# Teachers' Views about Effective Use of Technology in Classrooms

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**Abstract**
Effective use of technology in educational environments and its successful integration increases the productivity of instructional processes. Constant and good-quality support supposed to be provided for teachers is quite important for technology use in educational environments. Thus, it is necessary to find answers to the question of what kinds of activities could be used to provide teachers with constant support for technology integration in educational environments. In this respect, the present study aimed at determining teachers' views and their suggestions about the process of technology integration into educational environments and about the problems experienced in the process. In the study, the research sample included a total of 21 teachers teaching at Tepebasi Resat Benli Elementary School in the city of Eskisehir. Of all the participating teachers, 11 of them were elementary school teachers, and 10 of them were field teachers. In order to find answers to the research questions directed in line with the overall purpose of the study, the qualitative research method was applied. The research data were analyzed with the help of thematic analysis. The research data were collected via the focus-group interviews held with the teachers, observations and researcher journals. The data collected in the study were gathered under two main themes depending on the open-ended questions directed to the teachers regarding technology use and on the related literature. These themes were 'Problems experienced by teachers regarding technology use in class' and 'Suggestions for effective use of technology'.

***Keywords:*** *Technology in classroom; technology use; elementary education; technology integration.*

## Introduction

A better and more powerful future for countries depend on the quality of the training they provide for their young individuals with and on the rich learning environments they establish for these individuals. Studies conducted demonstrate that education systems play an important role in the development of countries and that the financial growth and development of countries increases in line with the number of trained and equipped individuals. For this reason, the most important funds of a country are the individuals in that country (Schultz, 1981). Countries aware of this fact have put educational

institutions under governmental control and management. Thus, the major environments that provide educational services are schools (Demirel, 2007).

In order for individuals to achieve effective and meaningful learning in educational environments, various instructional design models have been developed. Instructional design is defined as the development of functional learning systems that meet the educational needs of a certain target audience (Şimşek, 2009). Merrill (2007) determined the basic principles of an instructional process depending on certain instructional design models. The most important feature of these principles is that they are commonly found in all instructional models in general. These features are as follows: learning should be supported when learners have to solve real-world problems; when their knowledge or their readiness levels are activated in the process in a way to establish the basis of new knowledge; when information is presented to the learner in the framework of concrete indicators; when the information is applied by the learner; and when the information is integrated into the learner's world effectively.

Learning could be said to be permanent when individuals learn in environments similar to real-life situations or when they learn by actual application and experience. Today, it is evident that both activities that lead to learning by actual application and experiencing in instructional processes and learning processes associated with real-life situations can be organized effectively with the support of instructional technologies. In this respect, it is seen that these principles in the learning process mentioned by Merrill (2007) and the reflections of instructional technologies onto educational environments are in interaction. The reason is that instructional technologies (Hackbarth, 1996) provoke interests and stimulate learning; that they encourage students to study; that they help connect the new information with the old knowledge; that they associate the lesson subject with the real-life experiences of the student; that they allow students to reach and evaluate the necessary information; that they meet the expectations and needs of the society; that they help students describe the world in the way they observe; that they help summarize the information to facilitate comprehension; and that they increase individual learning.

In our country, the first thing that instructional activities remind us of is the school and especially the class environment. Therefore, use of instructional technologies in class environment is important. However, the dynamics of the class environment should be taken into consideration regarding the use of these technologies. Technology-based multimedia applications in class environments include student-teacher, student-student, student-content and student-environment interactions in the learning process. Within the framework of these interactions, it is expected that multimedia tools should develop classrooms in terms of education; that access to network sources especially in *smart* classrooms should increase the student-content interaction and thus the meaningful and in-depth learning potential; and that use of theatrical and multimedia presentation techniques should increase the student-teacher interaction (Anderson, 2003).

In order to help use multimedia environments in the narrow sense and technology in the wide sense in courses in the education system of our country, technology use at schools has been encouraged; information technology laboratories have been established; and such devices as projectors and *smart white*boards have been placed in classrooms. According to Baylor and Ritcchie (2002), schools successful in integrating technology into their curricula generally work on comprehensive plans for technology use. Rather than acting just as a road map, these plans explain the philosophy of technology use as well as the way of developing teaching-learning activities.

There are studies conducted to investigate how useful the sub-structure established in schools in our country regarding technology use in education and how effectively teachers use technology in course activities. These studies have revealed that a majority of teachers use Internet-based instructional materials in their courses and that they consider the equipment- related and Internet-related deficiencies as the main reason for failing to benefit from Internet-based and computer-based instructional materials (Korkmaz & Tunç, 2010; Ulaş & Ozan, 2010). The most important reasons why teachers fail to make good use of Internet-based and computer-based instructional materials in their courses could be said to include lack of instructional tools and materials and teachers' lack of skills in designing or using such materials (Eroldoğan, 2007; Gömleksiz, 2004; Korkmaz & Tunç, 2010).

Another dimension prominent in studies based on related literature is that teachers are aware of the importance of educational technology use in courses and that they are not yet willing to use such technologies not only due to lack of the necessary sub-structure for technology use in courses but also due to lack of related support of the school administration and due to insufficient knowledge about use of such technologies in education (Eroldoğan, 2007; Gömleksiz; 2004).

Studies conducted abroad demonstrate that technology use at schools has not yet gained its expected potential to develop students' knowledge and skills (Chen & Chang, 2006; Dexter & Riedel, 2003; O'Connor, Higgins, & Russell, 2003; Simmons, 2011). Russel, Bebel, O'Dwyer and O'Conner (2003), in their study, found out that teachers use technology mostly in the phase of preparation for lessons. In addition, one striking point in USA is the employment of technology experts in schools to support teachers. This situation is similar to employment of Information Technologies trainers in schools in Turkey. In the phase of application of technology, teachers need technology experts, who are representatives of change in American public schools. However, technology experts are not always available for help when needed (Simmons, 2011; Ausband, 2006; Chen & Chang, 2006; Johnson, 2006; Ma, Andersson & Streith, 2005; Dexter & Riedel, 2003).

Most of the studies mentioned above could be said to emphasize the importance of constant and good-quality support provided for teachers regarding technology use. In this respect, for the integration of technology into instructional environments, it is important to determine the types of activities that will help provide teachers with support. Thus, the purpose of the present study was to determine teachers' views and suggestions about the process of effective technology integration into educational environments and about the problems experienced in the process. In line with this overall purpose, the following research questions were directed:

1. What are the problems experienced by elementary school teachers and field teachers regarding technology use in their course activities?
2. What are the views of elementary school teachers and field teachers about technology integration into elementary schools?
3. What kind of support do elementary school teachers and field teachers need to make productive use of technology in course activities?
4. What are the views of elementary school teachers and field teachers about students' participation and support for increasing technology use in course activities?

## Method

In the present study, which was carried out to reveal the views of elementary school teachers and field teachers about effective use and integration of technology in class environment and to determine the problems they experience in the process, the qualitative research method was–applied. In this

respect, focus-group interviews and observations were conducted. The data obtained were analyzed via thematic analysis.

**Participants**

In the process of determining the research sample, the criterion sampling method, which is one of purposeful sampling methods, was used. In the present study, the criterion used to determine the participants was that the schools where the participating teachers were working were supposed to be technologically efficient and to have a sub-structure that would allow technology-based instruction. In line with the criteria determined, the research sample included a total of 21 elementary school teachers - 11 elementary school teachers and 10 field teachers - working at Tepebasi Resat Benli Elementary School in the city of Eskisehir. The distribution of the elementary school teachers participating in the study; 9 of them were female, and 2 of them were male, while 8 of all the field teachers was female, and 2 of them were male.

**Data Collection**

The research data were collected via focus-group interviews held with the teachers, via observations and via the researcher journals. Within the framework of the studies conducted in related literature regarding teachers' effective use of technology in schools, focus-group interviews were held in two phases in two separate sessions and sequentially within the scope of such main themes as determining the problems experienced regarding technology use in schools and expectations from and suggestions of students and of school administration regarding the problems. During focus-group interviews, a group of 6 or 7 participants are interviewed, and in-depth data are collected via face-to-face interviews in a natural environment by revealing the points that participants agree and/or disagree on (Yıldırım & Şimşek, 2006). For the focus-group interviews in the present study, all the participants were asked for their permission for recording the interviews. The first session of the focus-group interviews was organized between 09:00 and 12:00 in the morning on the 28$^{th}$ of June in 2011. The first-session interviews were held with two different groups with separate participation of the elementary school teachers and of the field teachers. Regarding the focus-group interviews, the first group interviewed included 11 elementary school teachers, and the second groups were a total of 10 field teachers. The first sessions of the focus-group interview mostly focused on the problems and expectations regarding technology use in classrooms. The second focus-group interviews were held between 13:30 and 18:00 in the afternoon on the same day, 28$^{th}$ of June, in 2011. During these interviews, suggestions regarding effective technology use were mentioned, and the macro-level analyses in the previous focus-group interview were discussed. The researchers video-recorded the whole process and reported their views and observations regarding the process via written documents and researchers journals.

**Data Analysis and Interpretation**

For the analysis of the data collected in the study, thematic analysis based on the qualitative research method was used, and the data were examined in-depth within the scope of the themes determined based on the theoretical framework of the study. Thematic analysis includes such phrases as forming a thematic framework for analysis, data analysis according to the thematic framework, and interpretation of the findings obtained. In this respect, the data collected are described at first; the data described are then interpreted; and finally the findings obtained are interpreted by examining the reason-result relationships involved (Yıldırım & Şimşek, 2006). Thus, in line with the research questions and with the theoretical framework of the study, the research data were analyzed in three

phases. In the first phase, the records of the focus-group interviews held with the teachers were transcribed and analyzed. In the second phase, considering the themes determined within the scope of the theoretical framework of the study, the teachers' views were analyzed. In the third phase, the findings obtained were first analyzed and then interpreted.

In the phase of data analysis, two different forms were prepared to examine the views of the elementary school teachers and of the field teachers and the sections of descriptive index and researcher comment were included in these forms and filled in by the researchers. For the reliability of the study, the researchers and field experts examined these forms. As a result, the items they agreed and disagreed on were determined. In order to calculate the reliability of the study, the reliability formula suggested by Miles and Huberman (1994) was used. The calculations revealed that the reliability of the study was 98%.

## Findings and Interpretations

The data obtained in the study were gathered under two main themes based on the related literature and within the scope of the open-ended questions directed to the teachers regarding technology use. These themes were determined as "Problems experienced by teachers regarding technology use in class" and "Suggestions for effective use of technology" and were supported with direct quotations regarding the themes. While direct quotations were used regarding the teachers' views, the teachers' names were kept secret and coded. For the direct quotations from the participants within the framework of the main theme determined, the elementary school teachers were coded as $S_n$, and the field teachers were coded as $B_n$.

### Teachers' Views about the Problems Experienced Regarding Technology Use in Class

The first sessions of the focus-group interviews focused on the problems the teachers experienced while using technology in class. Table 1 presents the sub-themes regarding the main theme of "*Problems experienced by teachers regarding technology use in class"*.

Table 1. Problems Experienced by the Teachers Regarding Technology Use in Class

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| *Problems due to failure to keep up with the technology* |
| *Problems due to failure to use current technologies* |
| *Problems experienced in the process of making technology available in class* |
| *Problems due to technical faults caused by incorrect use of technology* |
| *Problems due to Internet connection* |
| *Problems due to the limitations caused by the physical conditions of the classroom and of the school* |
| *Problems caused by sub-structure deficiencies* |
| *Problems caused by ineffective use of technology* |

Regarding the sub-theme of *"Problems due to failure to keep up with the technology",* one of the participants, $S_2$*,* emphasized one common problem saying

> *"Suppose that we have provided all the technological opportunities expected to be used in the school; we have established Internet connection; and we have made our schools technologically efficient. However, what is important is the teacher to use all these. Also, we have other responsibilities besides effective use of technology. Now, we have another area of responsibility determined for us. The area of technology-related duties, that is, it*

> *is the area in which we should develop ourselves and we should keep up with the technology…"*.

Regarding this theme, which other teachers agreed on with similar views, it was in fact pointed out that keeping up with technology was a responsibility and necessity and that other responsibilities expected from them limited their interest, though. $S_1$, one of the participants, mentioned the need for keeping up with technology saying "*I think we, as teachers, do not follow technology at all. We should follow the up-to-date information. This is now a responsibility expected from us"*.

Regarding the sub-theme of "*Problems due to failure to use current technologies"*, one of the participants $S_1$, emphasized the need for updated and renovated technologies saying

> *"As technology constantly changes, there are also changes in computer equipment and in programs in technological sense. Thus, they do not constantly follow this technology at schools because of its cost... Thus, some programs do not work here. And some of them run quite slowly. And sometimes, although some of the programs are installed without any problem, they get halted due to inappropriate systems"*.

The need for using up-to-date technologies, which was one of the most important issues that the teachers addressed with similar views, was a priority for them in the process of effective use of technology.

Regarding the sub-theme of "*Problems experienced in the process of making technology available in class",* another participant, $B_3$, mentioned the problems caused by the process of making technology available for use in class and stated

> "*… making technology available for use sometimes distracts students' interest. Now, for example, we will show something on the computer; in order to do this, a certain amount of time is consumed. During this time, students lose their motivation in the lesson. And we then experience difficulty motivating them again"*.

Most of the teachers agreed on the time lost in making technology available for use, on the decreasing motivation and on ineffective use of technology at school.

With respect to the sub-theme of *"Problems due to technical faults caused by incorrect use of technology",* the teachers mentioned the problems they experienced regarding technology use due to incorrect use of technology and stated that this was an important problem. One of the participants, $S_{11}$, addressed incorrect use of technology saying *"…because, in our school, education is given both in the morning to elementary school lower-grade students and in the afternoon to elementary school higher-grade students, the program or the device that we leave on during the day disappears or breaks down the following day…"*. One of the participants, $S_7$, gave an example for such a problem saying *"The plug-in sockets were broken while he was plugging the connection cable to the computer. And we could not use the projector or the computer for a long time"*. A majority of the teachers agreed on the problems reporting similar examples regarding incorrect use of technology in class. Regarding the same theme, $S_7$, another teacher, emphasized the importance of teachers' efficacious regarding incorrect use of technology saying "*if we can use technology effectively, it will be better and more effective"*.

Within the scope of the sub-theme of *"Problems due to Internet connection",* one of the participants, $B_9$, reported "*The problem related to the Internet connection. In some classrooms, there is no Internet connection. In some others, there is connection, but you sometimes lose it. I think it might be due to the problems with the cables or with the connection",* while another teacher, $B_5$, stated "*As I had only one course-hour a week, I wasted a lot of time on connection and on installation. Just as I established connection, finished the preparation and started to demonstrate to the students, the lesson was over"*. $B_6$, another teacher, mentioned the problems experienced regarding the Internet connection saying *"such problems as slower connection to the Internet or loss of connection and failure to establish connection sometimes destroys all out plans"*. One of the participants, $S_4$, pointed out the reflections of effective use of the Internet onto the educational environment saying

> *"The visual education given thanks to the Internet and computer helps children easily remember what they have learnt. When they see all the things and when they are exposed to individual examples, the things they have learnt then become more permanent in their minds. I personally experienced this"*.

Most of the participants reported common views regarding the problems that occurred due to the Internet connection. Similarly, the participants mentioning the negative reflections of ineffective use of the Internet onto the course thought that the Internet could contribute to the establishment of a more effective learning environment when used effectively. One of the participants, $B_9$, emphasized the censorship for the Internet use saying "*it was a big problem that we were sometimes unable to enter the websites that we wanted to visit to find sources. The reason was that almost all the websites were banned… This prevents us from accessing the sources and using them in courses…*". In addition, the same participant also reported that such a situation could reflect negatively onto educational environments.

Regarding the sub-theme of *"Problems due to the limitations caused by the physical conditions of the classroom and of the school",* one of the participants, $S_5$, pointed out the problems and limitations caused by the physical conditions of the educational environment saying "*In fact, there are some problems that occur because the environment is inappropriate. The curtains are not appropriate to quality projection of images or videos. I believe that the learning environment is important in effective use of technology"*. With respect to the same sub-theme, $S_{10}$, another teacher, emphasized the problems that were likely to occur due to bad-quality physical conditions of the classroom giving an example *"Such devices as the projector and the curtain should be located in a place in the classroom that all students can easily see from their seats. Because no attention was paid to this issue, some of the children were unable to see the whole projected image"*. All the other teachers agreed on this problem and reported similar experiences.

With respect to the sub-theme of *"Problems caused by sub-structure deficiencies",* one of the participants, $S_4$, mentioned the need for a good-quality sub-structure saying

> "*We sometimes had problems with connection between the devices and this causes loss of time. For example, we start the first lesson; then lose fifteen minutes for connection; and waste a lot of time waiting for devices to open. If this loss of time is decreased to minimum and if the sub-structure is made available for effective use, it will be much better and more productive…*".

Regarding the sub-theme of "*Problems caused by ineffective use of technology",* another participant, $B_9$*, reported "I think, as teachers, we don't use technology effectively. We should be able to use*

*technology effectively and well so that we can cope with any possible problem".* In fact, generally, the teachers demonstrated self-criticism regarding technology use and attributed ineffective use of technology to their own efficacies.

Based on the data obtained via the focus-group interviews held, it could be stated that the teachers generally associated the problems regarding technology use with ineffective use of technology. The teachers thought that such problems occurred due to lack of their technology use efficacies and due to their failure to keep up with technology. They also emphasized the need for associating other problems experienced in the process of effective use of technology in class primarily with these problems.

**Teachers' Views about the Suggestions Regarding Effective Use of Technology**

In the second sessions of the focus-group interviews, the suggestions regarding the teachers' effective use of technology in class were discussed. Table 2 presents the sub-themes regarding the main theme of *"Suggestions Regarding Effective use of Technology in Class"*.

Table 2. Suggestions Regarding Effective Use of Technology

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| *Keeping up with Technology* |
| *Professional development activities for effective use of technology* |
| *Using available technological facilities or materials* |
| *Making technological facilities ready for use before the lessons* |
| *Asking students for help regarding the use of technological facilities* |
| *Training students for effective use of technological facilities* |

Regarding the sub-theme of *"Keeping up with technology", one of the participants,* $S_1$, explained how s/he dealt with an existing problem by keeping up with the current technology and gave an example for such a situation saying

> *"…I think we should follow the current technology. Well, I examined the programs that I can use to protect the computer in the class and I found one program called Deep Freeze. This program allows the computer to return to its previous state and prevents negative interventions. Also, the program protects the operating system and helps avoid viruses. In this way, I can really protect the computer. Well, I think we can find some solutions to such problems".*

Most of the teachers reported similar views and supported the idea that it is a necessity for teachers to keep up with current technologies.

With respect to the sub theme of "*Professional development activities for effective use of technology*", one of the participants, $S_2$, believing that professional development activities planned effectively could reflect positively on their technology use planning, said

> "Technology is rapidly developing, and in this respect, we are supposed to participate in activities and *trainings* that will help develop our knowledge*… for example, during the trainings that you gave us regarding the smart whiteboard, we saw that it is very easy to do most things. It was quite simple. We were easily able to prepare the documents in ten or fifteen minutes, which would take us days to do so".*

Regarding the sub theme of *"Using available technological facilities or materials", one of the participants,* $S_3$, reported *"We used the ready-made programs with pleasure in our lessons and did not experience any problem at all"*. Another participant, $S_2$, suggested a solution to the problem experienced regarding technology use saying

> *"I mostly use interactive or Internet-based ready-made programs and I benefited a lot from these programs. I used such programs especially involving all my students last year, and I witnessed a considerable increase in their success. Thus, I actually wonder whether teachers are supposed to prepare these or not. In fact, I have some question marks in my mind regarding this because if we prepare these, then we may face some problems regarding guiding our students, developing their knowledge and helping them gain experience, which are all among our basic duties. I believe it would be much easier to use ready-made programs"*.

In fact, this situation could be emphasized as a concrete example for the positive reflections of effective use of ready-made programs and materials onto the teaching-learning process. $S_2$, another participant, like most other teachers, pointed out the possible problems that might occur if preparing technology-supported instructional materials or making technological facilities ready for use were among the duties and responsibilities of teachers. It seems that the teachers agreed not only on the need for making technology use easier and available for everyone but also on the idea that it should not be among their own responsibilities.

Within the scope of the sub theme of *"Making technological facilities ready for use before the lessons", one of the participants,* $S_{10}$, stated *"For me, the most important solution is that everything should be ready for the teacher using technology in class"*. Another participant, $S_7$, mentioned the precaution she/he took regarding this subject and said *"I made some of my students responsible for making technology ready for use in class before the lessons. When I now enter the class, everything is ready".* Most of the students agreed not only on the need for making technological facilities ready for use in class but also on the idea that such a precaution would solve some of the problems experienced regarding technology use.

The sub theme of *"Asking students for help regarding the use of technological facilities" was a prominent suggestion for solution agreed on by almost all the teachers*. One of the participants, $S_2$, pointed out that today, students are generally more willing to use technology in class and that they are quite successful in this process. The participant, reporting that effective use of technology drew the students' attention more to the learning process and that technology featured certain efficacies of students regarding cooperation, leadership and willingness to research, stated:

> *"Our technological deficiencies actually led to some positive results as well. You know we have always talked about student-centered education. We should stay back as much as possible. Students should be involved in the learning process. But we can't actually achieve this at all. However, as we are competent in technology, we are supposed to give more chance to our students. And our students get involved in technology with great pleasure, sometimes half of the class, and sometimes almost the whole class. They help one another. And sometimes they are prominently interested in technology. They say come on, you can do it. They even research the technology-related problems we experience in class. In fact, today, students are more interested in technology-related subjects…"*

One of the participants, $B_6$, stated *"Students know more about technology than I do. I really don't know much about it. For example, they use the smart whiteboard better than me… They know most of the problems experienced in technology use and they help with such problems."* Another participant, $B_3$, reported "Students already try to help with the problems. For example, they solve problems related to software installation, software update and related issues."

With respect to the sub theme of *"Training students for effective use of technological facilities", one of the participants,* $S_8$, stated *"Students should be trained on effective use of technology. For example, two students from each class should be chosen and trained. And we can ask these two students for help to solve the problems that we experience in technology use in class."* Another participant, $B_7$, reported *"Some of the students could be assigned duties regarding technology use.", while* $B_1$, another participant, stated "*two or three students from our classes are already responsible for issues regarding technology use in class. Among students, those interested in technology are quite willing to do things related to technology."* In fact, a majority of the teachers shared their positive experiences related to this subject and agreed on the experiences expressed by their colleagues. In other words, training students and assigning these duties regarding technology use were among the suggestions commonly applied and put forward by the teachers regarding solutions to problems experienced in technology use.

## Conclusions and Suggestions

Studies conducted emphasize that learning, supported with activities which address more than one sensory organ and which draw students' attention and interest will lead to permanent and meaningful learning (Georgina & Hosford, 2009; Palak & Walls, 2009; Dillon-Marable & Valentine, 2006). In this respect, spread of use of such technological structures in course activities as multimedia and Internet technologies is important. In order to increase the quality of education given in our schools, it is also important to support students willing to carry out such activities.

As demonstrated by the findings obtained in the present study, teachers are willing to use technology in their courses. However, it is an obvious fact that they need constant support regarding technology use in their courses. Such factors as the limited number of the staff to provide teachers with technological support at schools; inability to provide teachers with instant support at the exact time when necessary; lack of sub-structure; physical conditions; the quality of teachers' efficacy in technology use; and lack of sufficient amount of time in the process of becoming efficient in technology use increase the problems that teachers experience regarding technology use. Therefore, teachers cannot efficiently use technology in their courses. In related literature, the findings of previous studies revealing that teachers are willing to use technology in their courses when technology complies with the curriculum and when appropriate plans regarding effective and constant support in technology use are made (Georgina & Hosford, 2009; Chen & Chang, 2006; Garrison & Bromley, 2004; Dexter & Riedel, 2003) are consistent with the findings obtained in the present study. In the study, such obstacles encountered by teachers while using technology as lack of time for teachers to plan and apply the new technology, their attitudes towards technology and the need for constant support regarding technology use are all parallel to the research findings reported in related literature (Palak and Walls; 2009; Park & Ertmer, 2008; Yang & Huang, 2008; Lowther et. al., 2008; Fviburg, 1997).

According to the research findings, the teachers participating in the study emphasized that most of their students were better than them in using technological tools or environments. In this respect, it is an inevitable solution for teachers that students help their teachers with technology use. The solutions

that the teachers suggested regarding the process of effective use of technology included such subjects as students' support or their training because the teachers thought that they would be able to use technology more effectively in their course activities when their students helped them with technology use in class. Thus, with the help of execution of courses in cooperation of teachers and students, it will be possible both to increase the interaction between teachers and students and to decrease teachers' anxiety in technology use during lessons. Dillon-Marable and Valentine (2006), in their study, reported that technology integration into education could be achieved by establishing constant interaction between teachers and students, by facilitating technology use and providing students with opportunities to use technology effectively. In this respect, technology-based interactions between teachers and students which will allow them to use technology effectively could lead to effective technology integration. Based on research findings, qualitative applied studies could be conducted in which students act as technology assistants and use technology effectively.

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