

Opinions of Prospective Social Studies Teachers on the Use of Information Technologies in Teaching Geographical Subjects

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Use of information technologies in the field of geography, one of the important disciplines that comprise the social studies course, contributes to rendering abstract phenomena and concepts concrete in terms of primary education students, thereby increases their interest in social studies. In this context, the basic purpose of this study is to evaluate the use of information technologies in teaching geographical subjects within the scope of the social studies course. The semi-structured interview technique from among the qualitative research approaches was used, and additionally a content analysis was conducted in the study. The data were collected through interviews with 20 prospective teachers, who studied at the Social Studies Teaching Program in the 2006-2007 academic year, on voluntary basis. Numerical analysis and descriptive analysis techniques were used in the analysis of the research data. According to the results obtained, prospective teachers were acquainted with the computers, the Internet and projectors the most from among the information technologies, and think that these technologies were utilized at schools and teacher training programs. Furthermore, the prospective teachers, who consider that biggest reason for inadequate use of the information technologies is the lack of sufficient equipment, regard these technologies as important particularly in terms of visibility and they recommend that the existing equipment be increased and the courses intended for information technologies be intensified.

Since its existence, mankind has perpetually produced and distributed information and used this information for its own needs. All methods such as carrier pigeons, the Morse code and smoke used for distribution of information in the past are the examples of information technologies. Today, these have been replaced by such devices as computers, satellite antennas, pagers, and mobile phones. The most basic difference between old and new technology is the speed in the distribution of information. The high speed that the new technologies provide increased the amount of information. All these changes have been achieved as a result of the growth in

microelectronic technologies, and electronic devices replaced the mechanical ones in accessing and using information (Makitya and Hind, 1992; Karahan, 2001).

With this change, the world gradually transforms into a digital form. This transformation also affects the education system as well as all other systems, and this situation becomes a must. Use of information technologies particularly in education has resulted in re-questioning and redefinition of the educational objectives, methods, and techniques, as well as of the equipment used. Computers that are primarily used in administrative services at schools have gone beyond their limits and strongly secure their place among other educational materials and equipment in classrooms (Lankshear, Snyder, 2000). Until recently, the understanding of educational technology brought to mind the equipment such as radios, televisions, filmstrips, overhead projectors, cassette players

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and video players. However, the conception of educational technology has changed rapidly in the last 10-20 years and begun to be used to mean technologies based largely on computers, e.g. CD-ROMs, Interactive audio, interactive video discs, local area networks, hypermedia and telecommunication (Ozturk and Inan, 1998).

Information technology can be defined as creating, collecting, accumulating, processing, retrieving, distributing, preserving information, and the means assisting them (Karahan, 2001). The information technologies are called the "teaching technologies" in education. The widespread use of information technology has caused the societies to transform into "information society" today. New technologies have affected both the economic structure and social and educational structure, and therefore societies are forced to follow technological advancements (Akkoyunlu, 1998). In our century, when time has become the most important factor, individuals should not be late to keep abreast of the age and technology. Rapid and easy completion of this adaptation process is only possible through education the individuals are to receive. And, this could be achieved through making best use of the opportunities provided by the educational technology and effective utilization of new technologies in education (Karalar & Sari, 2007). In this context, computers, databases, the Internet and numerous new hardware and software provide students with considerable facilities and time savings by allowing them to enjoy a variety of experiences in accessing information and in integrating, analyzing and evaluating this information, and to create new information through obtaining detailed information about the past. Therefore, citizenship education challenging the 21st century has to prepare students for being capable of using such means in the problem-solving and decision-making processes (Fontana, 1996).

Particularly in the school programs, social studies are the primary course responsible

for citizenship education. One of the primary questions that the social studies programs seek an answer is how individuals (citizens) can keep abreast of the rapid change of technology (Turner, 1996). The United States National Council of Social Studies (NCSS) supports integration of technology into social studies classrooms to change the teaching methods for the contents of the social studies course and relevant skills (Doolittle & Hicks, 2003). According to Mason et al (2000), in social studies teaching, the technology provides unforeseeable facilities in teaching the contents of the social studies when compared with the traditional classrooms. Accordingly, the principles of the social studies course such as meaningfulness, integrativity, value-basedness, challengeability, and effective learning, which are essential for the course to bring up effective citizens, would make more sense when supported with technology. According to Rose and Fernlund (1997), the information technologies *make meaningful, integrate and activate the learning-teaching process* in achieving the principles for a powerful social studies learning. On the other hand, Braun and Risinger (1999) indicate that many social studies educators assist students to explore their own worlds critically using the information technologies in order to develop civic responsibilities.

The Turkish Ministry of National Education has progressively implemented a new Social Studies Curriculum in line with the developments in the world as from the 2005-2006 school year. It was stated that the approach taken as basis in the curriculum was constructivism. While the use of technology was underdeveloped in theory in the traditional approach, constructivist approach constitutes one of the theoretical bases that surround the integration of technology into social studies teaching (Doolittle and Hicks, 2003). Because, as the learner's constructing the knowledge is the basis in constructivist learning environments (Tezci and Gurol, 2001), learning environments are so orga-

nized that individuals interact with their environment more and enjoy richer learning experiences. Therefore, it is important for teachers to support the data and basic sources with skillful and interactive materials (Demirel, 2001). At this point, use of technology in constructivist learning environments is both significant and necessary in order to create interactive learning environments.

According to Mason et al. (2000), another basis for the requirement for the technology to be an integral part of social studies classrooms is that technology could be learned within context in a better way. In other words, students must use technology as a tool not only in computer courses but in all courses as well. Because this use is driven by a specific purpose, effective learning can be achieved. The situation has more critical significance for social studies course. Particularly in the twenty-first century, when concepts such as e-government, e-citizenship are used predominantly, this course that is responsible for effective citizenship education must be integrated with utilization of technology.

People and history, cultures, social structures and beliefs of those people are studied to a large extent at social studies courses in primary education. Additionally climate, flora and similar natural facts are also dealt with (Akengin, 2007). Most of these subjects are abstract. Use of information technologies enables students to participate in the learning process more actively and prepares the environment for concretizing the subjects (Sunal and Haas, 2002).

Abstract social sciences disciplines such as Anthropology, Economics, Geography, History, Political Science, Psychology and Sociology play an important and necessary role in social studies course in primary education (Turner, 1994). Use of information technologies particularly in the field of geography, which is one of the major disciplines of the social studies course, makes abstract phenomena and concepts concrete in terms of the primary education students, and conse-

quently increases their interest in this course. In this context, the primary objective of this study is to evaluate the state of use of information technologies in teaching geographical subjects within the scope of social studies course based on the opinions of prospective social studies teachers. It is expected that the findings of the study will provide considerable contributions to implementors.

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Method

This section covers the model of the study, the participants, and the collection, analysis and interpretation of the data collected.

Model of the Study

Because it was intended in this study to obtain the opinions of prospective social studies teachers regarding the state of use of information technologies in teaching the geographical subjects within the scope of the social studies course, the semi-structured interview technique from among qualitative research approaches was used. The reason why this technique was used is that an interview process intended for exploring the experiences of the researchers interviewed was aimed in line with the purpose of the study.

Participants

Criterion-sampling method from among purposeful sampling methods was used in this study. Purposeful sampling involves studying information-rich cases in depth and detail (Patton, 1997). On the other hand, the primary understanding in criterion-sampling method is to study all the cases that meet a number of previously determined criteria. The aforementioned criterion or criteria can be

created by the researcher or a list of criteria prepared beforehand can be used (Yildirim and Simsek, 2005). Accordingly, the criteria list was created taking into consideration the qualifications of the prospective social studies teachers.

The primary criterion in selection of the prospective teachers to participate in the study was that they should be senior students at the Social Studies Teaching Program, who completed all the theoretical and practical courses that provide them with the foundation to become social studies teachers. In accordance with this primary criterion, interviews were conducted with 20 prospective teachers meeting the criteria listed on the criteria list from among 110 senior students studying at the Social Studies Teaching Program in the 2006-2007 academic year.

Data Collection Process

Semi-structured interview technique was used as data collection method. In this context, a semi-structured interview form was prepared to collect data in accordance with the problem of the study. A comprehensive literature review was taken as basis in preparation of the form. Main questions were determined after obtaining the opinions of 3 specialists from the Department of Educational Sciences and 2 specialists from the Social Studies Teaching program at the Ataturk Faculty of Education at Marmara University. These questions are as follows:

1. What do the information technologies mean to you and what do they cover?
2. What information technologies could be utilized in teaching geographical subjects in the context of social studies course?
3. What information technologies are currently utilized in teaching geographical subjects in the social studies course?
4. Which of the following information technologies can you use effectively within this scope?
 - a. Power-point
 - b. Interactive CDs
 - c. The Internet
 - d. Google earth
 - e. Flash
 - f. Other
5. What kind of contributions and disadvantages would these information technologies offer with respect to teaching geographical subject in the social studies course?
6. What can be done for more effective use of the information technologies?
 - a. At teacher training programs
 - b. At schools
 - c. Other

A sound recording device was used to collect the data precisely. Permission was obtained from each participant with respect to the use of the sound recording device.

Analysis and Interpretation of the Data

Content analysis was conducted using numerical analysis, and descriptive analysis techniques were used to analyze the data collected. Sound recordings recorded during interviews with each prospective teacher were first transcribed into written texts. Then, similar expressions relating to the use of information technologies were determined and transferred to tables for use as numerical data. While the frequencies were specified in the quantitative analysis, direct quotations were provided in descriptive analysis in order to reflect the opinions of the interviewees with their own perspectives. Thereby, the reliability of the study was attempted to be achieved. False names were not used instead of the real names of the prospective teachers, whose opinions are included in the text of this study.

Findings and Interpretations

20 prospective teachers were interviewed face to face. The findings obtained from the answers the prospective teachers gave during the interviews were given through direct quotations and line numbers under themes and sub-themes. In direct quotations, the answers with higher frequencies are provided.

Opinions of the Prospective Teachers about What the Information Technologies Mean and What They Cover

Prospective teachers were asked, "What do the information technologies mean to you and what do they cover?" as the first question. While four prospective teachers could not express any opinions about what they meant, all of the prospective teachers expressed their opinions about what they cover. The opinions of the prospective teachers concerning the answer to this question and their frequency distributions are given in Table 1.

Table 1

*The Answers the Prospective Teachers Gave to the Question
"What Do Information Technologies Mean to You and What Do They Cover?"*

The Opinions of the Prospective Teachers about what Information Technologies Mean and what they Cover	f
What they mean;	
a. The means which enable us to obtain information and facilitates it	7
b. The means which facilitates and increases learning and perceiving	4
c. The assisting factors which are benefited from presenting and facilitating information	4
d. Use of technological means and materials in the lesson	4
e. Facilitating learning	4
f. Increasing productivity	3
g. Using time effectively	1
h. Technology which produces and preserves information	1
i. Permanent development and innovation	1
j. Computer systems	1
What they cover;	
a. Computer	13
b. Overhead projector	11
c. Projector	9
d. Internet	9
e. TV	4
f. CD	4
g. Power-point presentations	3
h. Micro-cassette recorder	2
i. Cinerama	1
j. Radio	1
k. Magazine	1

As it can be seen in Table 1, the most common opinion about what computer technologies meant was the expression of 7 prospective teachers: "Tools that enable and facilitate accessing information." This expression is followed by the opinions of 4 prospective teachers "Tools that facilitate and increase learning and perception"; "auxiliary factors utilized for and facilitating the presentation of information"; "Use of technological equipment in lessons"; and "They facilitate learning" respectively. While Zeynep, one of he prospective teachers who expressed their opinions about what the information technologies mean, said, "*Information technologies (...) could be the technological things that we use to spread information, or to transmit information to others, or to spread that information, or that facilitates others to understand the information.*", Remzi said, "*The information technology (...) means the auxiliary factors used to transfer the acquisitions obtained from a specific unit to students. We can say that these are the most important aids of teachers to convey the subjects to the students in a better way. Furthermore, it also assists the children to understand better and to equip the children*

with relevant necessary skills" .

When the opinions regarding what information technologies cover in the Table 1 are examined, it is seen that the prospective teachers mentioned the computers (13), overhead projectors (11) and the Internet (9) the most. While Faruk, who stated that the computers and the Internet from among information technologies were significant, said, "*(...) these are what we generally use from among the information technologies. But today computers and the Internet are popular*", Hakan said, "*I mostly use computers from among the information technologies. In addition to this, I use the Internet along with the computer. The Internet is an incredible bookcase, a library for me (...).*

Opinions of the Prospective Teachers about What Information Technologies could be Utilized in Teaching the Geographical Subjects in the Context of Social Studies Course

The question "What information Technologies could be used in teaching the geographical subjects in the context of social studies course?" was asked to the prospective teachers as the second question. Apart from

Table 2
The Answers the Prospective Teachers Give About "Which Information Technologies Could be Used in the Instruction of the Geographical Issues within the Context of Social Studies?"

The Opinions of the Prospective Teachers about which Information Technologies could be Used in the Instruction of Geographical Issues within the Context of Social Studies	f
Projector	14
Overhead projector	12
Computer	9
Power-Point presentations	6
Internet	5
CD	3
Fluffy maps	3
Educational portals	2
Flash	2
TV	2
Video	1
Cinerama	1

one prospective teacher, all of them stated their opinions. The opinions of the prospective teachers concerning the answer to this question and their frequency distributions are given in Table 2.

As it can be seen in Table 2, with respect to what information technologies could be used in teaching geographical subjects, prospective teachers stated that mostly projectors (14), overhead projectors (12), computers (9), power-point presentations (6) and the Internet (5) could be used in teaching the geographical subjects respectively.

Murat, one of the prospective teachers who expressed their opinion on this matter, said with respect to the use of projectors, com-

puters, overhead projectors and the Internet in teaching the geographical subjects:

"Geography describes, well, the distribution of the world, the people, animals, other living creatures, their mutual interaction, mountains, stones, in other words the natural environment. Natural environment must be shown to the students visually. From this point of view, it would be very useful to use projectors, etc. in the geography course. For example, we did not see such visual aids at high school. Therefore, I know that visuality is an important thing in education."

while Remzi said, *"(...) especially landforms can be shown to the students*

Table 3
The Answers of the Prospective Teachers "Which Information Technologies Could be Benefited in the Instruction of the Geographical Issues at the moment?"

The Answers of the Prospective Teachers about which Information Technologies are used in the instruction of Geography in Social Studies Course	f
At school	
a. The Benefited Information Technologies	
Projector	6
Overhead projector	6
CD	3
Computer	1
Power-point presentations	1
TV	1
b. The Opinions of those who do not use Information Technologies	
They are at school, but not used by teachers	7
There is no adequate supply at school	5
c. They are used in adequately	5
In Teacher Training Programs	
a. Benefited Information Technologies	
Projector	7
Computer	6
Overhead projector	6
Power-point presentations	3
CD	2
b. Opinions of those who mention they are not used	
There is no adequate supply	3
c. The Opinions of those who mention they are used inadequately	
The individual efforts of academics	4
As much as limited supply allows	1

through computers, projectors or overhead projectors. It would be good for presentation of the subjects visually for the students" Faruk also said:

"In terms of geography, we can utilize information technologies to prepare teaching materials. In addition to that, we can make use of the technologies in conducting researches (...), preparing maps, or preparing images (...). It could be the most beneficial in conducting researches. This is generally based on computers and the Internet. As far as I can think, computer technology could contribute to researches".

Opinions of the Prospective Teachers about the Information Technologies Currently Utilized in Teaching Geographical Subjects in the Social Studies Course

As the third question, the prospective students were asked, "What information technologies are currently used in teaching geographical subjects in the social studies?"

Except for three teachers, all other teachers expressed their opinions on this matter. The opinions of the teachers are given in two basic groups as current situation of use at schools and at the teacher training program and under main themes that present the opinions all together. The opinions of the prospective teachers concerning the answer to this question and their frequency distributions are given in Table 3.

As it can be seen in Table 3, the prospective teachers expressed their opinions about the information technologies utilized in teaching geographical subjects at schools under three main themes. Accordingly, according to the prospective teachers, who expressed their opinions about what information technologies are used at schools, projectors and overhead projectors (6) are used the most at schools. As for the teacher training programs, the information technologies used the most are projectors (7), overhead projectors (6) and computers (6).

Seven of the prospective teachers, who stated that the information technologies were not utilized at schools, expressed the reason as "They exist at schools, but they are not used by teachers", and 5 of them said, "There is no adequate equipment at schools". The prospective teacher Elif, who expressed this kind of opinion, said the situation arose from the lack of necessary equipment by saying:

"At the schools where I went for practical training, there were no computers, overhead projectors in every classroom (...) Always, I mean, the same classical method of teaching; teacher uses a piece of chalk and draws on the board. They are used at the university, but they do not exist at primary education schools where we go for practical training. I asked the teachers why they do not use anything, why they do not use visual equipment, for the education requires it. They said such equipment did not exist at school and that there was a queue for use. Even if they exist, there is only one, I think therefore they are not used, because there is no adequate equipment."

The prospective teacher Soner stated that teachers did not use the existing resources by saying, "(...) *at the primary education schools, there are monitors installed on the tables of teachers, computer monitors, and there are also keyboards. Teachers can use them upon their will, but they are packaged, they have not been opened at all, the buttons are untouched, their packages are intact. (...)*".

Five of the prospective teachers, who thought that the level of use of information technologies was inadequate, stated that the utilization was inadequate due to "inadequacy of necessary equipment" in terms of schools. 4 prospective teachers stated that they find the utilization inadequate due to the fact that "it is limited to the individual efforts of academics" and 3 others due to "utilization of limited equipment as much as possible".

Faruk, one of the prospective teachers who expressed this kind of opinion, said, "(...) we experience the same thing at our university. We could not find a projector to give a lecture. We struggled with that for two weeks. Actually I am not so unfamiliar with the situation, because, set aside the primary education schools, we study at university (...), we do not use and we cannot utilize information technologies".

Opinions of Prospective Teachers about which Information Technologies They can Use Effectively

The question "Which information technologies can you use effectively within this scope?" was asked to the prospective teachers as the fourth question in the study. All the teachers expressed their opinions. The opinions of the prospective teachers concerning the answer to this question and their frequency distributions are given in Table 4.

As it can be seen in Table 4, prospective teachers expressed their opinions under three categories as "I know and I can use effectively," "I know but I cannot use effectively," and "I do not know." Accordingly, the information technologies the prospective teachers can use most effectively are the Power Point presentations (17). This is followed by the Internet (15) and interactive

CD's (14). The least known information technology is Flashes. 10 prospective teachers stated that they had no idea about flashes. This is followed by Google Earth, which 6 of the students said they did not have any information about.

With respect to how to utilize the Internet in geography course, the prospective teacher Zeynep said:

"For example, I can find the map of a place where I have no knowledge about from the Internet. In geographical terms, I can learn about a country where I have never been or known before easily. You can learn about their clothing, geographical forms, how they live, their languages, religions and everything", on the other hand Gulcin said about the use of Power Point, *"Yes, I think I can use the Power Point very effectively in teaching"*.

Opinions of Prospective Teachers about what kind of Contributions would the Information Technologies Provide With Respect to Teaching Geographical Subjects in the Social Studies Course

As the fifth question in the study, prospective teachers were asked the question "What kind of contributions and disadvantages would these information technologies offer

Table 4

*The Answers Prospective Teachers Gave to the Question:
"Which Information Technologies can you Use Effectively within this Scope?"*

The Opinions of the Prospective Teachers about which Information Technologies they can Use	I know and I can use effectively	I know but I cannot use effectively	I do not know
a- Power-point	17	1	2
b- Interactive CD's	14	2	2
c- Internet	15	5	
d- Google earth	7	7	6
e- Flashes	5	5	10
f- Other			
g- Projector	2	1	
h-Overhead projector	1		

with respect to teaching geographical subject in the social studies course?" All teachers expressed their opinions. The opinions of the teachers have been given in two basic groups. The opinions of the prospective teachers concerning the answer to this question and their frequency distributions are provided in Table 5.

As it can be seen in Table 5, prospective teachers expressed their opinions respectively as, "It provides visuality" (12), "It provides permanent learning" (7), "It makes the information concrete" (4), and "It increases students' interest". Accordingly, prospective teachers think that the most important contribution of information technologies is visuality.

Songul, one of the prospective teachers who expressed their opinion on this subject, said: "(...) it is the most important contribution for it increases visuality. It is easy to have students involved in the lesson. (...) The knowledge becomes permanent, because sound and vision are harmonious. It also creates distinction and arouses interest". Uygarsaid,

"Perhaps it provides permanence in learning. Because it is said that you learn more if you see it. Also it makes information concrete (...), for example parallels and meridians are abstract things, but if you study them visually, this facilitates learning (...)". Hakki said, *"It helps us to learn more productively. Because when you see it, knowledge becomes permanent when we get it. Because, I think visual learning is more permanent"*. Eda said, *"(...) in geographical subjects, for example, we say stalactite, stalagmite, we say meander; because geographical subjects are concrete, visuality is a must. Therefore, if there is no visuality, it is not possible to educate students. If students learn geography without visual aids, they may forget the knowledge in a short while later. (...) It is definitely for sure that visuality is a must for geography"*.

As it can be seen in Table 5, prospective teachers expressed their opinions concerning the disadvantages of the information technologies with respect to teaching the geographical subjects in the social studies course respec-

Table 5

*The Answers of the Prospective Teachers concerning the Question
"What kind of Contributions and Disadvantages in the Instruction of Geographical
Subjects within Social Studies Course do Information Technologies Provide?"*

The Opinions of Prospective Teachers have about the Contributions and Disadvantages of Information Technologies in the Instruction of Geographical Subjects within Social Studies Course	f
The Contributions	
It provides visuality	12
It provides permanent learning	7
It makes abstract information concrete	4
It increases student interest	4
It decreases the boredom of the lesson	3
It makes students re-structure information by themselves	3
It facilitates learning	3
It provides contribution to the positive development of the student	2
It supports student-centered education	2
It provides easy access to information	1
The Disadvantages	
It may result in laziness to research	5
Non-effective preparation and use may result in negative repercussions	2
It may decrease student participation	2
It may take long time to prepare	1

tively as "It may result in research laziness" (5). Sevket, one of the prospective teachers who expressed their opinions concerning the matter, said, "*It may have a disadvantage (...). Plus, it has another aspect, researching from the Internet or somewhere else is not something like reading a book. Perhaps at the same time it may lead students to laziness. For example, they would never go to library, and may not think what library means (...).*" Zeynep said, "*It may have a disadvantage. It may be laziness for example. In the past, students would use encyclopedias, and other books, but now there is the Internet, you can copy and paste the information from there, and the homework is done! Perhaps it may lead to laziness to some extent*".

Opinions of Prospective Teachers about What can be Done for More Effective Use of Information Technologies

Prospective teachers were asked, "What can be done for more effective use of the information technologies in your opinion?" as the sixth question. All teachers expressed their opinions. The opinions of the prospective teachers were given in two basic groups as at teacher training programs and at schools.

The opinions of the prospective teachers concerning the answer to the question and their frequency distributions are given in Table 6.

As it can be seen in Table 6, prospective teachers made suggestions as to what could be done in teacher training programs for more effective use of information technologies as "Reinforcing the relevant lessons at school" (6), "Reinforcing the relevant equipment" (5) and "The education can be provided by specialists in relevant fields" (4) respectively. Oguzhan, one of the prospective teachers who expressed their opinion concerning the matter, said, "*If these are supposed to be very significant for us in the training we receive (...), they must be given in more details by more experienced academics and I do not believe it is done so*".

Seda said, "*In my opinion, the equipment we use is very limited. (...) That is, it does not work, there is only a few, the number of equipment must be increased, and they must be kept somewhere we can have easy access when we need them. It would be better if our classrooms were equipped in that way (...)*", and Selim said, "*I think it could be prepared better. For example, some academics come*

Table 6
*The Answers of the Prospective Teachers to the Question,
"What could be done to Use Information Technologies more Effectively?"*

The Opinions of the Prospective Teachers about What could be done to use information Technologies More Effectively	f
In teacher training programs	
Strengthening relevant lessons at school	6
Strengthening the supply of the materials	5
The education should be conducted by the experts in the area	4
It should be more systematic	2
The student should also learn how to use	2
It should progressively be renewed	2
Rewarding use of information technology	1
At school	
Strengthening the supply of the materials	11
The training of the teachers	8
Maintaining material support to the schools	3
Personal participation of the student in the use	1
Organizing in-service training programs	1

and lecture without using them, if only they used visual equipment such as computers, they must not be limited to only social studies course, it must be spread across all our courses (...).

As it can be seen in Table 6, prospective teachers made suggestions as to what could be done at schools for more effective use of information technologies as "Reinforcing the relevant equipment" (11) and "Training the teachers" (4) respectively. Murat, one of the prospective teachers who expressed their opinion concerning the matter, said:

"Well, there should be an overhead projector or a projector, or something to show the students at each school, in each classroom. There was only one or two at schools we went for practical training. Even we could not find a projector at this school (University). I means, I cannot imagine the situation of other schools. (...). First of all, schools should be supported financially and every classroom must be provided with a projector (...) and teachers lacking relevant skills should be trained accordingly. Training should be given to both teachers and students, but primarily to teachers. Every classroom in every school should be equipped in this way. Every classroom should have its own equipment".

Discussion

Rapid development of information and technology in the field of education, rapid change of social structure and needs clear the ground for the change and development of the teaching programs as well (Acun, 2006). The field knowledge of the teachers, who implement the changing curriculums at classrooms, and their command of the information technologies, as well as the learning-teaching process should be supported with necessary equipment (Yasar and Gultekin, 2006). As Sevket expressed, because particularly the geographical subjects include abstract concepts (such as meridians

and parallels), supporting the subjects with visual materials using information technologies facilitates learning.

It is very important to improve the competency of teachers with respect to utilization of information technologies in accordance with the developments in the curricula. It is known that particularly the prospective teachers' utilization of information technologies relating to the field in which they receive training, and relating the information technologies with subjects would not only enable the education to attain its goals, but also increase the permanence of knowledge. Among the objectives of the geographical subjects in the social studies program is to develop the critical thinking. Sharma and Elbow (2000) point out that use of information technologies develops critical thinking skills in geographical subjects. Taking into consideration the fact that it is necessary to know about the subject for critical thinking, as Zeynep stated, use of the Internet resources enables students *"in geographical terms, to learn about a country where they have never been or known before easily, with its people, clothing, geographical forms, how they live, religion and everything."*

Goeler, Kautzer and Knuth (2000) assert that the technological competence of teachers must include technical skills and the educational use of these skills. It is seen by the expression of Songul that some of the prospective teachers forming the experimental group for this study and the teachers serving at schools, where prospective teachers go for practical training, are adequate in terms of the use of technology and educational applications.

Emphasis is put on the fact that increasing the number of equipment at schools, training the teachers (Table 6), providing visual aids and thus increasing permanency of knowledge, using the information and communication technologies in teacher training would assist in societies to be equipped with the necessary human characteristics in

the information age. Accordingly, it is an important result that the prospective teachers, who provided this study with the necessary data, express that they would be able to use some of the information technologies effectively (Table 4).

According to Diem (1999), the main challenge for social studies teachers is "to learn how to develop the skills to use the technology, new equipment and techniques effectively to increase understanding of the content". Furthermore, emphasis is also put on the fact that the information increases rapidly in today's societies owing to the innovations achieved in the field of information technologies, that access to information has become easier owing to the information technologies, and that there are certain standards aimed at use of computers as one of the information access tools effectively particularly in the field of education. It is pointed out that the most important standard is competency (Kahraman, Kose and Kara, 2005). The fact that the prospective teachers find themselves incompetent (Table 4) with respect to the use of Google Earth and flash programs, as well as of the easy-to-use equipment such as overhead projectors (Doganay, 2002), which can particularly be effectively used in teaching the geographical subjects, indicate that there are problems in terms of the competency of some of the prospective teachers forming the research group, in terms of use of the information technologies.

Even though there are many studies indicating that the information technologies support teaching activities in all areas of education, and increase the permanence of knowledge (Acun, [2006], Yasar and Gultekin [2006], Sharma and Elbow [2000]), it was also emphasized by the prospective teachers that, in addition to the contributions made by the information technologies to geographical subjects in social studies course, they may also lead to disadvantages such as research laziness in students, unfavorable results if not prepared and used effectively, and de-

crease in the efficiency of students (Table 5). Furthermore, it was also expressed that easy access to information in the Internet environment, instead of researching encyclopedias and books, may lead students to do their home works using the cut and past technique (Zeynep).

It is known that information technologies assist children in researching, organizing and arranging the geographical information in very different ways (OFSTED; 2004). The fact that the prospective teachers, such as Murat and Faruk, have approaches that support OFSTED with respect to teaching geographical subjects draws attention. However, it can also be concluded from the interviews that lessons continue to be conducted through ordinary methods at schools with inadequate technological equipment.

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