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USE OF UBIQUITOUS COMPUTING TECHNOLOGY IN LEARNING ENGLISH FOR ACADEMIC PURPOSES

AKADEMİK AMAÇLI İNGİLİZCE ÖĞRENİMİNDE HER AN HER YERDE BİLGİSAYAR TEKNOLOJİLERİNİN KULLANIMI

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Abstract

This case study aims at revealing EAP (English for academic purposes) learners' experiences in and perceptions about using ubiquitous computing technology. Data were collected through interviews carried out with eleven students who were prepared to take the foreign language (English) exams for academic purposes in a private language course in Turkey. Face-to-face interviews consisted of fifteen open-ended questions. Data were collected through the audio recordings of interviews and then examined by content analysis method, and then, codes, categories, and themes were obtained. The findings of this study revealed that all of the participants were continuously and actively using ubiquitous computing technologies and thought ubiquitous computing technologies had several advantages in learning English for academic purposes such as continuous and permanent learning, quick access to information, preventing the waste of time, and interacting with other learners. However, some disadvantages and limitations of ubiquitous computing technologies such as technical and infrastructural problems, information pollution, and inadequacies in the translation of terms were also considered.

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Keywords: English language teaching, learning English for academic purposes, ubiquitous computing technologies, u-learning

Öz

Durum çalışması olarak yürütülen bu araştırmada akademik amaçlı İngilizce (EAP) öğrenenlerin "her an her yerde bilgisayar teknolojileri"ni kullanma konusundaki deneyim ve algılarının ortaya çıkarılması amaçlanmaktadır. Veriler, Türkiye'de özel bir dil kursunda akademik amaçlı yabancı dil (İngilizce) sınavlarına hazırlanan on bir kişiyle yapılan görüşmelerle toplanmıştır. Yüz yüze görüşmelerde on beş açık uçlu soru yer almıştır. Katılımcıların cevapları ses kaydı olarak alınmış ve daha sonra bu kayıtlardan elde edilen veriler içerik analizi yöntemi ile incelenerek kodlar, kategoriler ve temalar elde edilmiştir. Bu çalışmada, tüm katılımcıların sürekli ve aktif olarak her an her yerde bilgisayar teknolojilerini kullandığı ve her an her yerde bilgisayar teknolojilerinin sürekli ve kalıcı öğrenme, bilgiye hızlı erişim, zaman kaybının önlenmesi ve diğer öğrencilerle etkileşim gibi akademik amaçlarla İngilizce öğrenmede doğrudan ve olumlu bir etkisi olduğunu düşündükleri ortaya çıkmıştır. Bununla birlikte, her an her yerde bilgisayar teknolojilerinin teknik ve altyapı sorunları, bilgi kirliliği ve terimlerin tercümesindeki yetersizlikler gibi bazı dezavantajları ve sınırlamaları da ele alınmıştır.

Anahtar Kelimeler: Akademik amaçlı İngilizce öğrenimi, her an her yerde bilgisayar teknolojileri, İngilizce öğretimi, u-öğrenme

INTRODUCTION

It is known by nearly everyone all over the world that knowing a foreign language, especially English, has great importance in today's world. Therefore, it is an inevitable situation to face a foreign language at almost every step of life. Just like a foreign language, technology, and mobile devices are also an important part of our lives. We can see technological equipment wherever we look, computers at homes and offices, and mobile phones or devices in everyone's hands. People carry out most of their work in the virtual environment.

Technological equipment is commonly and extensively used in education like in our daily life. We can see that many teachers -or instructors- benefit from technology and technological tools in their lessons as much as possible. The starting point of this study is based on the fact that technology is involved in our daily and educational life so much. In this context, we aim to investigate the advantages and disadvantages of ubiquitous computing technology in learning English for academic purposes and provide suggestions to overcome those disadvantages.

Since the learning environment changes very quickly, there is no exact description of u-learning (Hwang et al., 2008). A variety of definitions were provided by different researchers for u-learning. However, "learning anytime and anywhere" and "learning through ubiquitous computing technology" are the terms that cause conflict among researchers. In this regard, according to Yahya et al. (2010), u-learning is a learning phenomenon that occurs in an environment equipped with ubiquitous computing technology that provides learning the right thing at the right place and time in the right way.

Although there are no precisely defined standards of constructing a u-learning environment yet, u-learning has still excited the attention of academia. Studies have approached u-learning from different perspectives up to now. One of those perspectives is "anywhere and anytime learning", which is a quite general description of u-learning. According to this description, any learning environment which permits learners to reach the content of learning anywhere and anytime can be addressed as a u-learning environment, regardless of wireless communications or mobile devices exist or not. For

that reason, it is a particular situation of the superficial definition of u-learning in terms of learners to reach learning content through mobile devices with wireless communication in a mobile learning environment (Hwang et al., 2008).

U-learning is sort of the broadened kind of e-learning and mobile learning, and, in the most general sense, it can be defined as every kind of education that is held through an electronic and digital environment. Whereas some researchers deal with u-learning in terms of mobile learning and thus define it based on devices and technologies, others touch on the mobility of learners and learning and thus describe it from the perspectives of learners and their experiences in learning through mobile devices" (Traxler, 2007).

Since there is no exact description of u-learning (Hwang et al., 2008), there are no exact characteristics of u-learning as well. Various researchers emphasize a variety of characteristics of u-learning, focusing on different aspects of u-learning. From this point of view, it is possible to say that researchers have different points of view on the characteristics of u-learning. For example, these characteristics are classified by Chen et al. (2002), as (1) Urgency of learning need, (2) Initiative of knowledge acquisition, (3) Mobility of learning setting, (4) Interactivity of learning process, (5) Situating of instructional activity, and (6) Integration of instructional content. On the other hand, these characteristics are listed by Curtis as three basic features of portable computers: permanency, accessibility, and immediacy (Curtis et al., 2002). Just as Curtis, some other researchers like Ogata and Yano (2004) also line up with the same characteristics of u-learning. Furthermore, in his other studies, Ogata defends two more characteristics such as interactivity, and involvement in instructional activities (Ogata et al., 2004; Ogata et al., 2010).

When viewed from a general aspect, it can be said that Chen et al. (2002), Chiu et al. (2008), Curtis et al. (2002), Ogata et al. (2004), and Ogata et al. (2010) defend similar aspects of u-learning and it can be seen they focus mainly on permanency, accessibility, immediacy, interactivity and situating of instructional activities as the major characteristics of u-learning.

U-Learning in Learning Environments

The attributes of a u-learning environment are that it is context-aware, that it is capable to supply customized supports in the ideal way, in the ideal place, and in the ideal time according to the learner's personal and environmental conditions, that it provides seamless learning anywhere and anytime, and that it can adapt to the functions of different mobile devices (Hwang, 2006).

In addition to this, the main characteristic can be listed as follows (Chen et al., 2002; Curtis et al., 2002):

- Permanency: Any work cannot be lost unless it is purposefully deleted.
- Accessibility: Documents, data, or videos can be accessed by learners from anywhere.
- Immediacy: Learners can get any information immediately where they are.
- Interactivity: Learners can get the opportunity to interact with experts, teachers, or peers through synchronic or asynchronous communication.
- Situation of instructional activities: Our daily life could be richened by the learning.
- Adaptability: The right information can be accessed at the right place through the right way.

Jones and Jo (2004) state that a ubiquitous learning environment is any environment in which students can fully participate in the learning process (p. 2). According to them, the components used in a u-learning environment are microprocessors, ULE (ubiquitous learning environment) server module, wireless technology, and sensors. The u-learning setting can reveal a collaborative, pervasive, interactive, and seamless learning structure (Huang et al., 2008; Yang, 2006).

In their study, Huang et al. (2011) state that u-learning environments have a significant positive impact on learners, and they question how high-quality u-learning environments can be developed. According to several researchers, the quality of technology-supported learning environments can be improved by the way of evaluation (Mangina & Kilbride, 2008; Oral, 2008).

U-Learning in Foreign Language Learning

In language learning (or teaching), audio-visual media such as cassettes, videotapes, CDs, and DVDs have long been used traditionally in the classroom or language laboratory. After digital media appeared, the traditional media materials have been transformed into an online environment via websites, virtual learning environments, learning management systems, and podcasting (Rosell-Aguilar, 2013). It is considered that mobile phones, Personal Digital Assistants (PDAs), and podcasting, which are three different and separate technologies coalesced on smartphones, are capable to contribute to language learning (Chinnery, 2006).

As English is the most used foreign language in non-English speaking countries, it is crucial to generate learning forms or tools that are assisted by modern technologies in learning or teaching English (Collins, 2005; Shih, 2005). Chen and Chung (2008) indicate that good language skills are very crucial for fluent international communication and that learning a foreign language can be divided into four main skills: listening, reading, speaking, and writing.

During the 1970-1980s, the early stages of computer-assisted language learning (CALL), vocabulary was the favorite subject in CALL. In those years, vocabulary learning was thought to be easily involved in CALL programs (Ma, 2009). Lots of foreign language teachers' advice about learning a foreign language is "little and often". It means that it is better to practice a few minutes every day rather than a few hours once a month (Chen et al., 2006). Since learning a foreign language and its vocabulary requires a relatively long while, Chen et al. (2006) indicate that mobile learning removes the time and space limitations and that use of free time for learning provides customized and effective learning according to the learner's conditions.

U-learning, which uses mobile computing technologies, can engross and motivate learners at any time and in any place (Liu, 2009). Mobile technologies, though having some disadvantages such as limited screen size, a short battery life, lack of keyboard, have also a variety of advantages such as flexibility, low cost, small size and user-friendliness (Jones & Jo, 2004) and thus enable mobile-assisted language learning (MALL) environments and activities to be involved in foreign language learning (Liu, 2009). There is no doubt that mobile technologies provide a great number of practical uses in language learning, which, most of the time, are readily available (Chinnery, 2006).

The two significant elements for learning a foreign language are speaking and listening skills, which require frequent practice to be achieved. In this context, Shih (2005) states that the latest mobile devices are able to record voices, send multimedia

messages with pictures and sound, and permit video conferencing. For instance, the second-language learners can obtain a great opportunity to practice the language by video messaging and conferencing with native speakers, or voice recording anytime and anywhere by the help of their mobile devices and thus to enhance their pronunciation and communicative skills.

Use of U-Learning in Learning English for Academic Purposes

Language education has been evolved from being teacher-centeredness into being learner-centeredness, which makes it necessary for teachers (or instructors) to take more care of the individual differences of language learners (Ardi, 2017). It is stated by Liu (2009) that it is not easy to learn (or teach) English in a non-English-speaking country because teaching English is not associated with real life, that is, there is no natural environment for learning as teaching methods are mostly theoretical, and because learners do not have enough chance to practice their language skills both inside and outside the classroom. For this reason, in order to promote learning English, it is of great importance to build a language learning environment and learning activities for computer-assisted language learning (CALL) (Collins, 2005; Shih, 2005). Following this case, m-learning, which uses mobile computing technologies, brings learning in through daily life and helps increasing learning experience as well as motivating learners anytime and anywhere (Liu, 2009).

English for Special Purposes (ESP) is classified into two categories by Hutchinson and Waters (1991): English for Academic Purposes (EAP) and English for Occupational Purposes (EOP). While teachers should attach importance to speaking, writing and translation skills of learners in English for General Purposes (EGP), they must dwell on learners' professional listening, reading, writing, speaking, communication, and translation skills in an academic way in English for Academic Purposes (EAP). In this sense, to promote especially EAP, blended learning, which originates from online learning, has become a very popular learning style across the globe. (Tang, 2016).

The point of origin of EAP, which was once called English for Educational Purposes (EEP), is that ESP practitioners realized that each student at the tertiary level had different and individual learning needs and that it would be improper to teach them the same type of English (Shing & Tam, 2011). In a needs analysis conducted by Evans and Green, (2007) in Hong Kong related to the tertiary students' English language needs, it was revealed that language support is needed by most of the undergraduates at university, and this support is required to be oriented towards EAP rather than EGP (Evans & Green, 2007, p. 5). In another saying, the scope of EAP depends pretty much on learners' particular English language learning needs (Shing & Tam, 2011).

Autonomy, a term that can be defined as "the ability to take responsibility for one's own learning" (Holec, 1981, p. 3; cited in Ardi, 2017), is the most significant aspect of EAP to promote lifelong learning. From this definition, it can be said that the learning process, which includes deciding objectives, choosing contents and materials, watching and assessing the process, etc., is entirely the responsibility of the learner. To support this idea, Little (2004) states that learners' responsibility is the basic step to autonomy.

As stated in the previous parts of this study, ubiquitous computing devices, such as mobile phones, laptops, tablets, PDAs, etc., are capable to provide personalized and context-aware content anytime and anywhere, which can be said to contribute to

learners' autonomy. However, since the mobile devices themselves cannot directly and automatically enhance the development of autonomy, the teacher ought to decide which mobile learning platform is suitable for the learners' autonomy (Ardi, 2017).

In consideration of all those studies and explanations in this study so far, it is seen that various researchers mainly focused on distance learning, e-learning, m-learning, and u-learning as well as learning English for academic purposes. However, the topic of "learning English for academic purposes by using ubiquitous computing technology" has not been studied in particular. Therefore, it is aimed in this study to boost the development of this topic in terms of the contributions of u-learning to learning English for academic purposes, the pros and cons of u-learning while learning English for academic purposes, and how to eliminate these disadvantages.

Background of the Study

In spite of all those developments in technology, it is apparent that these technologies have not been adjusted to foreign language learning, particularly learning English for academic purposes enough. It can be said that the subjects such as m-learning, e-learning, u-learning, and the topic 'learning English for academic purposes' have been tackled separately; but there is no study relating to the use of those learning methods or tools with the aim of learning English for academic purposes.

In Turkey, most of the studies are about the field of Computer Technology, and some other studies are in the field of Sciences. On the other hand, it cannot be said yet that a large number of studies exist across the globe on the relation between ubiquitous computing technology and learning a foreign language. For example, in Turkey, Özen (2013) made a master's thesis in the area of Computer and Instructional Technologies Education; similarly, Yılmaz (2011) also handled the subject in her master's thesis in Distance Learning. Another study by Korucu and Alkan (2011) can also be given as an example of the studies held in Turkey. As for the studies in the literature, studies carried out by Huang (2013); Kearney et al. (2011); and Maqableh et al. (2015) are seen to focus on ubiquitous technologies and learning.

As is seen, the topics of the use of ubiquitous computing technologies and learning English for academic purposes have been studied separately, but those two topics haven't been paired with each other. In this regard, this study aims at finding out what can and/or should be done about learning English for academic purposes by using ubiquitous computing technology, as well as how and to what extent today's technology is benefited from in learning English for academic purposes. In line with this purpose, the following research questions were tried to be answered:

1. What are the experiences of EAP learners in using ubiquitous computing technology?
2. What are the perceptions of EAP learners about ubiquitous computing technology?

METHOD

In this study, the qualitative approach was used since it enables to understand people's lifestyles, stories and behaviors, organizational structures, and social change (Corbin & Strauss, 2008). Eleven students who were going to take the foreign language (English) exams for academic purposes in a private language course in Turkey constitute the working group of the study. Interview technique with fifteen open-ended questions was used as data collection tool. Those questions were prepared by the

researcher before interviewing with the participants within the framework of the topic of the study and then experts in the field were consulted about the validity and reliability of the questions. After receiving expert opinion, the questions were put into final form. The data obtained from the participants were analyzed by N-Vivo 12. Pro in detail.

Research Design

A case study was carried out to unveil each one of the participants' ideas about u-learning and u-learning materials, their thoughts about the relationship between u-learning and learning English for academic purposes, and their suggestions for using u-learning in learning English for academic purposes just in their context without concerning the generalizability of the conclusions (Bogdan & Biklen, 2007). In this regard, this study aimed to reveal the participants' experiences about using ubiquitous computing technology and learning English for academic purposes through interviews.

Since the data in this study were collected before 2020 and this study was produced from a master's thesis written in 2019, the Ethics Committee Approval Certificate was not received.

Participants

The participants of our study consist of eleven students who were going to take the foreign language (English) exams for academic purposes in a private language course in Turkey. While selecting the participants, it was taken into consideration that they were learners of English for academic purposes. The participants were randomly chosen based on voluntariness. Each of them had a different field of specialization and profession. Some of the participants were students at university, some were graduated from university, a few were doing their master's degree and the rest were doing their doctorate. Four out of eleven participants were male and seven of them were female. While analyzing the data, the names of the participants were hidden and they were identified by numbers such as 'Participant 01, Participant 02, Participant 03, and so on', to keep their identity information confidential and to ensure the reliability of the study.

The English proficiency level of the participants was generally intermediate and all of them somehow used at least one kind of u-learning material, application, or device every day. The participants, who were attending the same language course for the same purpose, mainly used the software provided by the course. In addition to the software entitled Akın Dil, almost all of the participants used at least an online dictionary and some of them used also some other kinds of software or applications.

Data Collection Tool

We collected data from eleven participants through one-to-one interview technique at the time and place they determined. In those interviews, the participants were asked fifteen questions, and their answers to those questions were taken as voice recording. Those questions were prepared by the researcher before interviewing with the participants within the framework of the topic of the study and then experts in the field were consulted about the validity and reliability of the questions.

Some questions were explained and exemplified in a more detailed way in case they might not have enough knowledge about the content of the question. In the study, which was completely on a volunteer basis, no information about the identity or

institution was requested from the participants. The answers were kept strictly confidential and evaluated only by the researchers.

Data Collection Procedure

Data were collected in July and August of 2018. At first, the researcher met with the candidate participants, that is, the course attendees in their language course, and explained the study to be held. Then, they were given a piece of paper that described the content and frame of the study in a detailed way. After that, those who wanted to attend the study based on the principle of voluntariness signed the paper given to them and accepted to contribute to the study.

Data were collected from eleven participants through a one-to-one interview technique at the time and place they determined. In those interviews, the participants were asked fifteen questions which had been prepared by the researcher based on the literature and then were asked to be evaluated by the two experts in the field for trustworthiness and credibility. After receiving expert opinion, the questions were put into final form.

All interviews were recorded on a voice recorder with the permission of participants. The participants were assured that those data would not be used anywhere other than this research and they were told that the study did not include questions or practices that might cause personal discomfort in general and that they could end up the interview if they felt uncomfortable with questions or any other reason during participation.

Each interview took about twelve minutes and was conducted in Turkish since the interviewees did not have sufficient English language proficiency in speaking and also, they would be able to express themselves in their native language Turkish more easily and effectively. The interviews were first transcribed verbatim and then translated into English.

Validity, Reliability and Ethics

To be able to provide validity and reliability in this study, the findings are defined depending on the environment in which the data are obtained in order to ensure the accuracy of the research results. The original and digital forms of the data is stored so that they can be referenced as evidence when needed. The transcripts of the interview data are checked repeatedly to minimize the error rate.

The literature about the research model, model-based data collection tools, data analysis, the role of the researcher, and the validity and reliability measures were read and these readings were used as a guide in all stages of the study. Considering the totality of the study, the method used in the selection of the study group and the research model was consistently conveyed and applied on its grounds. The consistency between the research findings and the data obtained was taken into consideration, direct quotations were included in the presentation of the data and comments were made after the citation.

Since the data in this study were collected before 2020 and this study was produced from a master's thesis belonging to 2019, the Ethics Committee Approval Certificate was not obtained.

Data Analysis

In this study, the content analysis method based on "the process of summarizing and reporting written data – the main contents of data and their messages" (Cohen et al., 2007, p. 475) was used. To analyze the data, Creswell's "data analysis spiral" was followed (Creswell, 2012, p. 186). Data were analyzed by the help of N-Vivo 12. Pro in detail based on the research questions. After the codes and categories were once formed, they were rechecked by another rater to provide inter-rater reliability. Then, the codes and categories were put into the final form. The following themes and categories illustrated in Figure 1 were obtained.

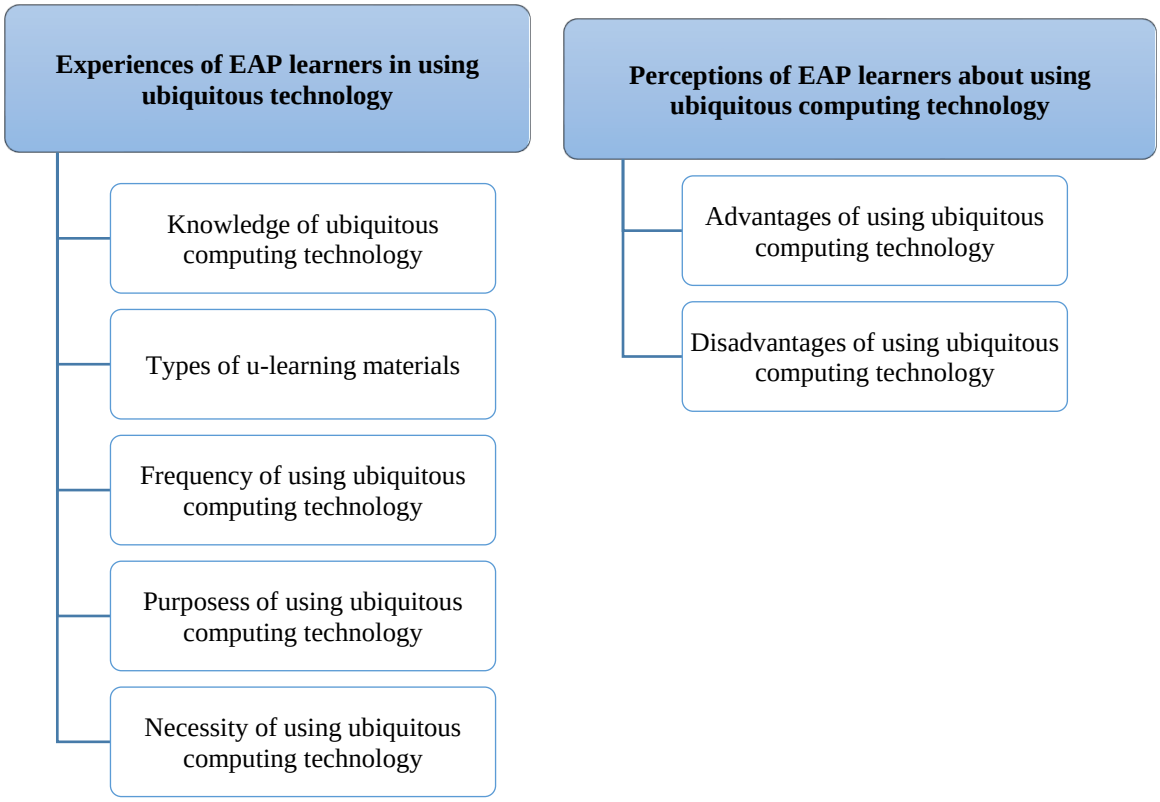

Figure 1. The Categories and Codes of the Study

FINDINGS

The findings obtained as a result of data analysis are given in line with the research questions, and interpretations are presented for these findings. Direct quotations are given for the findings obtained from the data, and the raw data are reflected to the reader as well. The raw data were collected in Turkish during the interviews, and then, while quoting these data, they were translated into English by adhering to the original ones as much as possible. The interpretation of the questions in

the categories acquired from data analysis is made in accordance with the two research questions of this study.

What are the Experiences of EAP Learners in Using Ubiquitous Computing Technology?

In line with the first research question of the study, the participants were asked if they had knowledge about ubiquitous computing technology if they had any experience with it, and how long they had been using ubiquitous computing technology, what types of u-learning materials they used, how often they used ubiquitous computing technology, and also whether using ubiquitous computing technology is necessary for learning English for academic purposes.

Knowledge of Ubiquitous Computing Technology

A few of the participants stated that they had no information about ubiquitous computing technology. On the other hand, some of the participants pointed out that they did not know about ubiquitous computing technology as a term but that they used some kinds of ubiquitous computing technology unwittingly:

> "Well, I do not know exactly at all, but I think we always use it in our lives. I mean, we already see it all the time. We can do it even on the phones we have. That is, we are […] we are looking for a term in English […] in different applications. I have some information in this sense." [Participant 05]

Some other participants expressed that they had partial knowledge about the term, but not academically:

> "Well, erm, I do not know […], I do not have any information about what the term is, what it means academically, but what it evokes in my mind, well, it is the applications we use. I mean, maybe it is something different as a term, but of course, I do not know clearly at all." [Participant 06]

Two of the participants addressed that they had never heard about the term itself, but they could remember similar things when they heard 'ubiquitous computing technology':

> "Well, erm, when I take into consideration only Turkish equivalent of the term 'ubiquitous computing technology', erm, I can remember something, but, erm, I had never heard about that term until you told me. But, erm, normally, since we call it computer technology and everywhere and every time, I think, thus, regardless of the environment, it is a term, presumably, a study involving the phones and tablets in our pockets." [Participant 08]

> "Now, I did not know it was the term, erm, you mentioned. So, yes, erm, I am aware that it has such an advantage, but I did not know it was the equivalent of the term. That's all." [Participant 11]

On the other hand, two of the participants expressed that they had information about the term:

> "I have information about it. I know, at least, it covers, erm, all of the learning styles until now. Well, I know it includes distance learning, e-learning, mobile learning, etc." [Participant 02]

> "Well, I have information about the term. Erm, you have already given information about the term. Well, I have two-three […], two-three experiences as well." [Participant 10]

Their responses revealed that they had experience somehow about using ubiquitous computing technology by mobile devices, personal computers, laptops, etc.:

> "So, erm, now this kind of education, erm, in an academic sense, erm, I use this technology to learn English." [Participant 03]

> "Erm, well, let me say, a personal computer is already a technological device. Erm, we can access data on the computer. We reach information through computers. […]" [Participant 04]

Furthermore, they stated that they had been using ubiquitous computing technology for at least one year or more:

> "Well, in the past, I used to follow the distance education of Anatolian University for a certain period. Erm, now, I use it as a way of distance learning. I am getting a distance language education. I have been using it for language learning for about two years. But in general, four years in total. I have used it for four years." [Participant 02]

The findings pointed out that a few participants indicated they had no information about ubiquitous computing technology. On the other side, it was seen that some participants had knowledge about ubiquitous computing technology but that their level of knowledge was limited. That is, they used ubiquitous computing technology unconsciously; however, they did not know the term itself. Some other participants were seen to have partial knowledge about the term, but not academically. A few participants were seen not to hear the term itself before at all. Besides, two of the participants stated that they had information about ubiquitous computing technology. Even in literature, there isn't an exact or clear definition of the term. Since the learning environment changes very quickly, there is no exact definition of u-learning (Hwang et al., 2008). Though most of the participants use ubiquitous computing technology, they mostly do not know about the term "ubiquitous" maybe because the term is relatively new and that it is not used very often in daily life.

As for the experience, it can be inferred from the participants' answers somehow that they all had experience with ubiquitous computing technology. Again, all the participants are seen to have used ubiquitous computing technology for at least one year or more. Hwang et al. (2011, p. 1) state that global digitalization in last years has been evolving into wireless communication and sensor technologies, which can notice the context of our daily activities, and provide individual supports as required. From this point of view, it can be said that those technologies are an integral part of daily life and thus all of the participants have experience in ubiquitous computing technology, though not all of them know about the term itself.

Types of U-Learning Materials

The participants also replied to the question about what types of u-learning materials, devices, tools, etc. they use in different perspectives. For example, one of the participants stated that he benefited from social media most:

> "[…] now, I mean, I am using for example … [He pauses] as I said, there are some accounts on social media I follow more when they are online." [Participant 01]

Another participant emphasized that he only preferred certain types of devices:

> "Computer, tablet, and mobile phone… Well, I do not use anything other than those. Only those three…" [Participant 02]

Yet another participant addressed that she preferred more devices, software, and contents:

> "Hmm… We already use smart…, smartphones. We use laptops, portable computers. We already use desktop computers in our offices, likewise, at homes. Erm, the television already … Though I do not use television so often, the computer

> is much more important for me or mobile phone. I often use them. Well, I use Google Translate very often. […] I even downloaded its application on my phone. I take a photo and it translates instantly. […] Apart from that, there are lots of, erm, movie sites. I mean, there are websites where we can watch foreign movies, the movies we like, with English subtitles. Similarly, there are some programs on those sites through which we can start from the beginning level, erm, from A1 level to C level. That is, there are so many of such websites, foreign… We can also search for and find those websites." [Participant 04]

One other participant highlighted that she benefited from a wide range of applications and websites:

> "I use mobile applications. At the same time, I benefit from websites. I am using mobile applications, well, the mobile applications of the foreign language course that I am attending. […] I use yds.net. I also use its mobile application. Let's say, I am at the same time interested in, erm, its website as well, in the sense of e-learning. I benefit from Tureng. Well, except for that, I practice on some, erm, pages, erm, on social media. For example, Akın Dil has such an account on Instagram, I benefit from it, its posts. Likewise, I try to benefit from some Instagram web…, accounts related to learning English, in the sense of vocabulary acquisition." [Participant 07]

Furthermore, the findings regarding the types of u-learning materials, devices, tools, etc. they used, different sources were touched by the participants. For example, one of the participants can be seen to benefit from social media most. Another participant can be said to prefer many different devices, such as smartphones, laptops, portable computers, desktop computers, television; and contents such as videos, movies; and a range of websites. The devices in a ubiquitous learning environment are equipped with a sensor that can interact with the environment in our real life and they can exchange their data with each other. Among these devices are RFIDs, contactless smart cards, sensor network nodes, and tiny mobile devices (Sakamura & Koshizuka, 2005).

Frequency of Using Ubiquitous Computing Technology

The third question within the scope of the first research question is about the frequency of use of ubiquitous computing technology. In this regard, except one of the participants, all of the others indicated that they used it every day:

> "Well, I enter the site, let me say, every two days. And at intervals, I mean, I purchase it when I need it. But I do not log in every day. Let's say, two hours in two days." [Participant 10]

When it comes to the frequency of use of ubiquitous computing technology, it can be seen that although almost all participants used ubiquitous computing technology every day, only one participant stated that he logged in to the website he used for two hours in two days. This situation may be derived from the fact that technology is increasingly being used in education as it spreads into every aspect of our lives. Ubiquitous technologies provide the opportunity to access information in an easy and comfortable way, so they can be useful in education as well (Marwan et al., 2013).

Purposes of Using Ubiquitous Computing Technology

The participants were also asked what their own purposes of using ubiquitous computing technology were. Many of the participants stated that they used ubiquitous computing technology for academic purposes:

> "I use it for my academic career. I have to learn a foreign language to advance an academic career. Currently, I use it for that purpose." [Participant 01]

> "Academic. Yes." [Participant 10]

Some other participants stated that their purpose was to pass the foreign language exams:

> "Well, exam-oriented academic purpose […]" [Participant 02]

> "Well, to learn English. Well, I am preparing for YDS and YÖKDİL (foreign language exams in Turkey) right now, erm, I am using them for YDS and YÖKDİL in, erm, academic sense." [Participant 03]

Considering the answers of the participants, it can be seen that most of them stated they used ubiquitous computing technology for translation and vocabulary acquisition:

> "I use it in translations, article translations." [Participant 04]

> "So, well, I use it especially when I need to translate something. Or, erm, when I watch a movie, when I watch a TV series, those words I heard there remain in my mind, and thus I learn them. I do research directly for it. Or when I, erm, when I need to translate an article or when I need to write an article in English, I try to use it for that purpose." [Participant 05]

> "I use the only word, erm, translation; because, while learning English, erm, I think verbatim translation, for example, we put a paragraph in it, or we put a sentence, and it translates but this doesn't provide learning; it is free-riding. When I translate something, I prefer looking up the words that I do not know. I do not think it contributes to those who make verbatim holistic translation in the sense of learning." [Participant 11]

Only one of the participants stated that she used ubiquitous computing technology to practice speaking:

> "[…] Besides, I try to chat. We went abroad a few years ago, and now I try to maintain correspondences with my friends there, erm, in daily life as well as not to lose that speaking thing. That's all! These are my initiatives." [Participant 11]

Two of the participants stated that using ubiquitous computing technology provided convenience in terms of time and place:

> "[…] Learning through computer technologies provides us more convenience in terms of time. Well, in this regard, they can be used even to save time. You can use them, erm, more effortlessly where you are. Without having to be in a certain place, you can use those computer technologies everywhere." [Participant 07]

> "So, if there is a problem, erm, in terms of time, erm, that is, being practical, it would be useful in this regard. […]" [Participant 11]

Based on the statements of participants, it can be seen ubiquitous computing technology could contribute to improving foreign language and vocabulary. Besides, ubiquitous computing technology could be used to save time and to be non-spatial. U-learning can provide the participants or users with inquiry learning by forming comprehension and skills via keeping in touch with people, objects, and contexts, and by discovering various learning styles and strategies (Liu & Hwang, 2010).

Necessity of Using Ubiquitous Computing Technology

When the participants were asked if ubiquitous computing technology had to be used in learning English for academic purposes, they emphasized that it had to be used:

> "I think it must be used. Especially mobile, erm, devices make a significant contribution. Every moment, every minute, erm, I can say that it paves the way for us to study." [Participant 03]

> "Absolutely yes in an academic sense. We are talking about Google today. Google G, erm, Glasser, erm, provides you translation through glasses, provides translation

> through the headset. Well, people must use these methods to reach a conclusion …, quickly." [Participant 10]

Participants in the study emphasized the importance of ubiquitous computing technology in learning English for academic purposes. From what the participants said it can be concluded that mobile or ubiquitous computing technologies should be used in English for academic purposes because, as is known, almost everybody has internet access in some way and for this reason, everybody can get the opportunity to reach individualized information at any time and in any place. This feature of u-learning also provides learner autonomy, which means independence, individualization, solo learning, and self-instruction (Benson, 2001). Thanks to learner autonomy, learners can be free to figure out all learning processes from setting the goals to assessing their learning without having a teacher or formal language education (Ardi, 2017).

What are the Perceptions of EAP Learners about Ubiquitous Computing Technology?

The participants were asked what they thought about using ubiquitous computing technology while learning English for academic purposes. Their responses were grouped under two categories as the advantages and disadvantages of using computing technology in the EAP context.

Advantages of Using Computing Technology

According to the participants, using ubiquitous computing technology provides a variety of advantages while learning English for academic purposes as stated in the following examples:

> "I believe it is beneficial. In the simplest term, watching a movie, erm, with subtitles is very useful in language development. […]" [Participant 01]

> "Well, when we consider it as a tool, erm, it makes the remote closer. I mean, erm, it is very useful for those who want to have an education at home, or for those who do not have enough time. Well, except for that, since it provides access to more information, you can go beyond the current standard learning and you can get the chance to learn more." [Participant 02]

One of the participants also stated a positive opinion but he thought it was limited only to grammar development:

> "Well, language learning, erm, I believe it helps a lot…, beneficial for grammar. I do not think it has a contribution to speaking or other things. Erm, it only contributes to my grammar, erm, knowledge." [Participant 03]

Yet another participant expressed that it was beneficial but that it had to be supported by formal education:

> "[…] So, if you ask my personal opinion on this issue, I think online language learning has a great contribution, but I believe it must be supported by formal education. […] Without getting professional support, both its system and way of working, I do not believe this will succeed. […]" [Participant 10]

Furthermore, they stated that they preferred ubiquitous computing technologies because of their different advantages such as portability, accessibility, ease of use, practicability, and saving time and place. The following examples clearly illustrate these advantages:

> "It provides convenience, I mean, it may be difficult to carry one, more than one dictionary or book with me; but I can learn a word instantly by going online on my

> mobile phone or computer or I can learn something new through social media. […] And it is fast, I can find something I want to learn in a little while." [Participant 01]
>
> "Since they are always with us, we can, erm, reach information we need more easily. We have, erm, the chance, erm, to learn any time, since it provides the opportunity to watch something, taking notes, erm, to follow a course, etc." [Participant 02]
>
> "Ease of use and being able to, erm, reach anywhere. […]" [Participant 10]
>
> "Practicability, completely practicability. I mean, even if I knew, I think I would use. Even if I knew English very well, I think I would use it rather than reading. It translates instantly and there are very good translation websites. Especially Google Translate, when you do a few little changes, it translates well. It is practical for me. No waste of time. That's why." [Participant 11]
>
> "[…] Well, it has a great contribution in terms of saving time and place, about which we have mentioned. For example, erm, when we take a course in a different special training area, we can get rid of loss of time and place and of mental fatigue which derives from these. […]" [Participant 02]

Furthermore, they also emphasized the importance of ubiquitous computing technology to improve their productive skills, particularly their speaking proficiency, thanks to the opportunities to use the language in its real context. The following example illustrates this advantage:

> "[…] As I mentioned before, time is maybe the most important thing. Secondly, the language education of an academician shouldn't be limited to only grammar. Speaking is very important. Well, it gives the, erm, opportunity to improve it through remote connection. To exemplify, if there are at least ten applications on my phone, seven out of them are related to language learning. We are trying to get all of this through mobile applications. Erm, it provides a great educational opportunity in that way." [Participant 10]

In this sense, all of the participants are seen to have positive opinions on using ubiquitous computing technology in foreign language learning. Since ubiquitous computing technologies provide rich learning content and transport information adequately for learners during their learning activities (Jeng et al., 2010), it can be said that those technologies help and contribute to foreign language learning. Similarly, it can be concluded that ease of use, practicability, portability, being accessible anytime and anywhere, saving time and place, providing opportunities to use the language are among the advantages of using these technologies in the EAP context. In support of these findings, Domingo and Garganté (2016) state that the main factors affecting people's adoption of new media are usefulness, ease of use, personalization, and learning cost. Besides, Chen et al. (2008) point out that the learning processes in interacting with counterparts, reaching resources, and transferring data are influenced by the portability and instant communication features of mobile devices. Likewise, the advantages of ubiquitous computing technologies mentioned in literature are interactivity, flexibility, adaptability, portability, learning independently, being economic, individualization, context-aware learning environment, and being non-spatial (Huang et al., 2011; Hwang, 2006; Sharples, 2002; Zouhair et al., 2016).

Disadvantages of Using Computing Technology

Participants also touched on the disadvantages and limitations of ubiquitous computing technology in learning English for academic purposes. Although they generally have opinions in favor of the use of these technologies, they claim that they are not sufficient enough as in the following example:

> "I think it is efficient and sufficient, like in the answer of the eighth question, it is sufficient, sorry, efficient. Bec…, erm, it is efficient but not sufficient. It could be more different." [Participant 02]

Furthermore, they explained the reasons why they think they have some disadvantages such as technical problems, advertisements, different knowledge on the same topic:

> "Yes, there are. It is, erm, not related to the application of technology, it is entirely related to the internet infrastructure of government. Of course, it is a technical dimension. The problem is about the technical dimension." [Participant 02]

Similarly, another participant suggested that the infrastructure had to be improved well for ubiquitous computing technology to be more sufficient:

> "[…] As I said, it must be open to innovations and its infrastructure should be set up precisely. For example, I received an online education before, foreign language, academic translation. When I attended online lessons, since there were too many learners logged in, I used to disconnect. It used to unavoidably affect me negatively. […] So, the infrastructure should be set up precisely for this technology to be efficient and sufficient. And, at the same time, erm, it must be open to innovations." [Participant 07]

Another participant also thought that the frequent broadcast of advertisements is also a disadvantage to using these technologies:

> "[…] So, since they are free applications, those videos or advertisements can be seen. Normally, if you buy the paid version, you can avoid those problems indeed. Except for that, if there is another problem, it can be solved by contacting the communications center or customer care." [Participant 07]

Furthermore, they can reach a variety of information on the same topic, which is also described as a disadvantage for these technologies as stated in the following example:

> "Yes, erm, I had some problems. Once, in a research subject, it was homework at university. It was about another course, not English. We were doing research. I searched for one or two websites. I realized that there was very different, and even opposite information on both sides. Then, I searched for it on several other websites. The more I searched for in detail, the more different information I met. I got confused. So, I couldn't make sure which information was correct. […]" [Participant 09]

DISCUSSION

Considering the answers of the participants, it can be inferred that many of them approve ubiquitous computing technology is efficient but not sufficient in learning English for academic purposes. Besides, those insufficiencies or disadvantages of ubiquitous computing technology may be derived from individual differences of learning or personal disabilities. For instance, users or learners can be technologically challenged and, for this reason, may be reluctant to participate, and some of them may have problems in language communication (Kang & Kim, 2015). In addition to the findings of this study, Zouhair et al. (2016) propose some other negative aspects of using ubiquitous computing technology such as limited memory size, battery capacity, data rate, and bandwidth usage.

CONCLUSION

The current study tried to find out the EAP learners' experiences of using ubiquitous computing technology to learn English for academic purposes and their perceptions about these technologies. It is seen that all the participants in our study have more or less information about the notion of ubiquitous computing technology and that they use some kinds of ubiquitous computing technology. However, it is obvious that they do not have exact or academic information about the "definition of the term". Besides, during the interviews, most of the participants stated that they hadn't heard about the term before.

Since there is no exact definition of u-learning (Hwang et al., 2008), there are no exact characteristics of u-learning as well. Various researchers emphasize a variety of characteristic properties of u-learning. For instance, these properties are listed as three unique key features to handheld computing, which are permanency, accessibility, and immediacy (Curtis et al., 2002; Ogata & Yano, 2004). Likewise, those characteristics are added two more by Yahya et al. (2010) as interactivity, and context-awareness. In line with the findings of this study, it is seen that using ubiquitous computing technology provides all of those characteristics of u-learning. For example, considering the responses of the participants, it can be said that users of u-learning materials can get permanent knowledge, that they can reach information whenever and wherever they want, that they can access information instantly, that they can interact with other learners through u-learning environment, and that they are offered personal contents in accordance with their learning needs and aims.

The problems related to the definition of u-learning in the field of learning are included in the literature of this study. Hwang et al. (2008) state that since e-learning and m-learning constitute the basis of u-learning, it can be the source of difficulties in defining u-learning. Most of the participants often expressed that ubiquitous computing technology provides learning at any time and in any place and that it would be a significant advantage of u-learning. Uemukai et al. (2004) express that the information inserted in a u-learning setting can always be used by everyone through mobile devices and wireless technologies. In this case, it can be said this situation is in accordance with the results of the research. Similarly, it was also pointed out that ubiquitous computing technology had a considerable contribution to EAP learners' learning process. However, its disadvantages such as technical problems, advertisements within applications, and the variety of information or information pollution were also discussed in this study.

Considering the findings of the research, it can be said that there are still some problems related to the substructure of software or mobile technologies. Because significant troubles about capturing and use of contextual data need to be addressed (Verbert et al., 2012, p. 15) eliminating these problems in the technical sense will enable users to access information more easily and to use ubiquitous computing technology materials more efficiently. As for u-learning users to learn English (or another foreign language), by the findings of the current study, using u-learning materials or contents can help to contribute to their knowledge, improving their learning skills, enhancing their vocabulary level, interacting with other language learners in the online environment. Moreover, via u-learning, the users can get the chance to access information whenever they want and wherever they are as well as acquiring the individualized data or information they need exactly. Based on these findings, it can be suggested that some substructure problems in computing technologies which can prevent or interrupt learning should be removed, that the individuals who use or who

want to use ubiquitous computing technologies should be introduced to those technologies at very early ages and thus, much more awareness should be created, and also that ubiquitous computing technology will be much more effective and efficient if it is supported by formal education.

Since the participants of this study were not experts in the field, some of them did not have sufficient information or knowledge about ubiquitous computing technology. For that reason, making people who use ubiquitous computing technology in learning English for academic purposes more conscious and creating awareness about how and when to use it may be more beneficial. In this sense, users of ubiquitous computing technology can be given a kind of education or some seminars on that issue can be organized.

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Genişletilmiş Özet

Giriş

Teknolojinin gelişmesiyle birlikte bilgi teknolojileri de gelişmiş ve bunun neticesinde de hem teknoloji hem de teknolojik ürünler hayatımızın her alanında daha fazla kullanılmaya başlanmıştır. Benzer şekilde, eğitim çevrelerinde de teknoloji gittikçe daha yaygın bir şekilde kullanılır hale gelmiştir. Teknolojinin eğitim çevrelerinde kullanımı e-öğrenme (elektronik öğrenme) ile başlamış, bunu m-öğrenme (mobil öğrenme) takip etmiş ve şimdi ise bu öğrenme modellerinin hepsini kapsayan u-öğrenme (ulaşılabilir öğrenme) modeli ortaya çıkmıştır.

Bu çalışma, "her an her yerde bilgisayar teknolojileri"nin akademik amaçlı İngilizce öğreniminde nasıl yer aldığını ve akademik amaçlı İngilizce öğrenenlerin 'her an her yerde bilgisayar teknolojileri' konusundaki tecrübe ve görüşlerini incelemektedir. "Her an her yerde bilgisayar teknolojileri" konusunun, farklı disiplinlerde farklı yönleri ele alınarak birçok çalışmaya konu olduğu söylenebilir; ama her an her yerde bilgisayar teknolojilerini kullanarak yabancı dil öğrenme -özellikle de akademik amaçlı İngilizce öğrenme- hakkında yeterince çalışma bulunduğunu söylemek zordur. Literatür taraması yapıldığında, m-öğrenme, e-öğrenme, u-öğrenme gibi konular ve "akademik amaçlı İngilizce öğrenimi" başlığının ayrı ayrı ele alındığı görülmektedir; fakat bu öğrenme yöntemlerinin ya da araçlarının akademik amaçlı İngilizce öğrenimi konusuyla birlikte ele alındığı bir çalışmanın olmadığı göze çarpmaktadır.

Türkiye'deki çalışmaların çoğu Bilgisayar Teknolojileri, diğer bazı çalışmaların ise Fen Bilimleri alanında olduğu gözlemlenmektedir. Bunun yanı sıra, 'her an her yerde bilgisayar teknolojileri' ile 'akademik amaçlı İngilizce öğrenimi' arasındaki ilişki hakkında dünya çapında henüz çok sayıda çalışmanın olduğunu söylemek mümkün değildir. Bu bağlamda, her an her yerde bilgisayar teknolojileri kullanılarak akademik amaçlı İngilizce öğreniminde her an her yerde bilgisayar teknolojilerinin kullanımı ve akademik amaçlı olarak İngilizce öğrenen kişilerin her an her yerde bilgisayar teknolojilerini kullanma konusundaki tecrübe ve algılarının neler olduğu tespit edilmeye çalışıldı. Bu amaç doğrultusunda, aşağıdaki araştırma soruları cevaplanmaya çalışıldı:

Akademik amaçlı olarak İngilizce öğrenen kişilerin, her an her yerde bilgisayar teknolojilerini kullanma konusundaki deneyimleri nelerdir?

Akademik amaçlı olarak İngilizce öğrenen kişilerin, her an her yerde bilgisayar teknolojilerini kullanma konusundaki algıları nelerdir?

Yöntem

Çalışmadaki katılımcılar, amaçlı ve uygun örneklemeye dayalı ve tamamen gönüllülük esasına göre belirlenmiştir. Veriler, Türkiye'de özel bir dil kursunda akademik amaçlı yabancı dil (İngilizce) sınavlarına hazırlanan, farklı meslek ve yaş gruplarından on bir kişiyle yüz yüze görüşmeler yapılarak toplanmıştır. Görüşmelerden önce katılımcılara araştırma hakkında detaylı bilgi vermek ve kişisel bilgilerin gizli tutulacağına dair taahhüt vermek amacıyla "araştırmaya gönüllü katılım formu" imzalatılmıştır. Bu görüşmeler, tamamen katılımcıların uygun gördükleri yer ve saatlerde yapılmış olup kişisel bilgilerin gizli tutulması konusunda gereken hassasiyet gösterilmiştir. Bu yüz yüze görüşmelerde katılımcılara on beş adet açık uçlu soru sorulmuştur. Katılımcıların cevapları ses kaydı olarak alınmış ve daha sonra bu ses kayıtları transkript edilerek yazıya dökülmüştür. Bu kayıtlardan elde edilen veriler

içerik analizi yöntemi ile incelenerek kodlar, kategoriler ve temalar elde edilmiştir. Veriler analiz edilirken katılımcıların isimleri gizli tutularak kimlik bilgilerinin gizli kalması ve güvenilirliğinin sağlanması için 'Katılımcı 01, Katılımcı 02, Katılımcı 03' şeklinde numaralandırılmıştır. Verilerin analizinde N-Vivo 12 Pro programı kullanılmıştır.

Bulgular

Çalışmadan elde edilen bulgular, tüm katılımcıların sürekli ve aktif olarak her an her yerde bilgisayar teknolojilerini kullandığını, her an her yerde bilgisayar teknolojilerinin sürekli ve kalıcı öğrenme, bilgiye hızlı erişim, zaman kaybının önlenmesi ve diğer öğrencilerle etkileşim gibi akademik amaçlarla İngilizce öğrenmeye katkı sağladığını düşündüklerini göstermektedir. Ancak, katılımcıların çoğu "her an her yerde (ubiquitous)" terimi hakkında bilgi sahibi olmadıklarını veya bu terimi daha önce hiç duymadıklarını, bazıları ise bu terim hakkında -akademik anlamda olmasa da- kısmen bilgi sahibi olduklarını, aslında farkında olmadan her an her yerde bilgisayar teknolojilerini günlük hayatlarında kullandıklarını belirtmişlerdir. Katılımcıların çoğunun her an her yerde bilgisayar teknolojileri türlerinden akıllı telefon, tablet, dizüstü bilgisayar gibi aygıtları; sözlük, çeviri veya sosyal medya siteleri gibi internet sitelerini kullandıkları gözlemlenirken bazı katılımcılar ise çevrimiçi kurs veren internet sitelerinden ve video, film gibi içeriklerden yararlandıklarını belirtmişlerdir.

Tartışma

Katılımcıların neredeyse tamamı her an her yerde bilgisayar teknolojilerini ve bu teknolojilere yönelik içerikleri her gün kullandıklarını ve bu teknolojileri çoğunlukla akademik amaçlı İngilizce öğrenimi ve çevrimiçi yabancı dil öğrenme siteleri, sözlük siteleri vb. siteler için kullandıklarını belirtmişlerdir. Bütün katılımcılar, her an her yerde bilgisayar teknolojilerinin, akademik amaçlı İngilizce öğrenimi açısından önemli ve gerekli olduğunu ifade etmişlerdir. Ayrıca, her an her yerde bilgisayar teknolojilerinin, akademik amaçlı İngilizce öğreniminde birçok faydasının ve avantajının olduğunu ama bu teknolojilerin tek başına yeterli olmayacağını, yüz yüze kurslarla ve alanında uzman kişilerin rehberliğiyle desteklenmesi gerektiğini belirtmişlerdir. Bununla birlikte, her an her yerde bilgisayar teknolojilerinin teknik ve altyapı sorunları, bilgi kirliliği ve terimlerin tercümesindeki yetersizlikler gibi bazı dezavantajları ve sınırlamaları da ele alınmıştır.

Sonuç

Bu çalışma sonucunda, her an her yerde bilgisayar teknolojileri akademik amaçlı İngilizce öğreniminde farklı amaçlarla ve şekillerde kullanılabileceği, doğru ve uygun kullanımların akademik amaçlı İngilizce öğrenimine önemli katkı sağlayacağı, ancak diğer teknolojik ürünlerde olduğu gibi öğrenim esnasında teknik ve kişisel nedenlerden dolayı bazı sorunlarla karşılaşılabileceği görülmektedir.

Etik Kurul Belgesi: Bu çalışmadaki veriler 2020 yılından önce toplandığı ve bu çalışma 2019 yılına ait bir yüksek lisans tezinden üretildiği için, Etik Kurul Onay Belgesi alınmamıştır.