DISTANCE EDUCATION FOR PROFESSIONAL DEVELOPMENT IN ICT INTEGRATION: A STUDY WITH PRIMARY SCHOOL TEACHERS IN TURKEY

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Abstract

The primary education curriculum in Turkey requires integration of Information and Communication Technologies (ICT) into classroom practices. This urges training of Turkish teachers in ICT like their colleagues in Western countries. The current study analyzes interviews held with 73 primary school teachers in the spring semester of the 2007-2008 academic year in Bolu, Turkey, who participated in local In-Service Training (INSET) programs to integrate ICT into their classroom practices. Content analysis and continuous comparison techniques were used to analyze the data. Teachers reported positive effects in their computer and internet knowledge, skills, opinions and classroom uses of these technologies and in their students' academic achievement levels, use of these technologies and participation in classroom activities. Even though teachers reported positive changes in themselves and in their students, they noted many barriers to integrating INSET gains into their daily classroom activities.

Key Words: Distance Education , Primary School Teachers, Professional Development

Introduction

The opportunities for teachers at all grade levels to implement various technology facilities during their instructional activities in different learning environments require training teachers in the instructional uses of technology. According to Akçakaya and Tanrısever (2007), the developments and changes observed in information and communication technologies influence educators and their education related activities. They emphasize that various means need to be used and provided for adaptation to these technologies as these technologies increase the quality of learning environments. In Turkey, school administrators and teachers are willing to implement new technologies as long as the necessary technological equipment and facilities are provided to the schools by the Turkish Ministry of National Education (MoNE - MEB). The Ministry of National Education (Republic of Turkey, Ministry of National Education, 2005) states that activities have been carried out at every level of the education system in order to use and expand new technologies in education and ensures that teachers and students make use of information technology in every lesson. For this purpose, MoNE offers training opportunities for teachers to use these new technologies in their classes effectively**.**

Recently, as a reflection of international technological developments, there has been an increase in the number of distance education programs. Various distance education programs are being organized for people who not only wish to continue their education as the requirement to meet not only their educational needs, but also their individual needs. Turkish teachers have greater access than ever to opportunities that enable them to develop themselves both professionally and individually. Since various instructional delivery modes are being used in these distance education programs, distance learning does not constrain students to be physically present in the same location as the instructor and various distance education programs can be offered in different academic fields using different technology facilities, allowing people to work and study at their own speed (Cutshall, 2002; Kohafi and Srinivas, 2004). According to Eastmond (1998), distance education has expanded to the Internet to the extent that in some settings the terms "distance learning" and "web-based courses" are becoming synonymous. In this framework, in the present study, "distance education" is used as a synonym for both "distance learning" and "web-based learning."

The integration of various distance education means, especially the Internet and the World Wide Web (www), into teacher professional development programs is one of the implications of these technological developments and changes into professional development programs for teachers.

Jackson (1999) claims that through the widespread use of the World Wide Web in all areas in the world, the WWW gains its real potential and value in education - especially in instruction. In line with this, education specialists (e.g. teachers, school administrators, supervisors and others) aware of the importance and the facilities that the Internet provides, not only consider it as part of their instructional activities but also implement it as a means in order to achieve their program objectives.Distance education means are considered as parts of teacher professional development programs as they have some advantages of integrating them into INSET programs. Meyen, Ramp, Harrod and Bui (2003) summarize the possible advantages of online staff development programs as being self-paced, teacher-controlled, convenient to participate, personalized, allowing for public review, providing for portfolio management and enabling sharing of resources.

The Turkish Ministry of National Education (MoNE - MEB) carries out INSET programs in computer and internet technologies (MEB, 2007) for teachers to equip them with necessary computer and internet related knowledge, skills and competencies, to increase and to enhance their current computer and internet knowledge, skills and competence levels and to integrate these computer and internet related knowledge, skills and competencies into their daily classroom activities and practices. These INSET programs indicate that the professional development of teachers in computer and internet technologies and the effective integration of these technologies by teachers into their daily classroom activities and practices are important for the Turkish MoNE. In this regard, it should be pointed out that in the present study, ICT integration is used as a synonym of the effective use of technology by the instructor as stated in Mazman ve Usluel (2011).

When distance education means are used in the training of teachers, many researchers have observed positive effects both in teachers and in their students. In this regard, (Frey, 2008; Gunter,2008; Sheumaker, Slate, & Onwuegbuzie, 2001; Swan and Dixon, 2006), found positive effects in distance education not only in teachers' utilizing technology in teaching (Frey, 2008; Gunter, 2008; Sheumaker, Slate, & Onwuegbuzie, 2001; Swan and Dixon, 2006) , technology knowledge and skills, opinions, views regarding technology (Frey, 2008; Gunter, 2008; Swan and Dixon, 2006) but also in their students' use of technology and technology knowledge and skills (Sheumaker, Slate, & Onwuegbuzie, 2001). Even though studies conducted in Western educational settings have documented the positive effects of distance education means in the training of inservice teachers, the present study is an attempt to discover if distance education means are effective when they are used in the training of inservice teachers in a Turkish context where the Turkish MoNE provides professional development opportunities for primary school teachers.

In this regard, the following research about distance education for professional development of primary school teachers in ICT integration in Turkey indicated positive effects on teachers as in Western educational settings.Tekin (2007), for example, reported positive effects of these professional development programs on teachers' attitudes towards computers and computer self-efficacy perceptions. Additionally, Çalımfidan (2007) found that teachers gain the knowledge and skills about computer use, materials preparation for the instructional activities and technology use by the end of these programs.

The Turkish Ministry of National Education (MoNE - MEB) plans, organizes and conducts training programs in accordance with projects (e.g. Computer and Internet Use Training Project, INTEL Education for Future Project) for the individual and professional development of in service primary school teachers. One of these projects is the "Teacher Training Project through Distance In-service Training Method" in cooperation with Microsoft (MEB, 2005).The Turkish Ministry of National Education (2005) reports that the necessary studies and procedures concerning implementing the "Teacher Training Project through Distance In-service Training Method" have already been completed in Turkey by activating the era's technology computer and internet as well as existing traditional methods and applications. According to the Ministry, the first example of this project will be on computer education for teachers implemented as web-based on the internet (MEB, 2005). The aim of this training is to increase computer literacy levels of teachers who have a certain level computer literacy, to equip teachers who are computer illeterate with certain computer literacy skills, covering topic areas, such as; the fundamentals of information technologies, Microsoft Windows and OfficeXP (MEB,n.d.). Within this framework, the researcher attempted to investigate primary school teachers' opinions about the effectiveness of in-service training (INSET) programs via the distance education programs they participated in.

Method

Study Group : Seven hundred and thirty one primary school teachers who are working at primary schools located in the central county of Bolu -Turkey in the spring semester of the 2007-2008 academic year formed the population of the study (T.C. Bolu Valiliği, Bolu İl Milli Eğitim Müdürlüğü, 2008), (n=73) of whom participated in the current study formed the study group. Interviews were held with these 73 primary school teachers. Of the total number of primary school teachers, over half (n=50) were female teachers. Almost half of participants (n=26) had 6 to 10 years of teaching experience. Most participants (n=44) were subject teachers while 40 participants were graduates of Education Faculties and 41 were teaching grades 1 – 5 in the primary schools.

Instrument : A 3 – item questionnaire given below was used a base for framing responses in the study in the spring semester of 2007-2008 academic year and semi-structured interview technique was used to collect the qualitative data.

1. What is your opinion about inservice training (INSET) programs via distance education?
2a) What is your opinion about the effectiveness of the inservice training (INSET) program you participated in via distance education demonstrated by your computer and internet knowledge and skills?
2b) What is your opinion about the effectiveness of the inservice training (INSET) program you participated in demonstrated by your perceptions about computer and internet?
2c) What is your opinion about the effectiveness of the inservice training (INSET) program on your teaching skills, classroom applications as demonstrated by student behavior?
3. What is your opinion about the barriers related to the integration of your computer and internet knowledge and the skills you gained during the inservice training (INSET) program via distance education into your daily classroom activities?

After the questions were prepared, eight subject specialists and five preservice teachers from the Computer Education and Instructional Technology Department of Abant İzzet Baysal University provided feedback on the questions. Then, the interview questions were reviewed and reorganized in terms of their relevancy, appropriateness, clarity in meaning and of the language used as recommended by Glesne & Peshkin (1992) in order to prevent possible problems or misunderstandings that might happen during the test interviews. Finally, they were examined by 3 subject specialists on the Turkish language to ensure that there was no ambiguity in the use of the language in the questions.

To test the effectiveness of the questions, 10 primary school teachers who were taking graduate courses in Educational Sciences at Abant İzzet Baysal University in Bolu were given the questionnaire then interviewed. Before reading the questionnaire, teachers were both informed about the study and were told that their responses are only used within the scope of the study. Additionally, they were told that their names will not be used. For this purpose, each teacher was given a number (e.g. T1, T2, T3 and so on) as a code during the interviews. The questionnaires were given to teachers 2 or 3 minutes before interviews so that they could reflect on their INSET experiences and provide thoughtful responses. The findings of the pilot interviews indicated that teachers give almost similar answers. These findings are important in that they indicated the questions would be appropriate for the study and that teachers understood and interpreted the questions in the same way (see Glesne & Peshkin , 1992: 65 - 72). Also, these findings can be considered and interpreted as the validity of the interview questions. Meanwhile, it should be noted that during the interviews in the study the procedure mentioned above was followed.

Triangulation strategy was used to determine the reliability and validity of the instrument and to test credibility of the findings**.** According to Yıldırım and Şimşek (2006), triangulation is one of the strategies used to establish the validity and the reliability of the qualitative studies. They treated triangulation as the sum total of efforts in order to increase the credibility of the research findings obtained through using different data sources, different data collection and data analysis techniques in qualitative studies. In the present study, firstly, the interview questions were prepared by taking into account the feedback received from eight subject specialists and five preservice teachers from the Computer Education and Technologies Department of Abant İzzet Baysal University (AİBU); the university in Bolu and the related literature reviewed by the researcher. Secondly, the interview questions were reviewed and reorganized in terms of their relevancy, appropriateness, clarity in meaning and of the language used. Thirdly, having given the interview questions to 10 primary school teachers who were taking graduate courses in Educational Sciences at AİBU**,** their answers were then compared to the literature to examine if there was a correlation between the literature and teachers' answers. Fourthly, interviews were held with primary school teachers**.** Finally, during interviews, the data were compared to the literature once again.

The reliability of the study was examined in two ways as external reliability and internal reliability (Freebody, 2003). To establish the internal reliability of the data, the researcher reviewed the literature to see if the findings of the present study reflected the findings of similar studies. For this purpose, the researcher compared the findings of the present study with those from the literature to ensure that the findings of the present study form a meaningful unit and are defined according to the context in which the study was carried out (Yıldırım and Şimşek, 2006). To establish external reliability of the data collected, the researcher compared the findings of the present study with the literature. Even though this comparison indicated that the participants' answers were almost similar to each other and to the literature (e.g. Bradburn, 2007; Lee, 2006; Liu, Theodore and Lavelle 2004; Polselli, 2002) the researcher found some variations in the teachers' answers in the response analysis.

Data Analysis : Content analysis and continuous comparison techniques were used to analyze the data in order to find out concepts and relations that explain the collected data and summarize and interpret them descriptively; to recognize certain concepts and themes that are not discovered by descriptive approach (see Yıldırım and Şimşek, 2006). After the interviews were conducted, the interviews were analyzed by 3 subjects - specialists separately. The answers given in the interviews were compared to each other considering the appropriateness of teachers' opinions. Then, teachers' opinions were compared to each other in terms of their meanings and gathered, organized, interpreted under certain categories (themes). The opinions were then reported in terms of frequency and percentage values. Additionally, the findings of the interviews were compared to the literature and this comparison revealed a consistency between the findings of interviews and the literature (e.g. Brinkerhoff, 2006; Mitchem, Wells and Wells, 2003; Overbaugh and Lu, 2008; Wright and Wilson, 2007).

Results

Results tended to be similar to those of studies (Jimoyiannis and Komis, 2007; Karagiorgi and Charalambous, 2006 ; Mouzakis, 2008; Mulqueen, 2001) in western cultures.

Insert table 1 about here

As seen in Table 1, teachers' opinions about inservice training (INSET) programs via distance education, indicates that 57.5 % feel that the needs assessment procedure should be performed before INSET programs via distance education start; however, 6.5 % of them reported that INSET programs via distance education should be considered as an opportunity for teachers as the time and place independence of these allow teachers more flexibility and freedom and 9.6 % of them reported that INSET programs via distance education do not achieve their objectives due to various reasons.

Insert table 2 about here

As seen in Table 2, teacher responses about the effectiveness of the INSET program on their computers and internet related knowledge and skills show that even though 94.5 % of the primary school teachers believed that there had been a change in their computer and internet related knowledge and skills, 5.5 % of them believed that there had been no change in their computer and internet related knowledge and skills.

Insert table 3 about here

With regard to the effectiveness of the programs on teachers' opinions concerning the computer and the internet, Table 3 shows that 68.4% pointed out a change in their opinions related to computer and internet technologies, while 31.6 % pointed out no change in their opinions related to computer and internet as compared to the beginning of the program.

Insert table 4 about here

Almost all respondents (91.7 %) reported a change in their computer and internet applications in their classroom activities due to the effectiveness of the INSET, while only 9.5 % reported no significant change in their computer and internet related classroom applications as compared to the beginning of the program (see Table 4) .

Insert table 5 about here

Table 5 shows that over half of the participants (64.5 %), stated that there had been a change in their students' use of the computer and internet, in their participation in classroom activities and in their academic achievement levels, though 24.5 % stated they had observed no change in their students' use of the computer and internet and in their participation in classroom activities and in student academic achievement levels.

Many teachers (66 %) believed there had been an increase in their students' interests and their participation in the courses; on the other hand, 8.5 % of teachers believed there had been an increase in their students' computer and internet related knowledge, skills, use of these technologies and their students' confidence of using these technologies.

Insert table 6 about here

Table 6 demonstrates that even though teachers report positive outcomes for both them and their students as a result of participation in INSET programs, they feel that barriers to successfully integrating their skills and knowledge into daily classroom activities are substantial. As seen in the Table 6, more than half of the primary school teachers (60.3 %) reported that there are some barriers at their schools to integrate the computer and internet knowledge and skills they gained during the INSET program via distance education into their daily classroom activities. On the other hand, 26.0 % of the primary school teachers reported no barriers at their schools to integrate the computer and internet knowledge and skills they gained during the INSET program via distance education into their daily classroom activities. Of those who reported barriers, 72.7 % of respondents emphasized the existence of old versions of computer and internet facilities in the classrooms; however, 9.1 % of them reported the current education program as the barrier that they have.

Discussion

The aim of this study was to investigate primary school teachers' opinions regarding the effects of inservice training (INSET) programs via distance education implemented as web-based in Turkey. The findings of the study are limited to the opinions of 73 primary school teachers working in the central county of Bolu, Turkey in the spring semester of the 2007- 2008 academic year. The opinions of teachers do not represent and cannot be generalized as the opinions of all primary school teachers working in Bolu, Turkey in the spring semester of 2007-2008 academic year.

Needs assessment is considered as one of the most important stages of not only traditional INSET programs (e.g. Lees and Emmerson, 2006; Shannon, 2003) but also INSET programs via distance education (e.g. Kotyk, 2006). In line with this, primary school teachers in Özen's (2008) study emphasized the identification of INSET participants' needs as the most important activity of the planning of INSET programs via distance education. Therefore, there is a correlation between the opinions of primary school teachers both in the present study and in Özen's (2008) study since teachers in both studies emphasize the importance of needs assessment in INSET programs via distance education and consider assessing INSET needs as one of the most important activities of INSET programs via distance education.

Change is considered as one of the characteristics of effective INSET programs. According to Guskey (1985), the aim of most professional development programs is to make a change in teachers' beliefs, attitudes, and perceptions no matter where they are organized and for which purposes they are designed. He (1985) adds that these changes would be observed in their classroom behaviors and practices and their students' learning. In this regard, when the present study is concerned, changes were observed in teachers and in their students in terms of Guskey's (1985) findings. Generally, INSET programs via distance education that teachers participate in are effective since the participants of the present study report positive changes in their computer and internet knowledge and skills, their opinions about using the computer and the internet, their classroom activities and their students' interest and participation in classes, confidence in their uses of technologies and their knowledge and skills about these technologies having participated in the INSET programs.

Furthermore, results of the current study conducted with primary schools teachers in Turkey correlate with studies conducted among Western teachers (Jimoyiannis and Komis, 2007; Karagiorgi and Charalambous, 2006; Mouzakis, 2008 ; Mulqueen, 2001). Accordingly, the results of these studies indicate positive changes in teachers' technology knowledge and skills (Karagiorgi and Charalambous, 2006; Mouzakis, 2008), teaching practices (Jimoyiannis and Komis, 2007; Karagiorgi and Charalambous, 2006; Mouzakis, 2008; Mulqueen, 2001) and in their students' use of technology, and enthusiasm about course and class activities (Karagiorgi and Charalambous, 2006; Mulqueen, 2001). Researchers point out the importance of active participation of participants in the application of professional development programs as positive outcomes are reported as an end product of their participation (Darling-Hammond and McLaughlin, 1995; Lambert, 1988). Darling-Hammond and McLaughlin (1995) consider the active participation of teachers in the application of professional development programs as one of the characteristics of effective professional development programs.

They emphasize that teachers, like their students, learn by doing, reading, and reflecting, by collaborating and by looking closely at their students and their work, and sharing what they see. Lambert (1988) emphasizes the importance of active participation and involvement of participants in staff development programs and states positive effects as the outcome of this involvement. When staff development programs provide the involvement and the empowerment of the learners, teachers' beliefs about themselves, their jobs and their roles in and outside the school with their peers, their instructional programs will change and teachers will redefine their roles as producers of the new programs rather than consumers (Lambert 1988). Researches emphasize the active participation of teachers in the application of both traditional INSET programs and INSET programs via distance education since active participation in itself includes opportunities to observe their colleagues (or others) and to experience new things by themselves (learning by doing). Therefore, when involvement and active participation in these programs are provided for teachers, positive effects and changes in their professional knowledge, skills, behaviours, their opinions about themselves, their professions and colleagues and in their students' academic achievement levels, knowledge and skills, motivation to learn, positive behaviours are likely to be observed both in traditional INSET programs and INSET programs via distance education. For example, one respondent (T23) in the current study, a teacher with 11 to 15 years of teaching experience, commented that:

> "I think I feel myself more confident as compared to past in using computer and internet. Since the end of the training program, I have used computer and internet for different purposes."

Another participant (T8) from a more experienced group that has 16 to 20 years of teaching experience described the effectiveness of the INSET program as follows:

> "Having participated in the inservice training program, I am sure that my computer and internet knowledge and skills increased and I have used them both in my professional life and in my personal life."

Another highly experienced teacher (T56) commented on techniques learned from the program that are immediately useful in the teaching environment:

> "Before I participated in the INSET program via distance education, I used to download the power point slides prepared by others. However; having participated to the program, I have begun to prepare my own power point slides."

Another experienced teacher (T41), with 11 to 15 years of teaching experience, stated changes in his/her computer and internet knowledge and skills, as follows:

> "I have learned details of using visual images and drawing a table through Word, Excel and PowerPoint."

One of the participants (T70) explained the importance of using these technologies in the learning environments:

> "By the end of the program, I have realized better that the Internet can be used as a source of information for our courses, one of the means by which to access the kind of information that we can not reach at the libraries."

Another teacher (T63) with 6-10 years of teaching experience also pointed out the positive effects of the program on the use of technology in their classroom applications by the end of the program as follows:

> "Having participated in the program, I have begun to use computer and projection together more actively than before during instructional activities in my classes and I have realized that the class hours have become more interesting and enjoyable for the students. Furthermore**,** I have begun to use these technologies for different purposes, e.g. for preparing portfolios and measurement and evaluation tools."

Comments from these respondents represent the positive effects of the INSET programs on teachers as the consequence of their involvement in the INSET programs. In other words, the primary school teachers emphasized the various opportunities that were provided to them during the INSET programs they participated in and that enabled them to implement their INSET gains about the computer and internet in their classroom activities and practices in their schools. Their active participation in the application of the programs has had an effect on their opinions, knowledge and skills about computer and internet, their classroom applications and students.

Even though MoNE claims that necessary measures have been taken to apply for the effective integration of ICT into education (see Republic of Turkey, Ministry of National Education,n.d.), the findings of the present study reveal the presence of some barriers to successful integration of teachers' ICT knowledge and skills into their daily classroom activities. Teachers appear to relate these barriers with the education program, schools and teaching-learning environments and computer and internet facilities in the classrooms. Studies conducted in Turkey (Asan, 2003; Özdemir and Kılıç, 2007;Toprakci, 2006;Usluel, Mumcu and Demirarslan, 2007) report some of the barriers teachers have to integrate information and communication technologies (ICT) into their teaching-learning process in Turkey. These barriers include a limited number of computers, of INSET programs and training opportunities for teachers about ICT and ICT integration into classroom activities, limited administrative, colleague, technical and financial support and internet connections at schools, teachers' ICT knowledge and skills and their knowledge and skills regarding the integration of computer and internet technologies into their teaching-learning environments as classroom activities. The inconsistency between the school curriculum and the course content in terms of ICT applications and integrating ICT into classroom activities, the heavy workload of teachers in and out of school time, the versions and models of computers and of computer equipment, teachers' attitudes towards and perceptions about technology are other barriers Turkish teachers have for integrating ICT into their schools. In this regard, there is a correlation between the findings of studies conducted in Turkey with the present study.

Conclusion and Recommendations

The findings of the present study show that the INSET programs via distance education are effective for the primary school teachers in Turkey as the teachers report some positive changes in their computer and internet related knowledge and skills, opinions, classroom applications and in their students after participating in the INSET programs via distance education. Even though teachers reported positive changes in their computer and internet related knowledge and skills, opinions, daily classroom activities and in their students, they also reported the presence of some barriers related to the integration of into their classroom activities as a consequence of various factors. However, in order to examine the effects of INSET programs via distance education programs throughout Turkey, further studies need to be conducted in different regions of Turkey with large samples and using various data collection instruments. The necessary technical, financial and administrative support needs to be provided for the teachers to integrate computer and internet into their classroom activities. The INSET activities must be relevant for teachers' classroom activities and INSET activities must indicate the examples of how computer use and the internet are integrated into teachers' daily classroom activities. The active participation of the INSET participants should be provided through implementing various instructional activities during these programs and topics studied during these programs need to be related to teachers' school curricula and their subject areas. Finally, the number of training facilities and opportunities need to be increased for teachers to develop their computer and internet knowledge and skills.

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Table 1: Teachers' opinions about inservice training (INSET) programs via distance education

Teachers' opinions	f	%
The needs assessment procedure should be performed before INSET programs via distance education start.	42	57.5
The participation to INSET programs via distance education should be voluntary.	19	26.3
The INSET programs via distance education should be considered as a good opportunity for teachers as these programs are independent from time and place limitations and these provide freedom and flexibility for teachers.	5	6.5
The INSET programs via distance education do not achieve their objectives due to various reasons (e.g. people are not aware of the importance of these programs; there is no face-to-face interaction during these programs).	7	9.6

Table 2: Teachers' opinions about the effectiveness of INSET program they participated in via distance education on their computer knowledge and skills

Teachers' opinions	f	%
I think my computer - internet knowledge and skills have changed as I have learned new things, I develop and improve my computer and internet related knowledge and skills. Also, I have learned how to integrate my computer and internet knowledge and skills into my daily classroom activities.	69	94.5
I think there is no significant progress in my computer and internet related knowledge and skills.	4	5.5

Table 3: Teachers' opinions about the effectiveness of INSET program they participated in via distance education on their opinions about computer and internet

Teachers' opinions	f	%
I think my opinions related to computer and internet have not changed dramatically as compared to the beginning of the program. That is to say, before the program I have considered them as the technologies of the era, indispensable part of teaching – learning process and today, I still have the same opinions.	23	31.6
I think there is a change in my opinions related to computer and internet and I have realized that my positive opinions become stronger having seen how to integrate these technologies into my daily classroom activities.	50	68.4

Table 4: Teachers' opinions about the effectiveness of INSET program they participated in via distance education on their classroom applications

Teachers' opinions	f	%
As I have actively used computer and internet during the classroom activities, I realized an increase in students' use of these technologies and this attracted their attention and made their learning easier.	67	91.7
I think there is no remarkable change in my computer and internet related daily classroom activities considering the beginning of the program.	6	8.3

Table 5: Teachers' opinions about the effectiveness of INSET program they participated in via distance education on their students

Teachers' opinions	f	%
I do not think there are remarkable changes in my students' academic achievement levels, in their use of computer and internet and in their participation to classroom activities.	18	24.5
I think there are some positive changes in my students' academic achievement levels, in their use of computer and internet and in their participation toclassroom activities.	47	64.5
I have no idea.	8	11.0
Changes in Their Students	12	
I think there is an increase in their interests to computer and internet technologies and they mostly use these technologies for educational purposes (e.g. doing their assignments, doing research).		25.5
I think there is an increase in their interest and participation to the courses.	31	66.0
I think there is an increase in their computer and internet related knowledge and skills, their use of and confidence of using these technologies.	4	8.5

Table 6: Teachers' opinions regarding barriers for integrating INSET gains into daily classroom activities

Teachers' opinions	f	%
I believe there not any barriers at my school to integrate computer and internet into my daily classroom activities.	19	26.0
I believe there are some barriers at my school to integrate computer and internet into my daily classroom activities.	44	60.3
I have no idea.	10	13.7
The Barriers		
Barriers related to the education program (e.g. lack of time to use these technologies, the inappropriateness of course topics to use computer and internet).	4	9.1
Barriers related to schools and the teaching - learning environments (e.g. number of students in the classrooms, the physical conditions of the classrooms the students' characteristics, and the number of computers in the classrooms	8	18.2
Barriers related to computer and internet facilities in the classrooms (e.g. the number of computers in the classrooms, lack of internet connections in the classrooms, lack of necessary equipments to use computers and internet effectively, the old versions of computer equipments).	32	72.7