

THE USAGE OF INFORMATION TECHNOLOGIES IN CLASSROOM ENVIRONMENT AMONG PRIMARY SCHOOL TEACHERS AND THEIR PERCEPTION ON IN-SERVICE TRAINING PROGRAMS ON IT (SAMPLE OF SAKARYA)

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ABSTRACT

In this research, the opinions of teachers, who have received in-service trainings on the subject of information technologies, on their levels of use of information technologies in classes are investigated. A total of 164 teachers, who were working in the city of Sakarya in the 2007-2008 Academic Year, have participated in the research. A questionnaire has been administered to all of these teachers in order for them to evaluate the in-service trainings they had participated, and semi-structured interviews have been conducted with 45 of them. After the research, it has been observed that those teachers who have received in-service trainings on information technologies use information technologies in their classes, the levels of use of information technologies are higher among those teachers who are satisfied with the in-service trainings than those who are not, the problems that teachers encounter while using information technologies mostly stem from equipments, and schools that do not have any problems in terms of equipment lack internet connection and educational software.

Keywords: in-service training, use of information technologies

INTRODUCTION

Technology has influenced the educational process in line with its own development. Educational technologies have influenced all learning-teaching theories, teaching methods and issues such as media design and teacher training. In this respect, given the fact that the educational technology is an important discipline that has emerged to improve the quality and quantity of learning; for teachers, who are the directors of learning-teaching activities, to actively use educational technologies is a significant necessity. According to Taiwo (2009) in-service courses (or holiday courses) should be based in the College of Education and the Faculties of Education in Universities where experts can be assembled. Also according to Koc and Bakir (2010) pre-service teachers' technology adoption can be grouped into three main categories. The first group of work has focused on pre-service teachers' technology proficiency and experiences during their undergraduate education. Secondly, a number of studies have examined student and their readiness to use technology. Lastly, research has dealt with possible barriers influencing pre-service teachers' learning about educational technologies.

The Ministry of National Education (MNE) has initiated various projects for teachers to use information technologies in classes. Some of them are Temel Eğitime Destek (Support to Basic Education), Bilgisayar Formatör Öğretmen Eğitim Programı (Computer Computer Coordinator Training Program), Gelecek İçin Eğitim (Education for Future) and Uzaktan Öğretmen Eğitimi (Distant Teacher Training) Projects. Other than these projects implemented by MNE at the national level, in-service training courses have been organized by province and town directorates of national education in order to increase teachers' levels of use of information technologies. Integration of computer technologies in classroom still bears some problems. Financial and technical problems are certainly beyond what teachers can handle in their own classrooms, yet those problems related to affect, that is self-efficacy beliefs, values and judgments, can be solved through support and education and it should start with pre-service teacher education (Topkaya, 2010).

All these projects and in-service trainings aims at enabling teachers to use information technologies in their classes and preparation phases for classes as materials supportive to teaching. This research has investigated the opinions of teachers, who have received in-service trainings on the subject of information technologies, on their levels of use of information technologies in classes.

The aim of this research is to determine the extents elementary teachers working in schools affiliated with the Ministry of National Education use information technologies in their classes, and their levels of satisfaction with the in-service trainings provided on the subject of information technologies. For this general purpose, answers to the following questions will be sought.

1. Which information technologies are used by teachers in classes and how often they use them?

2. Which information technologies are considered by teachers to be beneficial to use in classes?
3. Does the information technologies computer coordinator assist teachers on information technologies?
4. For what purposes teachers benefit from information technology classrooms in schools?
5. To what extent teachers are supported by school managers in benefiting from information technologies in classes?
6. What are the problems that teachers encounter when they want to use information technologies in their classes?

METHOD

The survey model was used for this research, which aimed at assessing teachers' levels of use of computer technologies in classes. The data collection technique that was used in the study in order to determine the current situation is interviews. Interviews have been conducted with teachers in order to determine their levels of use of computer technologies in classes. The interviews have been conducted by the researcher using the interview guides distributed.

In the research, semi-structured interviews have been conducted with 45 voluntary teachers. For this purpose, a Teacher Interview Guide has been prepared. There were three different interviewing approaches in the interview method; informal conversational interview, general interview guide approach and standardized open-ended interview (Patton, 1987, quoted by: Yıldırım and Şimşek, 2004). Among these approaches, the interview guide is prepared in order to obtain similar kinds of information from different people by orienting towards similar topics. Thus, the researcher can ask not only previously-prepared questions during the interview, but also additional questions to obtain more detailed information, and he/she can alter the order of the questions. The interview guide is a method developed in order to ensure the scope of all dimensions and questions connected to the research problem (Yıldırım and Şimşek, 2004).

During the process of the development of the Teacher Interview Guide, firstly, the information technology use behaviors that teachers must acquire in the in-service trainings on Information Technologies have been determined by benefiting from experts' opinions and the reports prepared by MNE. In this framework, interview questions, aimed at determining teachers' satisfactions with the in-service trainings they had received and whether they use the Information Technologies use levels that they had learned in these trainings, have been prepared.

The working group of the research was made up of teachers working in a total of ten elementary schools located in the city center of Sakarya and in the District of Hendek in the 2007-2008 Academic Year. In the research, 164 teachers have participated in the questionnaires and interviews have been conducted with 45 of them.

In the analysis of the data obtained through semi-structured interviews in this research, the descriptive analysis method was used. The reason this method was chosen is that the main dimensions of the theoretical framework have been formed in the research.

FINDINGS

1. Of the teachers participated in the interviews, 17 were females and 28 were males. Of the total of 45 teachers interviewed; 30 were elementary school teachers, 4 were math teachers, 2 were teachers of religious culture and moral knowledge, 2 were foreign language teachers, 2 were physical education teachers, 1 was teacher of guidance and psychological counseling, 1 was painting and 1 was Turkish language teacher.
2. Of the teachers, 37.77% (17) have reported that they use TV-VCD, 35.33% (15) use computer and projector, 17.77% (8) use the internet, 4.44% (2) use educational software in their classes.

When the opinions of those teachers who use computer technologies in their classes are analyzed, they reported that classes are more productive, their students participate in the class, and they direct attention to the class. A classroom teacher reported that *“she uses computer, projector and CDs in her classes, and addressing students with more resources ensures faster and more permanent learning”*. Another classroom teacher's opinions are as follows:

“I use only computer, projector, internet and educational CDs in classes. I use them two hours per week. Such technologies are not available in all of our classrooms. I use the Computer Technology classroom when necessary. I only make presentation in this classroom. Sometimes, students use computers, too. My students' interests in and curiosities

3. 62,22% (28) of 45 teachers participated in the research reported that they use CT in their classes, while 38,78% (17) of them reported that they do not.

When the reasons of those teachers who do not use CT in their classes not to use CT are examined, it became evident that the schools they work lack CT and they do not feel the necessity to use CT. A classroom teacher reported that he/she cannot use CT since the CT facilities in his/her school are limited. A Math teacher stated “*I do not use CT in classes and I do not feel the necessity to use. Why? Because there are no materials related to the Math course*”.

4. Of the participant teachers, 37.78% (17) reported that they never use CT, 21.44% (11) reported that they sometimes use CT, and 35,56% (16) reported that they use CT in their classes frequently.

It was determined that it is easier for those teachers who use CT in their classes to get prepared and present the lessons, students in their classes more actively participate in the class, and their classes are more productive. It was also determined that those teachers who do not use CT in their classes do not use CT because their schools lack CT facilities, they do not feel the necessity and they do not have the required educational software.

5. Of the participant teachers, 44.44% (20) reported that having computer and projector, 15.55% (7) internet, 11.11% (5) educational software and 11.11% (5) reported that having digital camera, camera and printer in the classroom will be beneficial for them.

All of the teachers who cannot use CT due to the lack of CT facilities in classrooms think that having CT facilities in classrooms will be beneficial for their classes.

Specialty area teachers think that having the CT facilities, which are present in some classrooms, in all classrooms will be beneficial, and teachers who actively use CT in their classes think that the presence of the internet and educational software in classrooms will be beneficial in lessons.

11.11%, (5) of the participant elementary school teachers think that having video cameras and printers will be useful to record student activities and to take printouts when necessary.

A elementary school teacher reported that they do not have educational software and the MNE has neither sent to them the educational software CDs indicated in guide books, nor informed them about the ways to get them, for two years by stating: “*The guide books sent to us by the Ministry order 'Show this CD', but such a CD does not exist. They do not send them*”.

Teachers' CT needs differ according to the CTs present in schools. While those teachers whose schools do not have any CT facility think that the CT facilities will be useful in the ways the lessons are taught, those teachers whose schools possess all kinds of CT facilities reported that using internet and educational software in classes will be more useful.

A majority of the teachers use the CTs present in their schools. Teachers need educational software since the MNE has not delivered the educational software indicated in its guide books to schools. If the CT deficiencies in schools are removed, it can be said that teachers will integrate CT to their classes.

6. Of 45 participant teachers, 60% (27) reported that the information technologies coordinator assisted them whenever they need 24.44% (11) reported that they had never been in need of assistance and 15.55% (7) reported that there was not a information technologies coordinator in their schools.

When the opinions of those teachers who stated that they are assisted by information technologies computer coordinators are analyzed, it became evident that information technologies computer coordinators assist them in every sense on CT but they sometimes cannot assist due to their high workloads. A classroom teacher explained this situation as follows: “*The information technologies computer coordinator assists us when we need, but he generally does not have free time since his workload is too high*”.

Those teachers who do not feel the necessity for such assistance reported that they are capable of coping with problems and they are more knowledgeable about CT issues more than information technologies computer coordinators are.

It was determined that, in schools where information technologies computer coordinators are present, teachers can get assistance from computer coordinators but some troubles might be experienced due to high workloads of information technologies computer coordinators.

7. Of the participant teachers, 28.89% (13) reported that they use the CT classroom, and 71.11% (32) reported that they do not.
 - 7.1. Of the participant teachers 84. 61% (11) reported that they use the CT classroom for presentation, and 15.38% (2) reported that they use it for educational software.
 - 7.2. When the opinions of those teachers who reported that they do not use the CT classroom are examined, it became evident that 37,04% (10) of them reported that the CT classroom is always occupied, 29,83% (8) of them stated that they do not need the CT classroom, 18,52% (5) of them stated that their classes are too crowded and 14,80% (4) of them reported that the software they need are not available in the CT classroom.

While 37% of the teachers who do not use CT classrooms do not use them willingly, while 63% of them do not use them due to lacks, crowdedness or deficiencies of software.

It is concluded through the findings obtained from this question that teachers benefit from CT classrooms in order to present the lesson with rich educational materials, that the current situations of the CT classrooms in schools do not enable teachers to use these classrooms and that teachers will use CT classrooms more when the quantity and quality of CT classrooms are increased.

8. 75.56% (34) of the participant teachers reported that they receive support from their managers in using CT in classes, 13,33% (6) of them reported that they do not need any support and 11,11% (5) of them reported that they do not receive any support from their managers.

When the opinions of those teachers who reported that they receive support from their managers are analyzed, the prominent opinions are that managers send teachers to in-service training courses, they provide support in terms of purchasing CT facilities to the school, and they arrange programs for the use of the CT classroom. A classroom teacher underlined the support they receive from managers by stating *“Our managers provide us with any kinds of support in terms of the use of CTs. They enable us to receive trainings when necessary, and they purchase the facilities required for the classes”*.

When the opinions of those teachers who reported that they do not need to receive support from their managers are analyzed, it was observed that they are unwilling to use CT in their classes, and managers do not impose any sanctions on them. A Math teacher expressed his unwillingness to receive support from managers by stating *“We do not want any support from our managers, after all they do not force us about what to use and not”*.

When the reasons of those teachers who reported that they do not receive any support from their managers are analyzed, it was concluded that either managers are uninterested in or they do not have adequate knowledge about the issue of CT. A classroom teacher stated

“In a meeting, we talked about the necessity of establishing a wireless network in the school, and the fact that everybody has portable computer. Our managers found this idea favorable at first, but they changed their minds after a colleague told that wireless networks are unhealthy”. Another classroom teacher mentioned about the disinterestedness of the managers in CT by stating *“Our managers only remind us our responsibilities, but they do not take any steps that might support us while using CTs”*.

It was determined that managers generally support teachers in terms of using CT in classes, and that those managers who have inadequate knowledge about CT do not have any negative attitude towards the use CT in classes.

9. 38,78% (17) of the participant teachers reported that they do not use CT in their classes, while 62,22% (28) of them reported that they do.
 - 1.9.1 73,53% (25) of the teachers reported poor CT facilities, 11,76% (4) of them reported the lack of course materials, 8,82% (3) of them reported the difficulty of classroom management and 5,88% (2) of them reported the breakdown of the CTs they use as the big problems they encountered.
 - 1.9.2 When the opinions of those teachers who reported that the CT facilities in their schools are poor are analyzed, 52% (13) of them reported that the classrooms do not have any CT facilities at all, 20% (5) of them reported that speed of the internet connection in classroom is slow, 16% (4) of them

reported that the CT facilities in classrooms are inadequate and 12% (3) of them reported that the CT facilities already present in classroom are old.

The problems encountered by teachers while using CT are mostly based on hardware, and this is followed by the lack of educational software and the difficulty of classroom management. It was also concluded that the problem in the schools with no hardware problem are the lack of internet connection and educational software.

10. All of the participant teachers (45) reported that they had attended to basic educational courses. Of these teachers, 40% (18) also attended to Intel education for the future course, 13.33% (3) also attended to web design course, 6.67% (3) also attended to Publisher Course and 2.22% (1) also attended to formater teaching course.
11. Of the 45 participant teachers, 46.67% (21) reported that the in-service trainings satisfied their expectations, while 53.33% (24) of them reported that they did not.

Those teachers who reported that their expectations have been satisfied stated that they started to use computers better, they started to use computers more actively in classes and they started to use the computer certificates they received in efficient teaching.

Those teachers who reported that their expectations have not been satisfied justified this by mostly pointing out the oldness of computer facilities, the idea that their opportunities to put what they had learned in practice were low and that the attendance was compulsory. A classroom teacher explained his dissatisfaction with the course by stating *“It did not satisfy my expectations, because we attended to the course compulsorily. How can you expect from a course that you attend compulsorily to satisfy your expectations? I would have learned if I had attended willingly”*.

It is observed that those teachers who learned to use computer better and who adapted this into classes are prominent among those who reported that the courses satisfied their expectations.

On the other hand, those teachers who proposed the ideas that the facilities were old and non-operational, that they could not have the opportunity to implement what they learned, and that they attended to these courses compulsorily are prominent among those teachers who reported that the courses did not satisfy their expectation.

12. While 44.44% (20) of the participant teachers reported that the in-service trainings on CT they received became useful for them to use CT in classes, 55.56% (25) of them reported that they did not.

When the interviews conducted with those teachers who reported that the in-service trainings they received became useful for them to use CT in classes are analyzed, it is observed that the in-service trainings they received increased the CT use in classes, that they use CT more, and that their students' motivations and achievements increased, thanks to the increased CT use in classes. One of elementary school teacher stated,

“Yes I use CT in classes. It is useful after using computer in classes, while getting prepared for the class and during the lecture. Erstwhile, preparation for the class used to take too much time, this duration has decreased thanks to the course. Besides, students' interests In the class have increased when I lecture using computer or projector. I observe that students are more motivated when I use computer in the class. Moreover, I can say that I observed an increase in their achievements”.

When the interviews conducted with those teachers who reported that the in-service trainings they received did not become useful for them to use CT in classes are analyzed, the most popular reasons they proposed are the inadequacy of courses, the few number of computers in the classrooms where the courses took place, and the crowdedness of classrooms when they felt the necessity to use CT. A classroom teacher stated that *“he cannot use CT since classrooms lack computer, projector and screen”*. Another classroom teacher said:

“Classrooms lack computer, screen, projector etc. I cannot use them in classes. Not only me, but also the whole secondary stage teachers in this school cannot. I use computers for collecting lecture notes and creating materials at home”.

The teachers who do not use CT since they do not feel the necessity proposed the inadequacy of educational materials as the reason for this. A Math teacher stated:

“In-service trainings have not been useful; I already knew what they taught. After all, I already use computer at home. I do not use it at school. Why? Because I do not need it. Besides, there

are no materials related to mathematics. I consider the computer use in classes to be unnecessary”.

It was determined that the in-service trainings have been useful for those teachers who use CT in their classes; and for those who do not use, CT and physical infrastructures are inadequate in schools.

CONCLUSIONS

It is evident that it is easier for those teachers who use CT in their classes to get prepared for the class and to lecture, their students participate in the class more actively, and their classes are more productive. It was also determined that those teachers who reported that they do not use CT do not use it since their schools lack of CT facilities, they break down frequently, they are old, they do not need to use CT and their schools lack the required educational software.

While those teachers whose schools do not have any CT facility think that the CT facilities will be useful in the ways the lessons are taught, those teachers whose schools possess all kinds of CT facilities reported that using internet and educational software in classes will be more useful. Teachers need educational software since the MNE has not delivered the educational software indicated in its guide books to schools.

It was determined that, in schools where information technologies computer coordinators are present, teachers can get assistance from computer coordinators but some troubles might be experienced due to high workloads of computer coordinator. It was also concluded that the teachers in schools that do not have any information technologies computer coordinator cannot get assistance in the issues of information technologies. Those teachers who do not feel the necessity for such assistance reported that they are capable of coping with problems and they are more knowledgeable about CT issues more than information technologies computer coordinators are.

It is observed that teachers benefit from CT classrooms in order to present the lessons with rich educational materials. It was also observed that the current situations of the CT classrooms in schools do not enable teachers to use these classrooms and that teachers will use CT classrooms more when the quantity and quality of CT classrooms are increased.

It was concluded that managers assist teachers in the use of CT in classes, and some managers allocate class hours for courses other than the Information Technologies course while determining the schedule of the CT classroom. It was also concluded that those managers who have inadequate knowledge about CT do not have any impact on teachers in terms of the use of CT in classes.

The problems encountered by teachers while using CT are mostly based on hardware, and this is followed by the lack of educational software and the difficulty of classroom management. It was also concluded that the problem in the schools with no hardware problem are the lack of internet connection and educational software.

The findings related to the teachers' satisfactions with the in-service trainings were presented under the headings of the satisfaction of expectations from the in-service trainings, the influence of the in-service trainings on the CT use in classes, the influence of the satisfaction levels with the in-service trainings on the frequency of CT use, the opinions about course teachers, methods and techniques, training materials and course duration.

The teachers who are satisfied with the in-service trainings they received are able to use the computer better and adapt it to the class. On the other hand, those teachers who reported that the courses did not satisfy their expectations proposed the ideas that the facilities were old and non-operational, that they could not have the opportunity to implement what they learned, and that they attended to these courses compulsorily.

It was determined that the in-service trainings have been useful for those teachers who use CT in their classes; and those who do not use CT in their classes do not use it not because of the inadequacy of the courses but because of the fact that CT and physical infrastructures are inadequate in their schools.

It was concluded that the half of those teachers who are satisfied with the in-service trainings always use CT in their classes, and the half of the teachers who are not satisfied with the in-service trainings never use CT in their classes.

REFERENCES

- Akkoyunlu, B. (1998). *Eğitimde Teknolojik Gelişmeler*, Eskişehir: Anadolu Üniversitesi Açık öğretim Fakültesi Yayınları.
- Baltacı, A. (2005). *Ortaöğretim Okullarında Teknoloji Kapasitesi Kullanımı Hakkında Öğretmen Görüşleri (Ankara İli Altındağ İlçesi Örneği)* Yüksek Lisans Tezi, Ankara: Ankara Üniversitesi.
- Çatmalı, M. (2006). *“Gelecek İçin Eğitim” Hizmetiçi Eğitim Kursunun Değerlendirilmesi*, Balıkesir Üniversitesi.
- Gilmore, A. M. (1995). *Turning Teachers On To Computers: Evaluation Of A Teacher Development Program*. Journal of Research on Computing in Education.
- Groth, L. A. , Dunlap, K. L., Kidd, J. K. (2007). *Becoming Technologically Literate Through Technology Integration in PK-12 Preservice Literacy Courses: Three Case Studies*. Reading Research and Instruction.
- Hadley, M., Sheingold, K. (1993). *Commonalties and distinctive patterns in teachers' integration of computers*. American Journal of Education.
- Işman, A. (2005). *Öğretim Teknolojileri ve Materyal Geliştirme*, Ankara: Pegem Yayınları.
- Küçükahmet, L. (1998). *Öğretim İlke ve Yöntemleri*. İstanbul, Alkım Yayınları.
- Kiliç, E., Özdemir, S. (2003). *Milli Eğitim Bakanlığı Temel Eğitim Projesi Kapsamında Kurulan Bilgi Teknolojileri Sınıflarının Değerlendirilmesi*. Antalya: XII. Eğitim Bilimleri Kongresi.
- Kipperman, D. (2005). *Science and Technology links in Israeli Secondary Schools - Do We Have a Reason to Celebrate* ORT, Israel
- Koc, M., Bakır, N. (2010). *A Needs Assessment Survey To Investigate Pre-Service Teachers' Knowledge, Experiences And Perceptions About Preparation To Using Educational Technologies*, The Turkish Online Journal of Educational Technology (TOJET), Volume 9 Issue 1, 13-22
- MEB. (2006). *Temel Eğitime Destek Projesi “Öğretmen Eğitimi Bileşeni” Öğretmenlik Mesleği Genel Yeterlikleri*, Ankara.
- Taiwo S. (2009). *Teachers' Perception Of The Role Of Media In Classroom Teaching In Secondary Schools*, The Turkish Online Journal of Educational Technology (TOJET), Volume 8 Issue 1, 75-81
- Taymaz, H. (1997). *Hizmet İçi Eğitim*, Takav Yayınevi, Ankara.
- Topkaya, E.Z.(2010) *Pre-Service English Language Teachers' Perceptions Of Computer Self-Efficacy And General Self-Efficacy* The Turkish Online Journal of Educational Technology (TOJET), Volume 9 Issue 1, 143-156
- Yıldırım, A. & Şimşek, H. (2004). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri*. Ankara: Seçkin Yayıncılık.
- Yalın, H. İ. (2002). *Öğretim Teknolojileri ve Materyal Geliştirme. (Altıncı Baskı)*. Ankara, Nobel Yayınları.