (Türmüklü, 2000; Kuş, 2003).

In this study, an attempt was made to determine the pre-service social studies education teachers' opinions about the PBL process conducted in social studies education classes through semi-structured interviews.

Study group

This study handles the PBL process conducted in social studies education classes at the Department of Elementary Education of faculty of education through a single case design. For this reason, it used convenience sampling. Convenience sampling (also known as Haphazard Sampling or Accidental Sampling) is a type of nonprobability or nonrandom sampling whereby members of the target population that meet certain practical criteria, such as easy accessibility, availability at a given time, or the willingness to participate, are included for the purpose of the study (Dörnyei, 2007).

Before the determination of the sample, 50 third-year pre-service teachers from the faculty of education were given theoretical information during the 2014 to 2015 academic year about how to use PBL in social studies education classes and they were engaged in hands-on activities. Later on, 16 voluntary pre-service teachers who actively participated in these classes formed the study group of the study and attended semi-structured interviews. Ten out of 16 members of the group were female students, while the remaining 6 were male students.

In the present study, criterion sampling, which is a purposive sampling method, was adopted. In this sampling method, the relevant criterion can be developed by the researcher (Yıldırım and

Şimşek, 2013). The criterion of the present study was taken as the active participation of pre-service teachers in both PBL processes. The sample size was kept small so that more detailed information could be obtained by using qualitative data gathering techniques more efficiently. For the sake of research ethics, the participants' names were kept confidential. Thus, the participant pre-service teachers were called Pre-service Teacher 1, Pre-service Teacher 2, Pre-service Teacher 3, and so on.

The aim of the study was not to generate general theories or generalize findings to a larger sampling. On the contrary, its aim was to reveal the opinions of the pre-service teachers from the aforementioned-mentioned department regarding the case mentioned.

Implementation of PBL/procedure

The entire implementation process lasted for 15 h. Initially, detailed information was gathered on the issue and research was done on various sources. As social studies education is a course in which different problems/cases can be handled due to its content, two convenient problems were chosen and the steps of PBL were planned. One researcher prepared a work file to manage and evaluate the PBL session. The pre-service teachers were informed that the PBL would be held in five-week period (two different processes lasting three weeks and two weeks respectively). The pre-service teachers were given a detailed presentation about PBL. The steps and characteristics of the process were explained with the help of PowerPoint presentations. The pre-service teachers were divided into groups of five (social studies education classes last for three hours a week in higher education). Implementation was carried out in five block classes without any breaks (three + two sessions). In each process, the steps followed are presented in Table 1.

First PBL process

To help the students feel the problem, a PowerPoint presentation was prepared by using articles taken from newspapers at different times. Some headlines from the newspapers were: "Karun to be Robbed", "I said. They didn't Care," "A Great History Exploded," "In a Police Operation, A 3600-Year-Old Privy Seal is Found." All the news was about the failure to protect historical works in Turkey. After examining and discussing the news, the pre-service teachers defined the problem. The groups considered choices related to the problem, gathered information from different sources, and brought this information to the classroom. They prepared a report on the reasons for the failure to protect historical works in Turkey and made short oral comments. Evaluation was also made on the process. This took a total of two weeks.

Second PBL process

A photo titled "*Being a Child in Africa*" and sections from two reports constructed through an internet search were presented to the pre-service teachers as the problem situation so that they could feel the problem. In the photo, there was an unhappy, underweight child with no clothes on and behind the child there was a barren landscape, representing famine and poverty. After discussing the photo using the 5W1H questions, the pre-service teachers were asked to read the following reports as presented in Table 2.

The pre-service teachers tried to detect the problem by combining their inferences from the photo and reports. Meanwhile, they were asked to draw a fishbone diagram and write the

Table 1. Steps followed.

I	II	III	IV	V	VI	VII
Feeling the problem →	Determining the problem →	Formulating hypotheses →	Gathering data →	Data analysis →	Evaluation of the hypotheses →	Result

Table 2. Questions read.

Information report I

World Health Report

Barry Mason

12 January 2004

Worldwide an estimated 10 million children are dying unnecessarily every year. Most of these preventable child deaths occur in developing countries—half in Africa. Of the 20 countries with the highest child mortality rates, 19 are in Africa, the only exception being Afghanistan.

Rates of child mortality in some countries are also increasing. While the global trend is for child mortality to decline, 16 countries, of which 14 are in Africa, have higher rates than in 1990. In nine countries, of which eight are in Africa, the child mortality rate is higher than those recorded over 20 years ago.

Source: <https://www.wsws.org/en/articles/2004/01/whor-j12.html> accessed on 15.09.2009

Information report II

Ann M. Veneman/UNICEF Executive Director

02 June 2008

“Community-level integration of essential services for mothers, newborns and young children, and sustainable improvements in national health systems can save the lives of many of the more than 26,000 children under five who die each day”.

Source: http://www.unicef.org/media/media_42643.html accessed on 15.09.2009

sentences they agreed upon on the head of the fish. The problem sentences of the groups were such as “What are the reasons for the rising child death rates in Africa?” First, they attempted to reply to this question themselves and took notes on the bones of the fish. After that, they conducted research on the validity of the reasons they had come up with and checked the accuracy of their predictions.

Each group prepared their own report with the help of the sources they had used. At the beginning of the process, the pre-service teachers were assigned as “United Nations Security Council Employees.” At the end, they were asked to prepare a one-paragraph message for the Secretary General of the United Nations Security Council to read to the World about the reasons for the death of African children. The groups gave presentations about the process and read their messages to the class. They also actively participated in the evaluation process through both self-evaluation and peer evaluation. The second PBL process took a total of three weeks.

Gathering data

Data were collected via semi-structured interviews. The best data collection method for finding answers to the research questions of the study was considered to be the interview technique. The interview technique is very useful in obtaining information regarding the experiences, attitudes, opinions, complaints, feelings, and beliefs of interviewees (Briggs, 1986).

The interviews were conducted by using the pre-defined interview form prepared for the present study. In order to check the content validity of the interview form, it was reviewed by two social studies teachers and two elementary school teachers, who were specialized in the area. In addition, pre-interviews were carried out with two pre-service teachers. In this way, it was checked whether the pre-service teachers understood the questions on the form or not.

After that, some of the interview questions were refined. Interviews were carried out with each pre-service teacher separately and were recorded on tape recorders. In this way, data loss or inaccurate data collection was prevented. An attempt was made to ensure that the pre-service teachers would not be affected by the researcher when answering questions. The interviews took 5 to 13 min. Each participant engaged in an average eight-minute-long interview. All the interviews, taking 143 minutes in total, were recorded on tape recorders. Later on, the records were transcribed and converted into Microsoft Word documents. These texts were then given to the participants for them to confirm the completeness and accuracy of the documents. In this way, data reliability was ensured.

Data analysis

Data were subjected to content analysis. Content analysis is described as a repeatable and systematic technique in which some words of a text are summarized under smaller content categories in

Table 3. Pre-service teachers' opinions about PBL.

Theme	Code	Frequency (f)	Percentage
Positive reflections	Benefits for learning	81	27.4
	Benefits for democracy education	75	25.3
	Benefits for skills acquisition	83	28.1
Negative reflections/Issues	Issues with problem situation	10	3.3
	Issues with data gathering tools	5	1.7
	Issues with group work	15	5.1
	Issues with possibilities	11	3.7
Emotional status	Positive feeling	15	5.1
	Negative feeling	1	0.3
	Total	296	100

accordance with some codes that are based on specific rules (Büyüköztürk et al., 2008).

The main procedure in content analysis is to unite the similar data in the study around certain concepts and themes, and organize them in a way readers can understand (Yıldırım and Şimşek, 2013). Raw data from the interviews were coded and categories were identified. These data were then classified and made meaningful under these categories.

Another specialist who had a PhD in elementary school education was consulted for help in coding and categorizing. Based on the research problem and purposes, unnecessary codes were omitted and new codes were added in appropriate parts. In naming the categories, the researcher cooperated with the other specialist. Conflicts were resolved by means of discussion, thereby achieving a high level of agreement on all the codes and categories (Tavşancıl and Aslan, 2001).

Defined sub- and super-categories were modeled by giving due consideration to the relationships between them. The qualitative data were made quantitative by calculating frequencies and percentages. The resultant data consisted of 41 pages. At the end of this process, three main categories, nine sub-categories under these three main categories, and 51 sub-categories under these nine sub-categories were identified. The main categories included positive reflections/benefits concerning PBL, negative reflections/issues concerning PBL, and feelings about the PBL process.

The matters of "agreement" and "disagreement" between the researcher and other specialist were identified. The percentage of agreement, which is considered to represent the reliability of the research, was found to be 90% by using the reliability formula suggested by Miles and Huberman (1994).

FINDINGS

In this section, the findings of the research are organized based on the order of questions in the sub-purposes of the study. The participating pre-service teachers' opinions fell under three titles: positive reflections/benefits concerning PBL, negative reflections/issues concerning PBL, feelings about the PBL process. These titles are presented one by one in

the table below and some quotes are also given from the pre-service teachers' comments so that the (internal) reliability of the study is ensured and readers can better comprehend the quantitative data.

It is seen that all the participant pre-service teachers mentioned the positive aspects of PBL. As shown in Table 3, the pre-service teachers' positive reflections fall under three titles: benefits for learning, benefits for democracy education, and benefits for skills acquisition.

Positive reflections/benefits

Those who mentioned the benefits of PBL for learning, as shown in Table 4, stated that their motivation/interest/curiosity grew (16 participants); they learned through hands-on/active engagement (16 participants); they gained consciousness on the issues (12 participants); they learned by making connections to real life (11 participants); they gained enduring knowledge (10 participants); they exchanged information (10 participants); they gained concrete knowledge (2 participants); they engaged in interdisciplinary learning (2 participants); they learned how to solve their problems (2 participants). In the table below, some quotes are given from the pre-service teachers' answers. All the pre-service teachers stated that their eagerness for learning increased during the PBL process. For example, one of them uttered the following sentences regarding how this process enhanced their motivation:

"... as one explores, his sensitivity increases and also the eagerness for learning, interest, and motivation increase. As a result, the class environment changes. One desires to learn and dependence on the teacher declines." [Pre-service Teacher 12].

Table 4. The pre-service teachers' benefits in terms of learning in the PBL process.

Benefits of PBL for learning	Frequency (f)	Percentage
My motivation/interest/curiosity grew.	16	19.8
I learned through hands-on/active engagement.	16	19.8
I gained consciousness about the issues.	12	14.8
I learned by making connections to real life.	11	13.5
I gained enduring knowledge.	10	12.3
I exchanged information.	10	12.3
I gained concrete knowledge	2	2.5
I engaged in interdisciplinary learning.	2	2.5
I learned how to solve my problems.	2	2.5
Total	81	100

Table 5. The pre-service teachers' benefits in terms of democracy acquisition in the PBL process.

Benefits for democracy acquisition	Frequency (f)	Percentage
Respect	16	18.8
Collaboration	16	18.8
Equality	16	18.8
Tolerance	15	17.6
Responsibility	9	10.6
Justice	6	7.1
Honesty	4	4.7
Freedom	2	2.4
Rule of law	1	1.2
Total	85	100

The pre-service teachers often emphasized that they achieved enduring learning. For instance, one of them made the following remarks about the endurance of the process when compared to traditional methods:

"In traditional methods, students have nothing. We are given both the causes and effects. Nobody encourages thinking. During the exam season, we just study questions. There is no benefit or endurance. In this approach, however, as I previously said, we handle the problem as a problem of our own and so gain more benefits (Pre-service Teacher 5).

Another frequent answer of the pre-service teachers related to the exchange of information with one another. One of the teachers said:

"We did research, made observations, and through group work exchanged information with our colleagues" (Pre-service Teacher 3)

In addition, two pre-service teachers expressed that they

learned how to solve their problems. One regarded this as the most important benefit of the process:

"To me, the most important benefit of the process is that students are able to offer alternatives on daily life cases and situations and they are also able to solve their problems on their own" (Pre-service Teacher 13)

The participants deemed the benefits of democracy acquisition as: respect (16 participants), collaboration (16 participants), equality (16 participants), tolerance (15 participants), responsibility (9 participants), justice (6 participants), honesty (4 participants), freedom (2 participants), and rule of law (1 participant). Some quotes from the pre-service teachers' answers are presented in Table 5.

As shown in Table 5, all the pre-service teachers participating in the study agreed that the process contributed to the development of respect, a value of democracy. The participants were of the opinion that PBL would develop respect for different opinions, human rights, the environment, and individual differences. One

of the participants added in their remarks that they came to realize the differences in points of view from region to region, and that they had to show respect for this:

"...one notices something, oh, how different his point of view is with respect to mine, but anyway I have to respect him; because, although we live in the same country, we are from different regions. Really, East and North... for example, I'm from the Black Sea region. I saw how different the Black Sea and Central Anatolian aspect to the issue was. I said oh, there is nothing I can do about it; this is the way he has grown up, I have to respect that" (Pre-service Teacher 14).

The pre-service teachers said that they acted fairly throughout the process, and that the process encouraged just behavior. One of the participants' remarks in which they emphasized justice, tolerance, respect, and collaboration is worthy of attention:

"We gave rights to everyone, this was a just behavior. Our colleagues shared their comments all the time. We were expected to select a leader. Everyone used their right to vote and we selected a leader. This was also a just act. There was tolerance. Nobody broke the heart of another. We all worked for the solution to the problem and nobody broke the heart of another. This was a very important point. Everyone respected each other. We collaborated because we worked together as a group to solve a problem. We had to do this together. And there was collaboration" (Pre-service Teacher 4).

A pre-service teacher said that the issue had an aspect related to the rule of law:

"... as it is a matter about our cultural values, it is associated with respect for the environment and rule of law. As it involved smuggling, justice was neglected. In other words, it was something that was done in illegal ways; therefore, it was also about justice..." (Pre-service Teacher 1).

The participants thought that the benefits related to knowledge acquisition were as follows: research (14 participants), communication (13 participants), problem solving (9 participants), critical thinking (8 participants), decision making (7 participants), empathy (6 participants), creative thinking (6 participants), social participation (5 participants), self-confidence (3 participants), planning (2 participants), expressing oneself freely (2 participants), language skills (2 participants), using time effectively (1 participant), entrepreneurship (1 participant), making inferences (1 participant), predicting the future (1 participant), understanding time and chronology (1 participant), and consistency (1 participant). Some quotes from the pre-

service teachers' answers are presented in Table 6.

According to Table 6, the most frequently mentioned skill that the pre-service teachers believed to be developed by the process was research skills. For example, a participant's statement that it was the first time they had done research willingly is worthy of attention:

"... I did research for the first time. I was really curious, that is my curiosity arose. I went and did research, came back, and shared my findings with my friends. I prepared a text here and we formulated the hypotheses together. And, in fact, I warned friends who did not want to contribute, saying 'we should try to do something together'" (Pre-service Teacher 4).

The pre-service teachers also often stated that their empathy skills flourished in the process. One said that they put themselves in the shoes of an individual who was to deal with a problem:

"When I think about the process, I feel like my empathy skills have flourished" [Pre-service Teacher 1]. One of the participant pre-service teachers said that the process also enhanced consistency: *"...consistency, there is also consistency: as you research, you also gain proof and it becomes consistent with your opinion"* (Pre-service Teacher 16)

Negative reflections/issues

Negative reflections concerning the PBL process fell under four categories. These issues were related to the problem situation, gathering data, group work, and possibilities. Regarding the problem situation, the most frequent answer was that it might not be applicable to all subjects (4 participants), and the least frequent answer was that the scope of the subject was too large to handle (1 participant). Regarding the gathering of data, the most frequent answer was that information sources might not be found (3 participants) and the least frequent answer was that the scope of the subject was too large to handle (1 participant). Regarding group work, the most frequent answer was that not all group members would fulfill their own duties (5 participants) and the least frequent answer was that teachers might not be successful in guidance (2 participants). Regarding the possibilities, the most frequent answer was that school facilities might not be sufficient (9 participants) and the least frequent answer was that the class size might be too large (1 participant) and that a time shortage might occur (1 participant) (Table 7). The most frequently discussed challenge among pre-service teachers was that PBL might not be applicable to all subjects (4 participants). For example, one participant regarded this as the biggest challenge of PBL:

Table 6. The pre-service teachers' benefits in terms of skills acquisition in the PBL process.

Benefits of skills acquisition	Frequency (f)	Percentage
Research	14	16.9
Communication	13	15.7
Problem solving	9	10.8
Critical thinking	8	9.6
Decision making	7	8.5
Empathy	6	7.2
Critical thinking	6	7.2
Social participation	5	6.1
Self-confidence	3	3.6
Planning	2	2.4
Expressing oneself freely	2	2.4
Language skills	2	2.4
Using time effectively	2	2.4
Entrepreneurship	1	1.2
Making inferences	1	1.2
Predicting the future	1	1.2
Consistency	1	1.2
Total	83	100

Table 7. The pre-service teachers' negative reflections/limitations concerning the PBL process.

Negative reflections/ limitations	Frequency (f)	Percentage	
Issues with the problem situation	It might not be applicable to all subjects	4	9.5
	Not everyone might be interested in the problem	3	7.1
	The problem might not be appropriate for students' levels.	1	2.4
	Everyone might have a different understanding of the problem	1	2.4
	The scope of the subject was too large to handle	1	2.4
Issues with gathering data	Information sources might not be found	3	7.1
	Methods of research might not be known	1	2.4
	It may not be possible to do sufficient research	1	2.4
Issues with group work	Not all group members would fulfill their duties	5	11.9
	There might be too much noise	5	11.9
	Each individual has a different point of view/inference can cause problems	3	7.1
	Teachers might not be successful in guidance	2	4.8
Issues with possibilities	Families might not be good at guidance	1	2.4
	School facilities might not be sufficient	9	21.4
	Class size might be too large	1	2.4
	Time shortage might occur	1	2.4
Total	42	100	

"...we may not be able to directly adapt it to all subjects. I mean, we cannot tailor it in accordance with all subjects. This is the biggest problem..." (Pre-service Teacher 3).

The only pre-service teacher who was of the opinion that the large scope of the subject matter might be a challenge expressed his opinion as follows:

“(the) limits of the subject should be defined; otherwise the subject could drift away from its core and therefore it is important to set the limits of the subject. Limiting the scope of the subject is important in reaching information” (Pre-service Teacher 12).

The pre-service teachers also stated that there might be some issues in gathering data. The most frequent issue expressed by the pre-service teachers was that information resources might not be found (3 participants). For example, one participant said:

“We couldn’t find much information about the subject matter because, you know, there weren’t many books on the subject. There’re only newspaper articles and only some old pieces of news online; laws are not enough. So we were so limited, but, I mean it was because of the subject. If it had been another subject, we could have done more research” (Pre-service Teacher 14)

Regarding group work, the most frequently articulated issue was that not all group members would fulfill their duties (5 participants). For example, one participant stated the following:

“... from the perspective of group work, some members of the group might be more dominant and some might be more passive and some might not have fulfilled their own duties...” (Pre-service Teacher 2).

The least frequently mentioned issues were teachers’ (2 participants) and families’ (1 participants) failure to provide guidance. For example, one of the pre-service teachers expressed the teacher-related guidance issue as follows:

“... it cannot be achieved without a good teacher. Friends would be disconnected. In this case, as there would be no classroom management, I don’t think it would be a productive process” (Pre-service Teacher 4).

A pre-service teacher, on the other hand, mentioned the family-related aspect:

“Only in families... in the new education system, teachers are just guides. Similarly, parents should also only be guides. They should not carry out the whole task themselves” (Pre-service Teacher 6)

Nine pre-service teachers indicated that schools in which PBL practice is conducted might lack proper facilities. One of them said:

“Possibilities, school facilities, and classroom facilities can be added. If students, perhaps, are not, at that time, in a good condition either financially or psychologically,

Table 8. The pre-service teachers’ feelings regarding the PBL process.

Feelings	Frequency (f)	Percentage
Positive feeling	15	93.8
Negative feeling	1	6.2
Total	16	100

we then may not be able to achieve the desired productivity” (Pre-service Teacher 4).

Regarding possibilities, one participant thought shortage of time might pose a challenge. Both large classroom size and shortage of time were regarded as issues (1 participant):

“For example, some classes are too crowded. I mean, if the class size is like 60 people, it is not really possible to apply this. I mean, we may run short of time. There are 40 minutes, but 60 students. It is not applicable” (Pre-service Teacher 1).

Feelings

The reflections of the PBL process on feelings fall under two categories. It is seen that most of the participant teachers had positive feelings (15 participants). There was only one participant who, in addition to positive feelings, had some negative feelings. Table 8 presents the findings concerning feelings. As shown in Table 8, the pre-service teachers reported finding PBL fun, liked the group work, felt curious when doing research, and were happy. For example, one participant made the following statement about the process:

“Yes, certainly, about pleasure, I can say as it is group work, one is not overloaded with excess information, but instead collaborates. This is the enjoyable part of it...” (Pre-service Teacher 8).

One participant, on the other hand, expressed her negative feelings due to leaving all responsibility to the students, the group work, and noise as follows:

“I feel it is like the teacher isn’t there and as if nobody learned anything..., ... I mean, it is a little bit frivolous, I feel...Leaving all the classwork to students does not feel, I don’t know, right. It is like wasting the class time” (Pre-service Teacher 8).

The fact that only one participant had negative feelings shows us that most of the time pre-service teachers enjoyed PBL and had positive feelings.

CONCLUSION AND RECOMMENDATIONS

The pre-service teachers' reflections on the PBL process in social studies education appeared in three main categories: positive reflections/benefits, negative reflections/issues, and feelings.

Their positive reflections on the process fell under the categories of learning, democracy education, and skills acquisition. Their reflections on learning were increased motivation/interest/curiosity, learning through hands-on/active engagement, gaining consciousness about the issues, learning by making connections to real life, gaining enduring knowledge, exchanging information, gaining concrete knowledge, engaging in interdisciplinary learning, and learning to solve problems. Their reflections on democracy education focused on the development of respect, collaboration, equality, tolerance, responsibility, justice, honesty, freedom, and rule of law. Their reflections on skills acquisition, on the other hand, concentrated on the acquisition of skills concerning research, communication, problem solving, critical thinking, decision making, empathy, critical thinking, social participation, self-confidence, planning, expressing oneself freely, language skills, using time effectively, entrepreneurship, making inferences, predicting the future, and consistency.

The present study indicates that many pre-service teachers consider PBL useful. The findings of the study show that PBL also influences learning, democracy education, and skills acquisition. The fact that the findings of the study are positive in general is also compatible with the results of other studies carried out in Turkey on social studies (Baysal et al., 2011; Deveci, 2002), science (Akinoğlu and Özkardeş-Tandoğan, 2006; Bayrak, 2007; Gök and Silay, 2008; Tatar et al., 2009), and mathematics (Biberici and Başer, 2012), reporting that PBL arouses positive feelings in students.

The related literature in Turkey and PBL studies worldwide reports that skills are developed in PBL; however, in each study it was seen that one or more skills are developed through PBL. For example, there is a wide range of research proving that PBL has positive effects on the following skills: collaboration skills (Akpınar and Ergin, 2005), collaboration and critical thinking skills (Cantürk-Günhan and Başer, 2009b), collaboration, communication, and problem solving skills (Sümbül et al., 2007; Tatar et al., 2009), communication skills (Budak et al., 2009), research skills (Uluyol, 2009), communication, research, problem solving, and self-management/self-efficacy skills (Cantürk-Günhan and Başer, 2009a), problem solving skills (İnce-Aka et al., 2010; İnel and Balım, 2010), critical and creative thinking skills (Yenilmez and İşgüden, 2007), creative thinking skills (Yaman and Yalçın, 2005a), self-management/self-efficacy skills (Kaptan and Korkmaz, 2002; Yaman and Yalçın, 2005b).

In addition, Norman and Schmidt (1992) and Haron and Major (2004), dealing with students' perspectives on PBL, revealed that this process develops the problem-solving, research, and collaboration skills of students. Boud and Feletti (1997) discovered that PBL boosts students' skills in communication, accessing and using research sources, and engaging in group work. Hendry et al. (2003) as well as Chin and Chia (2004) also achieved similar results in their studies. Shepherd (1998) in an empirical study, detected that PBL increased creative thinking skills in his experiment group.

In this sense, the present study yielded worthwhile results in that it brought together the findings of many different studies. Using PBL in social studies education is useful as it can enable most of the benefits that are desired to be taught in the curriculum to be achieved simultaneously. In social studies classes, the acquisition of democratic values is important. In Turkey, the acquisition of citizenship values is ensured through social studies education. It is important that social studies classes help raise democratic individuals.

The pre-service teachers had negative reflections on PBL related to the problem situation, gathering of data, group work, and possibilities. According to them, the following can be regarded as problems of the PBL process: PBL might not be applicable to all subjects, not everyone might be interested in the problem, the problem might not be appropriate for students' levels, everyone might have a different understanding of the problem, the scope of the subject might be too large to handle. As to the gathering of data, that information sources might not be found, that methods of research might not be known, and that it may not be possible to do sufficient research can be deemed as issues, according to the pre-service teachers. When it comes to group work, they think the fact that not all group members fulfill their own duties, that there might be too much noise, that each individual has a different point of view/inference, that teachers might not be successful in providing guidance, and that parents might not be good at providing guidance could be regarded as issues. In regard to possibilities, the pre-service teachers noted the following issues: school facilities might not be sufficient; class size might be too large; time shortages might occur.

In their study titled "A Qualitative Evaluation of the Problem-based Learning," Biberici and Başer (2012) aimed to define the opinions of education directors and students regarding the process at faculties where problem-based learning was used in mathematics classes. At the end of the study, it was found that the PBL process enhances collaboration, communication, problem solving, and research skills. Their findings are compatible with the findings of the current study in that they concluded that the process would involve such problems as poorly-prepared scenarios, lack of research competence, lack of group harmony, lack of expert

education directors, and shortage of time as its negative reflections.

In their study titled “*PBL in the Era of Reform Standards: Challenges and Benefits Perceived by Teachers in One Elementary School*,” Nariman and Chrispeels (2015) attempted to explain the benefits and challenges of a PBL-based program they had implemented in a summer school for three weeks. According to the results of that study, although the students helped each other and learned from each other through collaborative group work, there occurred some challenges.

In some classes, it was seen that all the responsibility was undertaken by just one or two students, and not all students took on the research duty. Hence, there was no equality in roles and responsibilities. Moreover, it was seen that the teachers lacked proper strategies to overcome such challenges. They complained about the high levels of noise, while the students had difficulty listening to their group mates. It was also stressed that there might also be some difficulties in finding an appropriate problem.

Therefore, the findings of the present study are consistent with the study described, as it concluded: “*Not all group members would fulfill their own duties*” and “*there might be too much noise.*” Participants’ feelings about PBL fell under two categories. The pre-service teachers were seen to have positive feelings most of the time. İnel and Balım (2010) report that the participants of the PBL process enjoy themselves a lot, and take pleasure in participating in the process.

Again, Uluyol (2009) concluded that learners enjoy learning in this approach. Two limitations of the study can be mentioned. The fact that the participant pre-service teachers did not have prior PBL experience can be considered the first limitation of the study. The second limitation, on the other hand, is the fact that interviews with the pre-service teachers were quite short in duration (5 to 13 min.). In light of the findings of the present study, the following recommendations can be suggested:

1. In view of the positive results about learning, PBL practices can be employed more frequently in order for pre-service teachers to participate eagerly in classes, learn in connection with current problems and thus real life, experience problem solving, and enhance their skills.
2. PBL can be used as frequently as possible to build positive attitudes towards social studies education classes.
3. In view of the negative findings of the research, PBL practitioners can be recommended to be sensitive in finding a suitable problem that is related to real life, check the sources where data can be gathered beforehand, and take challenges and possibilities into consideration as much as possible so that the program becomes more successful.

4. In the present study, although the participant pre-service teachers were informed about PBL before the process began, they were not experienced in PBL use. Thus, it can be recommended for similar research to be conducted with experienced pre-service teachers and the results compared with the present study.

5. As the present study was conducted in two processes that lasted five weeks, it can be recommended for similar research to be conducted over a semester-long or year-long time period. Then, it can be checked whether the results are the same or not.

6. The researchers, who want to work on PBL, can analyze the development level of other skills, which are not included in this study, as metacognition and reflective thinking on this approach.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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