Investigation of Tablet Computer Use in Special Education Teachers' Courses
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Abstract

This study aimed to examine Tablet computer use in special education teachers' courses. Qualitative research method was used in this study. Research data was created as a result of the survey has applied to the special education teachers who work in Special Education and Vocational Training Centre in Nicosia, Özev Special Education School and Ela Special Education Center. As a result of this research, it is emerged that special education institutions which depends on the government doesn't use tablet computers yet. Tablet computers should be used in the education of individuals who need special education when teaching target skills, self-care skills, visual applications and gaining independence skills and offering prizes.

Keywords: Tablet computer, special education, skills, teacher, technology

Introduction

Although special education only perceived as dealing individuals with intellectual disabilities, it is also dealing individuals with wider kind of disabilities. Ministry of Education describes individuals who needs special education in different categories such as; attention deficit and hyperactivity disorder, speech and language disorders, emotional and behavioural disorders, visual impairment, hearing impairment, orthopaedic impairment, specific learning disabilities, cerebral palsy, chronic disease, superior or special abilities, autism spectrum disorder and mental deficiency (mild, moderate, severe and very severe) (MEB, 2006). Historical information for children with special needs is traced back to ancient times (Ataman, 2009). A separate education for individuals who require special education services are within the scope of special education. Special education teacher who is specially trained is the
essential staff in the training of individuals who need special education. There is also a team from many fields as well as the special education teacher (MEB Özel Eğitim Hizmetleri Yönetmeliği, 2000). When characteristics of individuals who need special education services is analyzed, it has emerged that requirements and specifications vary considerably (Cavkaytar, 2008). Based on these requirements, technology is one of the areas needed for the individuals who require special education (Demirkaran, 2005).

Today, technology has an effective and active role in every area of life. Technology is renewed every day. Therefore, technology can respond to the needs of the individual both in everyday life and training environments (Deniz, 2000; Akpinar, 2005; Alkan, 2005; Van Wyk & Louw, 2008). Technology is contributing to the enrichment of courses, when used in the teaching and learning environment both for teachers and students. Laney, 1990; Collins, 1991; Alkan, 1997; Harwood & McMahon, 1997; Şahin & Yıldırım, 1999; Demirel & ark., 2004; Gündüz, 2010; Chen, 2012). At the same time, teachers can create an effective learning environment with the support of technology (Turan, 2010). Teachers' teaching environment should be supported with the technology of internet as well (Batvi, 2012). According to one study, pursuit of technology can be provided in the same level with the students' budgets (Ozdamli, Cavus & Uzunboylu, 2007). Use of technology in special education is useful in the case of facilitation of teachers' effort, understanding, emerging technologies by the individuals who need special education, using technology, adapting to new and providing courses go together with technological developments. One of the innovations of technology in the recent years is the Tablet PC. Mobile Communication technologies which includes Personal Digital Asistant (PDA) are consist of mobile phones, smart phones and tablets (Thiam, 2013). Tablet computers, wireless networks and can connect to other computers (Kenar, 2012). Tablets using digital ink technology which means that information can be added onto the screen with a digital pen. As a result of research conducted tablet computers are preferred to be used as an education tool. The reasons why tablet computers are preferred are consist of students' interest, requirement, attention to the lesson and giving a rich educational environment for the teacher (Gündüz, 2010; Aksal, 2011; Delen & Bulut, 2011; Güzel, 2011). In order to avoid difficulties in using technology both for students and teachers, training is very important according to their level of knowledge in Tablet PCs (Savas, P. 2013). Use of Tablet computers in special education has started in Tohum Vakfi Special Education School in Turkey as a teaching method for the autistic children. Besides, computers has been used to improve independent life skills and reinforcement. Tablet computers used for children with autism to improve education and life skills. This shows that children has improved their small muscle skills, emotional skills, social skills, stress reduction, sensory skills as well as language and communication skills (Celik, 2011). This research aims to emerge computer use of teachers in special education institutions in Nicosia region of North Cyprus as well as teachers' perspectives about use of tablet PCs in education.

1. Method
A qualitative research approach was used in this study. It is not possible to use statistical data and digital tools in qualitative research method (Altunışık, 2005). Survey as a qualitative research methods aimed to obtain detailed information about the subject.

2. Working Group
13 special education teachers who works in North Cyprus are included in the working group of research. Teachers in the working group are working in Nicosia Special Education and Vocational Training Centre, Özev Special Education School and Ela Special Education Center. For ethical reasons of the research, teachers' names are not included in the research. Because of this reason, participant teachers are given codes such as P1, P2, P3, P4 and P5. Special education teachers' years in profession are shown in Table 1.

| Participants | Years in Profession |
|--------------|---------------------|
| 1            | 8                   |
| 2            | 6                   |
| 3            | 5                   |
| 4            | 4                   |
| 5            | 3.5                 |

Data Collection Tools
Data are collected via qualitative research method. 10 open questions are used in this research. Questions are created...
RESULTS AND COMMENTS

Question 1: Can you describe general characteristics of your students?

Table 1 The response of the participants to Question 1 is presented in Table 1.

| Participants | Description                                                                 |
|--------------|-----------------------------------------------------------------------------|
| P1           | It consists of students who have mental deficiency, autism and learning difficulties. |
| P2           | It consists of students with hearing impairment and mental disabilities.       |
| P3           | It consists of students with autism, hearing impairments, mental disability, learning disability. |
| P4           | Usually consists of students with a diagnosis of autism.                      |
| P5           | It consists of students with autism, Down syndrome, hearing impaired and learning disabilities. |

Participants responses to Question 1 represent characteristics of students who need special education. Characteristics of students is reflected in Table 1.

Question 2: In what level do you think do you watch technology as a special education teacher?

Table 2 The response of the participants to Question 2 are presented in Table 2.

| Participants | Description                                                                 |
|--------------|-----------------------------------------------------------------------------|
| P1           | Always, because technology devices are necessity for the education of autistic children. |
| P2           | It has been followed in normal level.                                       |
| P3           | It is being monitored but can not be applied to students due to the impossibility. |
| P4           | It is being monitored constantly. Because we are using technology in preparing teaching materials |
| P5           | It is being monitored in middle level.                                      |

According to Table 2, special education teachers are monitoring technological improvements and preparing their teaching materials by using technology. Teachers mention it is necessary especially for the education of children with autism. However, some special education teachers stated that although they are monitoring the technology, it is impossible to use technology in their lessons because of the impossibilities. Therefore, Table 2 reflects how special education teachers monitor the technology.

Question 3: What technology devices are available in your special education institution?

Table 3 The response of the participants to Question 3 are presented in Table 3.

| Participants | Technology Devices                                   |
|--------------|------------------------------------------------------|
| P1           | Ipad, smart phone, laptop                           |
| P2           | Tablet PC, computer, phone                          |
| P3           | Computer, television, projection                     |
| P4           | Computer, projection                                |
| P5           | Ipad                                                 |

Participants responses to Question 3 represents available technological devices in special education institutions in Table 3. Therefore, it is clear that tablet computers are the primary, later on computers and smart phones, projection and televisions are available in most of the special education institutions.

Question 4: Are you using technological devices for the course? If you are using these devices, how do you use?

The responses of the participants to Question 4 are presented in Table 4.
Table 4

| Participants | Description |
|--------------|-------------|
| P1           | Computer and projection has been used to share description of the subject and speeches made after activity. |
| P2           | Offering computer games as a prize, listening to music from internet and preparing presentations for descriptions of the subject. |
| P3           | Using computers and laptops in description of the subjects and understanding whether they understand the lesson or not. |
| P4           | Using tablet computers in the education of students. |
| P5           | After description of the subject, computer games are offered as an award. |

According to Table 4, participants responses to question 4 emerges that teachers are taking advantages of technology devices, using projection to prepare presentations and use tablets as an award and understanding whether they learned or not.

**Question 5**: What is your opinion about use of tablet computers for the individuals who need special education? The responses of the participants to Question 5 are presented in Table 5.

| Participants | Description |
|--------------|-------------|
| P1           | Tablet computers attracts a lot of special needs individuals. It is advantageous because they are touch screen and helps using keyboard in a easier way. Therefore, it has to be used for these individuals. |
| P2           | Teacher have not yet had the opportunity to apply tablet computers. |
| P3           | Teacher believes that using tablet computer in a controlled way; helps students in terms of learning and grabbing the attention. Therefore, it should be used for individuals in need of special education. Tablet computers must be used especially in the education of individuals with autism and for gaining independence skills of students. |
| P4           | Tablet computers are great for grabbing attention. Because of this, they should be used for the training of individuals with special needs. |

According to table 5, participants responses to question 5 represent that tablet computers has to be used by the individuals in special needs. Tablet computers are remarkable, easy to use and touch screen. Therefore, table 5 shows that tablet computers should be used in a controlled way to gain independence skills training.

**Question 6**: Do you think the special education using tablet computers contribute to the individuals who need special education? if you think in this way, what are these contributions? The response to Question 6 of the participants are presented in Table 6

| Participants | Description |
|--------------|-------------|
| P1           | Tablet PCs will contribute individuals who need specific training. it will be useful to perform skills independently for the individuals who need special training. |
| P2           | Tablet computers will contribute to the individuals who needs special education. In particular, mentioned behaviours such as before-after will be useful.  
1- Open the tap  
2- Put your hand under the tap... |
| P3           | Tablet computers will contribute to the individuals who needs special education. For example, illustrated story on a paper may not interest an individual and this may extend the learning process. However, it is more interesting to click on the story cards and describe or listen it on tablet PC. This will help individuals to learn faster. |
| P4           | Tablet PCs are useful for their attention and provides reinforcement. |
| P5           | Tablet PCs will contribute to individuals with special needs because it helps to |
According to Table 6, participants answers to question 6 shows that tablet computers has to be used by the individuals in special needs. PC tablets will contribute to perform their skills independently, learn behaviours such as before-after, attention, reinforcement, development of visual perception and increase motivation for the individuals who need special education. It is indicated in Table 6.

Question 7- What are the facilities of tablet PCs allows you as a special education teacher?

Table 7

Table 7 presents participants' responses to Question 7.

| Participants | Facilities |
|--------------|------------|
| P1           | Provide positive reinforcement. |
| P2           | Provide effective reinforcement and attention. |
| P3           | Facilitates the use of image applications. |
| P4           | It is convenient when awards to be given. |
| P5           | Provide visuals and practice. |

The participants responses to Question 7 shows that tablet computers provide conveniences for special education teachers. Tablet computers are given to individuals who require special training as a reward. At the same time, tablet computers help when it is intended to provide reinforcement and grab attention. Visualisation applications of tablet computers are convenience for a special education teacher. Facilities of tablet computers for special educators have been included in Table 7.

Question 8: What are the benefits of using tablet computers in special education?

The participants responses to Question 8 are presented in Table 8.

Table 8

Table 8 presents participants' responses to Question 8.

| Participants | Benefits |
|--------------|----------|
| P1           | Provides concept teaching. |
| P2           | Provides a variety of visual material. |
| P3           | Provides attention and reinforcement. |
| P4           | It provides convenience when asked to award. |
| P5           | Provides reinforcement. |

According to Table 5, participants answers to Question 5 shows that tablet computers provides convenience for finding visual materials for special education teachers. It helps teachers to grab attention, practice the course and learn in an effective way for the individuals who needs special education. Tablet computers are convenient when students wanted to be awarded. Therefore, the use of tablet computers is helpful. The benefits of tablet computers in special education are reflected in Table 8.

Question 9: What is the most favourite application of your students on a tablet computer?

The response of the participants to Question 9 are presented in Table 9.

Table 9

Table 9 presents the most favourite applications of the students.

| Participants | The Most Favourite Applications |
|--------------|--------------------------------|
| P1           | Car racing, Videos, Music recital |
| P2           | Maths Balloons |
| P3           | Animal Sounds |
| P4           | Angry Birds |
| P5           | Visual cue lite |

Participants response to Question 9 represents the most favourite applications of the students in Table 9. These applications are used to give awards or educational purposes only.
Question 10: How do you think tablet computers can be used in special education?

The participants responses to Question 10 are presented in Table 10.

Table 10

| Participants | Response |
|--------------|----------|
| P1           | Tablets computers would be appropriate to be used in special education self-care skills and independent living skills. |
| P2           | Event cards in special education can be studied, the concept can be studied, students can make line studies, can watch a short film, imitating the sound work and music concerts in tablet computers. |
| P3           | It can be used as: a prize, gaining independence in special education, teaching with visual applications and using a variety of applications. |
| P4           | Educational games can be used when teaching target skills. |
| P5           | For grabbing interest, as a reward, development of attention skills, concepts, reinforcement. |

According to Table 10, participants answers to Question 10 shows that tablet computers can be used for helping individuals who need special education in socialization and independent living skills.

RESULTS AND DISCUSSION

With the rapid development of technology, the use of tablet computer examined for the in the course of special education teachers. According to the findings of a special education teacher who participated in the study; Special education teachers stated that their students generally have intellectual disabilities, learning disabilities, hearing impairment, individuals with a diagnosis of autism. Technology is beneficial for the special education teacher while preparing materials for their courses. Teachers should benefit from the technology especially in the education of autistic children. Also, for the individuals who need special education, technology is a necessity. However, special educators in government schools stated that they can not benefit of tablet computers because of the impossibility. It is reported that technological gadgets such as tablet PC, smart phone, smart phone and projections can be used in special education institutions. They explained that this technology devices can be used for lectures, for practice and giving as awards. It is also appeared that most of the special education teachers use tablet computers in their courses. Special education teachers' use of tablet computers for the individuals who need special education emerges positive results fin the case of motivation, reinforcement, attention, gaining independence and before-after behaviour and giving as a reward. Also, special education teachers stated that with the help of Tablet PCs, it is possible to have fast, easy, diversity and visual materials for their lesson. Special education teachers who teach targeted skills, self-care skills, independence skills, visual applications and needs to give awards should use tablet PCs at any time. It is stated that Tablet PCs attracted more attention in the learning process of the students and this helped them to learn easily.

In other studies, it is reported that the tablet computer is beneficial to children with autism. Tablet computers which used to develop independent living skills for children with autism also help small muscle skills, emotional skills, communication skills as well as language skills. At the same time applications which aim reinforcements help to strengthen the subject after lecturing. Autistic children don't know what to do when they are free and they begin to stereotype movements. Before using a Tablet PC, they used to walk back and forth, swing, swirl and did not know what to do in leisure time. Once they started using tablet computers, they almost forgot to make these movements. It is observed that children with autism began to spend their free time with these tablet computers. As a result, technology in special education is also needed as in all areas. Research has emerged that in the education of individuals with special education needs, the tablet computers should be used by special education teachers. It is because tablet PCS contribute students' self-care skills, to award students and in the development of visual perception. Special education teachers in North Cyprus is working with tablet computers in the education of individuals with special needs. Other studies have been conducted only with autistic children. In Northern Cyprus in Nicosia only special education institutions which depends on the government doesn't use tablet computers. With this research the information about special education teachers use of tablet computers and use of tablet computers in
special education institutions are taken from the special education teachers. Tablet computers should be used in the education of individuals who need special education have been concluded.

**RECOMMENDATIONS**

- Analyzing the results of the study, it is emerged that teachers cannot practice due to the lack of technology devices in public school special education. This deficiency must be remedied. Teachers must be trained about using tablet computers more effectively.
- Teacher trainings should be organized in order to inform teachers about the use of tablet computers.
- Tablet computers should be used in places without the internet as well. Therefore, a program of study must be carried out to provide this.

**Reference**

Ataman, (2009). *Introduction to Children with Special Needs and Special Education*, Gündüz Eğitim Yayınıcılık, Ankara.

Altunışık, R., Coşkun, R., Bayraktaroğlu, S. ve Yıldırım, E. (2005). *Social science research methods*. Sakarya: Sakarya Kitabevi.

Alkan, C. (2005). *Educational technology*. Ankara: Anı Yayıncılık.

Alkan, C. (1997). *Educational technology*, Anı Yayıncılık, Ankara

Akpınar, Y. (2005). *Applications in computer-aided education*. Ankara

Aksal, F. A. (2011). Developing evaluative tool for online learning and teaching process. *TOJET: The Turkish Online Journal of Educational Technology, 10* (3), 69-75.

Batdı, V. (2012). Determining teachers self-efficacy beliefs in educational internet use. *AWERProcedia Information Technology and Computer Science, 2*(2),101-108

Cavkaytar, A. (2008). *Children in need of Special Education and Special Education*. Ankara.

Collins, A. (1991), *The role of computer technology in restructuring schools*. Phi Deta Kappan, 73(1), 28-36.

Çelik, B. (2011). Otizm ve İpad. http://www.beratcelik.com/otizm-ve-ipad.html (Erişim Tarihi: 20.05.2013).

Demirkaran, A. Vefa (2005). Use of Computers in Special Education and Special Education, Vocational Institutions Elements opinion on Computer Aided Education Computer Attitude Determination. Master Thesis

Deniz, L. (2000). Computer experience and computer attitudes of prospective teachers. *M.Ü. Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 12, 135-166.

Demirel, Ö., Seferoğlu, S. S. Ve Yaşıcı, E. (2004). *Instructional Technology and Material Development*, Pegem A Yayıncılık, Ankara.

Delen, E. & Bulut, O. (2011). The relationship between students’ exposure to technology and their achievement in science and math. *TOJET: The Turkish Online Journal of Educational Technology, 10* (3), 311-317.

Gündüz, H. B. (2010). Digital divide in Turkish primary schools: Sakarya sample. *TOJET: The Turkish Online Journal of Educational Technology, 9*(1), 43-53

Güzel, H. (2011). Factors affecting the computer usage of physics teachers working at private training centers. *TOJET: The Turkish Online Journal of Educational Technology, 10*(2), 122-132.

Harwood, W. S. & McMahon, M. M. (1997), Effects of integrated video media on student achievement and attitudes in high school chemistry, *Journal of Research in Science Teaching, 34*(6), 617-631.

Thiam, M., Y. (2013). Role of information technology in agriculture. *Global Journal of Information Technology, 3*(2), 27-30.

urun, I. (2010). Student Readiness for Technology Enhanced History Education in Turkish High Schools. *Cypriot Journal of Educational Sciences, 5*(2), 94-106.

Kenar, İ. (2012). *International Journal of Research in Educational Sciences, E-Dergi* Cilt:2 Sayı:2.

Laney, D. (1990). *Micro computers and social studies*, OCSS Rewiev, 26, 30-37.

MEB. (2006). Ministry of Education Special Education Services Regulation, http://orgm.meb.gov.tr/Mezvuzat/ozel_yon SON/ozelegitimyonetmelikSON.htm (Erişim Tarihi: 16.05.2013).

Milli Eğitim Bakanlığı (2000). Decree Law on Special Education and Special Education Services Regulation. Milli Eğitim Basvevi, Ankara.

Ozdamli, F., Cavus, N., & Uzunboylu, H. (2009). Evaluation of University Libraries. *Cypriot Journal of Educational Sciences, 2*(1), 9-20.

Savas, P. (2013) *Tablet PCs in English Language Teaching: Benefits and Challenges. Global Journal on Technology, 4*, 602-607.
Şahin, Y. T. & Yıldırım, S. (1999). *Instructional Technology and Material Development*, Anı Yayıncılık, Ankara.
Van Wyk, G. & Louw, A. (2008). Technology-assisted reading for improving reading skills for young South African learners. *The Electronic Journal of e-Learning, 6* (3), 245-254.