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Problems and Solution Suggestions Related to Information Technology Course according to Elementary School Principals and Information Technology Teachers (A Case from Eskişehir)

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Abstract

The purpose of the present study was to determine the problems experienced with the Information Technology (IT) course given as an elective course in elementary schools and to put forward suggestions for solutions to these problems. For this purpose, this study was carried out within the framework of phenomenology. The study was carried out with 10 school principals and 10 IT teachers from elementary schools in Eskişehir province in the academic year of 2010-2011. The researchers held informal conversations with the IT teachers, elementary school principals, teacher trainers from the Provincial Directorate of National Education, academicians from the department of Computer Education and Information Technology and with policy makers. The semi-structured interviews were held with the school principals and with the IT teachers. Reflective diaries were kept during the research. The inductive analysis method was used for the analysis of the data collected in the study. According to the research findings, the problems and solution suggestions related to IT course were grouped under four themes. These were education program, structure of the IT course, institutional infrastructure and stakeholders' perceptions regarding the IT course. School principals' and IT teachers' outstanding solution suggestions about the problems were the development of the education program to meet the needs of the day, raising awareness of IT teachers and school principals for the selection of IT course resources, being conducted IT courses by graduates in field of IT and updating infrastructure of the school. In addition, participants reported that if these problems were resolved, stakeholders' negative perceptions would disappear.

Key Words

Information Technology Course, Information Technology Teachers, Elementary School Principals, Information Technology Courses' Problems and Solution Suggestions.

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Today, developments in technology and science affect the educational system directly as well as other fields and through new technologies it becomes a necessity to raise individuals appropriate to features of information age and society (Akkoyunlu, 1995; Memmedova, 2001; Uşun, 2004). Many countries in the World aim to prepare students for social life in which technology is dominant in parallel with technological developments. In Turkey it is believed that informational technology improves the quality of education. So; the projects carried out by Ministry of Education to generalize and use tech-

nological devices efficiently in schools focused on information technology mostly, it is aimed to improve students' computer literacy and integration of information technology to primary education (Milli Eğitim Bakanlığı [MEB], 2001, 2002, 2009, 2011; Özar ve Aşkar, 1997). Information Technology (IT) classes are opened to allow students to reach information related to information technology and gain skills for using information. Through this IT course was added to elective courses in primary schools in 1998- 1999 academic year and the syllabus is updated (MEB, 1998; Talim ve Terbiye Kurulu Başkanlığı [TTKB], 2006, 2007). According to this program IT courses are carried out in 4th and 5th grades in primary schools two hours in a week, one hour in a week in other grades beginning from first grade to eight grade by IT teachers and prospective teachers (MEB, 2007; TTKB, 2007). Since 2010-2011 academic year IT course is removed from 1st – 5th grades, left in 6th, 7th and 8th grades as an elective course lasting for one hour (TTKB, 2010). Qualified human resource becomes a necessity to carry out IT courses in school and use this course in other courses efficiently in accordance with the objectives of ministry. To meet the need in-service training courses are held to train IT teachers (Kabakçı & Odabaşı, 2007). IT teachers are responsible for ensuring IT classes to be used appropriately and organized, taking the responsibility and management of these classes as well as teaching the IT lesson (MEB, 1993, 2007).

Within the scope of the program conducted by the Council of Higher Education in 1998 to meet the need for IT teachers in elementary schools with the help of IT teacher-trainers and to re-structure the education faculties, the departments of Computer Education and Instructional Technologies (CEIT) were established to meet the needs of the MEB. Graduates of this department were appointed by MEB to primarily elementary schools as well as to secondary schools as IT teachers.

When the related literature was examined, it was seen that importance of information technology was emphasized (Akkoyunlu, 1995; Memmedova, 2001; Uşun, 2004) and the studies conducted were mostly related to the evaluation of the education program of the IT course (Alkan, 2009; Arıkan, 2010; Aydın, 2009; Deryakulu, 2005; Deryakulu, 2008; Deryakulu & Olkun, 2006; Dönmez, 2009; Durdukoca & Arıbaş, 2011; Hammond & Cartwright, 2003; Kabakçı-Yurdakul & Kurt, 2011; Kabakçı, Kurt & Yıldırım, 2008; Kabakçı & Odabaşı, 2007; Kangro & Kangro, 2004; Karal, Reisoğlu, & Günaydın, 2010; Kılınç & Demir, 2011; Kural Er, 2006; Özdener, 2007; Öztok, 2007; Seferoğlu, 2007; Tanataş, 2010; Taşkıran, 2006). In addition, in related literature, it was seen that a number of studies conducted with IT teachers focused on the problems experienced with the IT course (Akbıyık & Seferoğlu, 2009; Altun & Ateş, 2008; Arıkan, 2010; Arıkan & Kale, 2009; Bektaş, 2006; Dirisağlık & Kabakçı, 2008; Eyidoğan, 2009; Hammond, 2001; Karal & Timuçin, 2010; Karataş, 2010; Keleş & Türedi, 2011; Kural Er, 2006; Kurt & Sular, 2011; Kuvan, 2009; Okay, 2007; Ökten & Horzum, 2011; Özoğul, 2006; Seferoğlu, 2007; Steinke & Putnam, 2007; Şerefoğlu Henkoğlu & Yıldırım, 2012; Tanataş, 2010; Timuçin, Öngöz, & Tatlı, 2007; Topu, 2010; Türk, 2008; Yaprak, 2009). The basic source of the most important problems experienced during IT education could be said to be the fact that the IT course is an optional course and that the time allocated to this course is limited (Şerefoğlu Henkoğlu & Yıldırım). As a solution to the problems experienced with the IT course, most IT teachers suggest that students' achievements in the course should be assessed and that it should be among compulsory courses (Arıkan & Kale; EğiTek, 2007). There are also some researches examining school principals' opinions about IT course (Afshari, Bakar, Luan, Samah, & Foo, 2008; Akbaba-Altun & Gürer, 2008; Brockmeier, Sermon, & Hope, 2005; Ergişi, 2005; Kozloski, 2007; Köse & Gezer, 2006; Schiller, 2003; Seferoğlu, 2009; Semenov, 2005; Turan, 2002; Wicklein, 2004).

Purpose

The purpose of the present study was to determine the problems experienced with the IT course given in elementary schools based on the views of elementary school principals and IT teachers and to put forward suggestions for solutions to these problems. For this purpose, the following research questions were directed in the study: (i) What are the problems experienced with the IT course according to elementary school principals? (ii) What are the problems experienced with the IT course according to IT teachers? (iii) What are school principals' suggestions for solutions to the problems experienced with the IT course? (iv) What are IT teachers' suggestions for solutions to the problems experienced with the IT course?

Method

Research Model

The present study was carried out within the framework of phenomenology (Patton, 2002; Yıldırım & Şimşek, 2006). Within the scope of phenomenology, in the study, the problems experienced with the IT course and the suggested solutions to these problems were examined in line with the participants' experiences.

Study Group

The study was carried out with 10 school principals and 10 IT teachers from elementary schools of MEB in the academic year of 2010-2011. The reason for including school principals and IT teachers in the study was that it would be the school principals and IT teachers who could not only express the problems with the IT course best but also suggest solutions to these problems. In addition, school principals are those who know about the problems of teachers and who can put forward solutions to these problems, shape the lesson programs of teachers and determine the optional courses (the IT course is an optional course) (MEB, 2003; Şişman, 2002).

The participants of the study were determined with the purposeful sampling method in two phases. In the first phase of determining the research sample, the criterion sampling method was used. The criterion sampling method allows determining the participants who have certain characteristics and who meet certain criteria (Gay, Mills, & Airasian, 2006). In this study, the criteria determined for selection of the sample were as follows: (i) Graduation from the department of CEIT, (ii) Working as an IT teacher for three years or more, (iii) Working as an IT teacher.

20 schools meeting these criteria were determined with the help of the information provided by the Provincial Computer Coordinator of the Provincial Directorate for National Education. In the second phase of shaping the research sample, 10 schools were determined with the random purposeful sampling method. The school principals participating in the study were the principals of the IT teachers determined.

Validity and Reliability

There were four faculty members in the validity committee (Fraenkel & Wallen, 2003). A1 and A2 read the interview transcripts independently and created the themes independently (Creswell, 2005; Lincoln & Guba, 1985; Maxwell, 2005; Yıldırım & Şimşek, 2008). For the comparison of the themes created by A1 and A2, the reliability calculation formula put forward by Miles and Huberman (1994) was used. The inter-researcher agreement rate was found to range between 89% and 95%. The themes on which there was no agreement were discussed by the validity committee, and an agreement was reached.

Data Collection Process

The researchers held informal conversations with the IT teachers, elementary school principals, teacher trainers from the Provincial Directorate of National Education, academicians from the department of CEIT and from other departments in the Education Faculty and with policy makers. According to the review of the related literature and in line with the informal conversations, the semi-structured interview questions were prepared. The semi-structured interviews were held with the school principals and with the IT teachers during the informal conversations.

Data Analysis

For the analysis of the data collected in the study, the inductive analysis method, one of content analysis methods, was used. For the inductive analysis, the data were classified with respect to their types to prepare for the analysis. Within the scope of this classification, the data were transcribed and organized. This transcription was primarily examined by the researchers. Following this examination, each researcher conducted the coding process independently, and the themes were formed. During the analysis of the data, the researchers compared the themes, and the reliability was calculated with the formula of [Agreement /(Disagreement +Agreement)]*100 (Miles & Huberman, 1994). For the themes related to the problems, the reliability was found to be 94+%, while it was calculated as 82% for the themes related to the suggested solutions.

Findings

Education Program

IT Course Program Losing Its Function: Within the scope of the study conducted, as one of the

problems with the education program, the sub-theme regarding the loss of the function of the IT course program was found to have a high frequency value [T=7, SD=5].

IT Course Books Failing to Meet the Needs: Within the scope of the study, another problem related to the education program was found to be the sub-theme regarding the failure of the IT course books to meet the needs (Teacher [T=4], School Principals [SP=1]).

Structure of the Education System: Within the scope of the study conducted, one of the problems related to the education program was revealed as the sub-theme regarding the structure of the education system [T=6, SP=6].

Structure of the IT Course

IT Course Being Optional: Within the scope of the study, one problem with the structure of the IT course was found to be the sub-theme regarding the IT course being optional [T=8, SP=3].

Decreasing the Weekly Course-Hours of the IT Course: Within the scope of the study, another problem related to the structure of the IT course was determined to be the sub-theme regarding decreasing the weekly course-hours of the IT course [T=7, SP=4].

Institutional Infrastructure

Non-Updated Technologies: Within the scope of the study, one of the problems related to the institutional infrastructure was found to be the sub-theme regarding non-updated technologies [T=2, SP=6].

Crowded IT Classrooms: Within the scope of the study conducted, another problem with the institutional infrastructure was related to the sub-theme of crowded IT classrooms [T=6, SP=3].

Distribution of IT Classroom Computers to Other Classrooms: Within the scope of the present study, as one of the problems with the institutional infrastructure, the sub-theme of crowded classrooms was found to have a low frequency level [T=2, SP=1].

Lack of Instructional Materials: Within the scope of the study, as another problem with the institutional infrastructure, lack of instructional materials was determined to be another sub-theme [T=5, SP=3].

Stakeholders' Perceptions Regarding the IT Course

Within the scope of the study conducted, the sub-theme regarding the stakeholders' perceptions of the IT course was found to have a frequency of [T=8, SP=4].

Conclusion and Suggestions

The IT course and the related problems experienced by IT teachers have recently been among the most important problems in education. In a number of related studies conducted, it is seen that the problems reported by IT teachers are similar. In addition, the fact that the same problems with the IT course have been constantly mentioned for years and that the problems in question have not been solved yet prevent achievement of the goals of the IT course. Reducing the length of time of IT course, having no credit, taking no part in the student placement exams can be seen as the obstacles for the success of the course. Since IT course is elective, has no credit in school report; students, other teachers, school board and parent think this course is unimportant. Moreover, technologies which are out of date and crowded classes are the elements affecting the teaching of this activity-based course negatively.

Regarding the problems mentioned above, the prominent solutions suggested by the school principals and by the IT teachers are as follows;

- The content of the IT course should be updated in a way to meet the current needs, and the lessons should be taught on project-basis,
- The IT course should be compulsory until the elementary school 6th grade and optional in 7th and 8th grades,
- The optional courses should be on the basis of the student's preference rather than on the basis of the management's decision, and students should be encouraged to choose them,
- As the IT course is an applied course, the concepts of class management and time management should be emphasized, and the course should be taught in two course hours a week,
- Technology planning should be made considering the changing and developing technology, the institution's needs and the necessary programs,
- The IT course should be chosen considering the number of the students as well as that of the computers in the class,

- Within the scope of especially the IT course and of other courses, the course materials requiring technological devices should constantly be developed and updated centrally.

Since technology is accepted as indispensable in todays and it is supposed that it is possible to decrease the gap between developed countries through using technology, IT course takes a key role in teaching technologies used in education. IT course is not only necessary for informing students about information technology but also it is necessary for other courses in school.

References/Kaynakça

Afshari, M., Bakar, K. A., Luan, W. S., Samah B. A., & Foo, S. F. (2008). School leadership and information communication technology. *The Turkish Online Journal of Educational Technology, 7* (4), 82-91.

Akbaba-Altun, S. ve Gürer, M. (2008). İlköğretim okulu yöneticilerinin bilgi teknolojisi (BT) sınıflarına yönelik rollerine ilişkin algıları. *Eurasian Journal of Educational Research, 33,* 35-54. http://www.ejer.com.tr/pdfler/tr/2111365074.pdf adresinden 05.05.2012 tarihinde edinilmiştir.

Akbıyık, C. ve Seferoğlu, S. (2009). Bilişim teknolojileri öğretmenlerinin öğrenci beklentilerine ilişkin görüşleri ve derslerde karşılaştıkları disiplin sorunları. Çukurova Üniversitesi Eğitim Fakültesi Dergisi, 3, 39-52.

Akkoyunlu, B. (1995). Bilgi teknolojilerinin okullarda kullanımı ve öğretmenlerin rolü. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *12,* 105-109.

Alkan, A. (2009). *Bilişim teknolojileri dersinde istenmeyen öğrenci davranışlarına yönelik öğretmen görüşleri (İlköğretim II. kademe Samsun ili örneği*). Yayınlanmamış yüksek lisans tezi, Sakarya Üniversitesi, Sakarya.

Altun, E., & Ateş, A. (2008). The problems and future concerns of computer and instructional technologies preservice teachers. *Elementary Education Online, 7* (3), 680-692.

Arıkan, Y. D. (2010). Bilişim teknolojileri öğretim programı. S. Şahin (Ed.), *Bilgisayar ve öğretim teknolojileri eğitimi özel öğretim yöntemleri I-II.* içinde (s. 73-94). Ankara: Pegem A Yayıncılık.

Arıkan, Y. D. ve Kale, G. (2009). İlköğretim bilişim teknolojileri dersine ilişkin öğretmen görüşleri. Yayınlanmamış araştırma raporu, Ege Üniversitesi.

Aydın, Ş. (2009). İlköğretim okullarında bilişim t*eknolojileri dersi yeni öğretim programının öğretmen görüşlerine göre değerlendirilmesi.* Yayınlanmamış yüksek lisans tezi, Atatürk Üniversitesi, Erzurum.

Bektaş, C. (2006). İlköğretim okullarında bilgisayar derslerine ilişkin öğretmen görüşleri *(Elazığ ili örneği).* Yayınlanmış yüksek lisans tezi, Fırat Üniversitesi, Elazığ.

Brockmeier, L. L., Sermon, J., & Hope, W. (2005). Principals' relationship with computer technology. *NASSP Bulletin*, *89* (643), 45-63.

Creswell, J. W. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). NJ: Pearson, Upper Saddle River.

Deryakulu, D. (2005). Bilgisayar öğretmenlerinin tükenmişlik düzeylerinin incelenmesi. *Eğitim Araştırmaları Dergisi*, 19, 35–53.

Deryakulu, D. (2008). Bilişim teknolojileri öğretimi ve meslek seçimi. D. Deryakulu (Ed.), *Bilişim teknolojileri öğretiminde sosyo-psikolojik değişkenler içinde* içinde (s. 125-150). Ankara: Maya Akademi.

Deryakulu, D. ve Olkun, S. (2006). Bilgisayar öğretmenlerinin mesleki sorunları: Çevrimiçi **tartışma forumu mesajlarına da**yalı bir çözümleme. *XV. Ulusal Eğitim Bilimleri Kongresi Bildiri Özetleri Kitabı içinde* (s. 160-161).

Dirisağlık, F. ve Kabakçı, I. (2008). Bilgisayar formatör öğretmenlerinin bilgi teknoloji sınıflarının kullanımına ilişkin görüşleri: Eskişehir ili örneği. *VIII. International Educational Technology Conference* içinde (s. 360-365).

Dönmez, F. İ. (2009). *Türkiye ve İsveç ilköğretim okullarında bilgisayar eğitimi-öğretimi öğretim programları üzerine bir inceleme.* Yayınlanmamış yüksek lisans tezi. Çukurova Üniversitesi, Adana.

Durdukoca, Ş. F. ve Arıbaş, S. (2011). İlköğretim seçmeli bilişim teknolojileri dersi 5.basamak öğretim programının öğretmen görüşleri doğrultusunda değerlendirilmesi (Malatya ili örneği). *Yüzüncü Yıl Üniversitesi, Eğitim Fakültesi Dergisi, 8* (1), 140-168.

Eğitim Teknolojileri Genel Müdürlüğü [EğiTek]. (2007). *Okullara bilgisayar formatör öğretmen görevlendirilmesi*. 234 sayılı genelge. Ankara: MEB.

Ergişi, K. (2005). *Bilgi teknolojilerinin okulda etkin kullanımı ile ilgili okul yöneticilerinin teknolojik yeterliklerinin belirlenmesi (Kırıkkale ili örneği).*Yayınlanmamış yüksek lisans tezi, Kırıkkale Üniversitesi, Kırıkkale.

Eyidoğan, B. (2009). *Bilişim teknolojileri dersinin ilköğretimde seçmeli ders olmasına ilişkin öğretmen görüşleri.* Yayınlanmamış yüksek lisans tezi, Anadolu Üniversitesi, Eskişehir.

Fraenkel, J. R., & Wallen, N. E. (2003). *How to design and evaluate research in education.* New York: McGraw-Hill.

Gay, L. R., Mills, G. E., & Airasian, P. (2006). *Educational research: Competencies for analysis and applications* (8th ed.). New Jersey: Pearson Education, Inc., Upper Saddle River.

Hammond, M. (2001). 'One up': A case study exploring new ICT teachers' satisfaction and development in their first year of teaching. *Teacher Development, 1* (3), 339–356.

Hammond, M., & Cartwright, V. (2003). 'Three Up': A case study of teachers of information and communications technology in their third year of teaching. *Teacher Development, 7* (2), 211-227.

Kabakçı, I., Kurt, A. A. ve Yıldırım, Y. (2008). Bilgisayar öğretmenlerinin seçmeli bilişim teknolojileri öğretim programının uygunluğuna ilişkin görüşlerinin belirlenmesi. *VIII. Uluslararası Eğitim Teknolojileri Konferansı içinde* (s. 518-526).

Kabakçı Yurdakul, I. ve Kurt, A. A. (2011). Öğretmen adaylarının bilişim teknolojileri dersi öğretim programına ilişkin görüşlerinin çeşitli değişkenler açısından incelenmesi. *Ahi Evran Üniversitesi Eğitim Fakültesi Dergisi*, *12* (1), 277-301.

Kabakçı, I. ve Odabaşı, H. F. (2007, Mayıs). Bilgisayar öğretmenlerinin ilk çalışma yıllarına yönelik mesleki gelişim etkinliği. *Uluslararası Öğretmen Yetiştirme Politikaları ve Sorunları Sempozyumu*'nda sunulan bildiri, Bakü, Azerbaycan.

Kangro, A., & Kangro, I. (2004). Integration of ICT in teacher education and different school subjects in Latvia. *Educational Media International, 41* (1), 31-37.

Karal, H., Reisoğlu, İ. ve Günaydın, E. (2010). İlköğretim bilişim teknolojileri dersi öğretim programının değerlendirilmesi. *Çukurova Üniversitesi Eğitim Fakültesi Dergisi, 3* (38), 46-64.

Karal, H ve Timuçin, E. (2010). Bilgisayar ve öğretim teknolojileri öğretmenliği bölümleri mezunların sorunları ve çözüm önerileri. Panel raporu. *Kuram ve Uygulamada Eğitim Yönetimi [Educational Administration: Theory and Practice]*, *16* (2), 277-299.

Karataş, S. (2010). Bilgisayar ve Öğretim Teknolojileri (BÖTE) öğretmen adaylarının mesleklerine ilişkin zihin haritalarının analizi. (Gazi Üniversitesi Örneği). *Ahi Evran Üniversitesi Eğitim Fakültesi Dergisi, 11* (1), 159-173.

Keleş, E. ve Türedi, N. (2011). Bilişim teknolojileri formatör öğretmenlerinin bakış açısı ile okullardaki bilgi teknolojisi sınıfları. *Eğitim Teknolojileri Araştırmaları Dergisi*, *2* (1).

Kılınç, M. ve Demir, M. (2011, Ekim). İlköğretim *okullarında seçmeli Bilişim Teknolojileri Dersi 6. basamak öğretim programının öğretmen görüşleri bakımından değerlendirilmesi*. I. Uluslararası Eğitim Programları ve Öğretim Kongresi'nde sunulan bildiri, Eskişehir.

Kozloski, K. C. (2007). *Principal leadership fortechnology integration: A study of principal technology leadership.* Unpublished doctoral dissertation, Drexel University, the United States.

Köse, S. ve Gezer, K. (2006). Buldan (Denizli) ilçesi lise öğrencilerinin bilgisayara yönelik tutumları. *Buldan Sempozyumu Bildirileri Kitabı içinde* (s. 79-86).

Kural Er, F. (2006). İlköğretim bilgisayar dersi programına ilişkin öğretmen görüş ve beklentileri: Bir durum çalışması: Çanakkale ili örneği. **Yayınlanmamış yüksek lisans tezi, Ç**anakkale Onsekiz Mart Üniversitesi, Çanakkale.

Kurt, B. ve Sular, E. (2011). Bilgisayar ve Öğretim Teknolojileri Eğitimi (BÖTE) bölümü öğrencilerinin meslekleri ile ilgili önyargıları. *Eğitim Teknolojileri Araştırmaları Dergisi,* http://www.et-ad.net/dergi/index.php?journal=etad&page=issue&op=view&path%5B%5D=6 adresinden 28.06.2012 tarihinde edinilmiştir.

Kuvan, Ö. (2009). *Bilişim teknolojileri öğretmenlerinin karşılaştıkları sorunlar ve tükenmişlik düzeyleri.* Yayınlanmamış yüksek lisans tezi, Sakarya Üniversitesi, Sakarya.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. CA: Sage.

Maxwell, J. A. (2005). *Qualitative research design: An interactive approach* (2nd ed.). Thousand Oaks, CA: Sage.

Memmedova, A. (2001). *Bilgisayar destekli eğitimde rol alan formatör öğretmenlerin görevlerini gerçekleştirme düzeylerine ve BDE uygulamalarına ilişkin görüşleri.* Yayınlanmamış yüksek lisans tezi, Hacettepe Üniversitesi, Ankara.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage.

Milli Eğitim Bakanlığı [MEB]. (1993). Milli Eğitim Bakanlığı'na bağlı örgün ve yaygın eğitim kurumlarında bilgisayar laboratuarlarının düzenlenmesi ve işletilmesi ile bilgisayar ve bilgisayar koordinatör öğretmenlerinin görevleri hakkında yönerge. *Tebliğler Dergisi*, 2378.

Milli Eğitim Bakanlığı [MEB]. (1998). *Tebliğler Dergisi,* 2492, Ankara: Milli Eğitim Basımevi.

Milli Eğitim Bakanlığı [MEB]. (2001). *Bilgi teknolojilerinin kullanımına ilişkin 53 sayılı genelge.*

Milli Eğitim Bakanlığı [MEB]. (2002). *Eğitimde hedef ve stratejiler.* http://www.meb.gov.tr/stats/apk2002/4.htm adresinden 25.10.2011 tarihinde edinilmiştir.

Milli Eğitim Bakanlığı [MEB]. (2003). İlköğretim kurumları yönetmeliği, *Tebliğler Dergisi*, 2554.

Milli Eğitim Bakanlığı [MEB]. (2007). *Tebliğler Dergisi*, 2597, Ankara: Milli Eğitim Basımevi.

Milli Eğitim Bakanlığı [MEB]. (2009). *Yürütülen projeler.* Eğitim Teknolojileri Genel Müdürlüğü. http://egitek.meb.gov.tr/KapakLink/Projeler/YurutulenProjeler.html adresinden 09.08.2011 tarihinde edinilmiştir.

Milli Eğitim Bakanlığı [MEB]. (2011). *Eğitimde FATİH projesi*. http://fatihprojesi.meb.gov.tr/site adresinden 24.10.2011 tarihinde edinilmiştir.

Okay, A. (2007). *Bilgisayar öğretmenlerinin okulda karşılaştıkları sorunların belirlenmesi*. Yayınlanmamış yüksek lisans tezi, Balıkesir Üniversitesi, Balıkesir.

Ökten, G. ve Horzum, M. B. (2011, Eylül). *Sınıf öğretmenlerinin bilişim teknolojileri dersi öğretimine yönelik görüşleri üzerine nitel bir çalışma*. 5th International Computer and Instructional Technologies Symposium'unda sunulan bildiri, Fırat University, Elazığ.

Özar, M., & Aşkar, P. (1997). Present and future prospects of the use of information technology in schools in Turkey. *Educational Technology Research and Development, 45* (2), 117-124.

Özdener, N. (2007). Development of a new curriculum for computer education and comparison with the current curriculum of the Turkish Ministry of National Education. *TOJET, 6* (3), 39-53.

Özoğul, P. (2006). *Bilgisayar öğretmenlerinin meslek yaşamlarında karşılaştıkları sorunlar: Eskişehir ili örneği*. Yayınlanmış yüksek lisans tezi, Anadolu Üniversitesi, Eskişehir.

Öztok, M. (2007). *Avrupa Birliği eğitim faaliyetlerinde bilgi ve iletişim teknolojileri açısından Türk öğretim programındaki bilgisayar dersinin yeterliliği.* Yayınlanmamış yüksek lisans tezi, Marmara Üniversitesi, İstanbul.

Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage.

Saban, A. (2007). *Okul teknolojisi planlaması ve koordinasyonu.* Ankara: Pegem A Yayıncılık.

Schiller, J. (2003). Working with ICT: Perceptions of Australian principals. *Journal of Educational Administration, 41* (2), 171-185.

Seferoğlu, S. S. (2007). İlköğretim bilgisayar dersi öğretim programı: Eleştirel bir bakış ve uygulamada yaşanan sorunlar. *Eurasian Journal of Educational Research*, *29*, 99-111.

Seferoğlu, S. S. (2009, Şubat). *İlköğretim okullarında teknoloji kullanımı ve yöneticilerin bakış açıları*. Akademik Bilişim'de sunulan bildiri, Harran Üniversitesi, Şanlıurfa.

Semenov, A. (2005). *Information and communication technologies in schools: A handbook for teachers or How ICT can create new, open learning environments.* Paris: UNESCO. Retrieved 28 June, 2012 from http://unesdoc.unesco.org/images/0013/001390/139028e.pdf.

Steinke, L. J., **& Putnam, A. R. (2007). Why should I stay? Fac**tors influencing technology education teachers to stay in teaching positions. *Journal of Technology Education, 19* (1), 57-70.

Şerefoğlu **Henkoğlu, H. ve Yıldırım, S. (2012). Türkiye'deki i**lköğretim okullarında bilgisayar eğitimi: Kuram ve uygulamadaki farklılıklar. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 45* (1), 23-61.

Şişman, M. (2002). Öğretim liderliği (2.bs). Ankara: Pegem A Yayıncılık.

Talim ve Terbiye Kurulu Başkanlığı [TTKB]. (2006). *İlköğretim bilgisayar dersi (1-8. sınıflar) öğretim programı*. [Online]: http://ttkb.meb.gov.tr/program.aspx adresinden 23.08.2011 tarihinde edinilmiştir.

Talim ve Terbiye Kurulu Başkanlığı [TTKB]. (2007). *Yeni uygulamaya konulan ilköğretim kurumları derslerine ait öğretim programları ve haftalık ders saatleri çizelgesine ilişkin hususlar.* http://canakkale.meb.gov.tr/duyurular/E_Okul_Projesi/2007_ogrt_yili_ilkogretim_kurumlari_derslerine_iliskin_ hususlar. pdf adresinden 23.08.2011 tarihinde edinilmiştir.

Talim ve Terbiye Kurulu Başkanlığı [TTKB]. (2010). İlköğretim okulları haftalık ders çizelgesi **http://ttkb.meb.gov.tr/duyuru**ayrinti.aspx?sayfa=3&dno=68 adresinden 23.08.2011 tarihinde edinilmiştir.

Tanataş, D. (2010). İlköğretim seçmeli bilişim teknolojileri dersi öğretim programının uygulanmasına yönelik öğretmen görüşleri (Malatya ili örneği). Yayınlanmamış yüksek lisans tezi, İnönü Üniversitesi, Malatya.

Taşkıran, U. S. (2006). *Bilgi ve iletişim teknolojisi dersinin öğrenci merkezli eğitim yaklaşımıyla işlenmesinde karşılaşılan sorunlar (Eskişehir ili örneği).* Yayınlanmamış yüksek lisans tezi, Anadolu Üniversitesi, Eskişehir.

Timuçin, E., Öngöz, S. ve Tatlı, Z. (2007). Bilgisayar öğretmenlerinin ilköğretim bilgisayar ders saatlerine ilişkin düşünceleri ve müfredata yönelik önerileri. *VII. Uluslararası Eğitim Teknolojileri Konferansı içinde* (s. 199-207). Lefkoşa, Kıbrıs.

Topu, F. B. (2010). *Bilişim teknolojileri öğretmenlerinin okullarındaki rolleri, beklentiler ve karşılaşılan problemler: Erzurum ili örneği.* Yayınlanmamış yüksek lisans tezi, Atatürk Üniversitesi, Erzurum.

Turan, S. (2002). Teknolojinin okul yönetiminde etkin kullanımında eğitim yöneticisinin rolü. *Kuram ve Uygulamada Eğitim Yönetimi Dergisi, 8* (30), 271-281.

Türk, Ö. (2008). *Bilgisayar öğretmenlerinin mesleki yeterliliklerini çalışma ortamlarında kullanabilirliklerinin değerlendirilmesi*. Yayınlanmamış yüksek lisans tezi, Gaziantep Üniversitesi, Gaziantep.

Uşun, S. (2004). *Bilgisayar destekli öğretimin temelleri*. Ankara: Nobel Yayıncılık.

Wicklein, R. C. (2004). Critical issues and problems in technology education. *The Technology Teacher, 64* (4), 6-9.

Yaprak, M. (2009). İlköğretim okullarında çalışan bilişim *teknolojileri öğretmenlerinin dersin* öğretiminde karşılaştıkları sorunlar (Şanlıurfa ili örneği). Yayınlanmamış yüksek lisans tezi, Gaziantep Üniversitesi, Gaziantep.

Yıldırım, A. ve Şimşek H. (2006). *Sosyal bilimlerde nitel araştırma yöntemleri* (5. bs). Ankara: Seçkin Yayıncılık.

Yıldırım, A. ve Şimşek, H. (2008). *Sosyal bilimlerde nitel araştırma yöntemleri* (6. bs). Ankara: Seçkin Yayıncılık.