THE USE OF CALL TO FOSTER LEARNER AUTONOMY IN EFL: A QUASI-EXPERIMENTAL STUDY

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ABSTRACT

THE USE OF CALL TO FOSTER LEARNER AUTONOMY IN EFL:
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The purpose of the present study was to investigate the effects of computer-assisted language learning (CALL) on learner autonomy. In order to do that, the study was conducted as a quasi-experimental study with an experimental group and a control group. The participants were 50 English as a foreign language (EFL) learners studying in the preparatory school of a state university in Ankara, Turkey. As part of the study, a CALL treatment that aimed to foster learner autonomy was designed and implemented in the experimental group for seven weeks. During the treatment, the learners were introduced to various online tools, and they used the tools in their out-of-class studies. The data were collected through a questionnaire, which was administered in both groups before and after the CALL treatment, and semi-structured interviews with 9 participants from the experimental group. The quantitative data were analysed through the statistical software SPSS. The qualitative data were analysed through constant comparative method.

The findings demonstrated that the experimental group had a significantly higher self-perceived autonomy level after the CALL treatment compared to the autonomy level of the control group and to its autonomy level before the treatment. The findings also showed that the learners had positive overall perceptions towards the CALL treatment, but they also mentioned its' challenges and suggestions to improve it. Based on the findings, several pedagogical implications were highlighted for stakeholders in the field of EFL.

Keywords: Learner Autonomy, Foreign Language Education, Computer-Assisted Language Learning

ÖZ

İNGİLİZCE ÖĞRENİMİNDE ÖĞRENEN ÖZERKLİĞİNİ GELİŞTİRMEK İÇİN BİLGİSAYAR DESTEKLİ DİL ÖĞRENİMİNİN KULLANILMASI: YARI-DENEYSEL BİR ÇALIŞMA

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Bu çalışmanın amacı bilgisayar destekli dil öğreniminin öğrenen özerkliği üzerindeki etkilerini araştırmaktır. Bu amaçla, çalışma bir deney grubu ve bir kontrol grubunu içeren yarı-deneysel bir çalışma şeklinde gerçekleştirilmiştir. Çalışmanın örneklemini Türkiye'nin Ankara ilinde bulunan bir devlet üniversitesinin hazırlık okulunda öğrenim görmekte olan 50 İngilizce öğrencisi oluşturmuştur. Çalışma sürecinde, bilgisayar destekli bir dil öğrenimi programı tasarlanmış ve bu program deney grubunda yedi hafta boyunca uygulanmıştır. Uygulama sırasında, katılımcılara çeşitli çevrimiçi araçlar tanıtılmış ve katılımcılar bu araçları sınıf-dışı çalışmalarında kullanmışlardır. Çalışma için veri, her iki gruba da uygulama öncesi ve sonrasında uygulanan bir anket ve deney grubundan 9 katılımcı ile gerçekleştirilen yarı-yapılandırılmış görüşmeler aracılığı ile toplanmıştır. Toplanan nicel veri bir istatistik programı olan SPSS ile analiz edilmiştir. Nitel veri ise sürekli karşılaştırma metodu kullanılarak analiz edilmiştir.

Çalışma sonucunda ortaya çıkan bulgular, katılımcı algılarına göre, deney grubunun bilgisayar destekli dil öğrenimi uygulamasından sonraki özerklik seviyesinin, kontrol grubununkine göre ve ayrıca deney grubunun uygulama öncesindeki özerklik seviyesine göre önemli ölçüde yüksek olduğunu göstermiştir. Ayrıca, öğrencilerin bilgisayar destekli dil öğrenimi uygulaması ile ilgili genel olarak olumlu görüşlere sahip oldukları görülmüştür. Bununla birlikte, katılımcılar uygulama sırasında yaşadıkları bazı zorlukları ve uygulamayı geliştirmeye yönelik önerilerini de belirtmişlerdir. Elde edilen bulgulara dayalı olarak, İngilizce öğretimi alanında çalışanlar için uygulamanın sunduğu eğitimsel çıkarımlar vurgulanmıştır.

Anahtar Kelimeler: Öğrenen özerkliği, Yabancı Dil Eğitimi, Bilgisayar Destekli Dil Öğrenimi

To My Family

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LIST OF ABBREVIATIONS

CALL	Computer-Assisted Language Learning
CRAPEL	Centre de Recherches et d'Applications en Langues
EFL	English as a Foreign Language
ELL	English Language and Literature
ELT	English Language Teaching
ESP	English for Specific Purposes
FLE	Foreign Language Education

CHAPTER 1

INTRODUCTION

1.0 Introduction

In this chapter, the background to the study, statement of the problem, research questions, significance of the study and key terms used in the study will be presented.

1.1 Background to the study

Learner autonomy has been a prevalent concept in the field of foreign language education (FLE) in recent years. In language education, the shift away from the behaviourist approaches that underlie methods such as audiolingualism towards more communicative approaches brought about the idea of learner-centeredness (Benson, 2001). The learner rather than the teacher has become the centre of the process of learning and teaching (Nunan, 1988). Learners have been viewed as active participants of learning that need to communicate in the target language, cooperate and collaborate with others and take part in problem-solving tasks. Furthermore, educators and institutions have focused more on the individual needs, characteristics, goals and preferences of learners.

As a concept that is in line with the principles of communicative language teaching and learner centeredness, it was natural that the innovations in language education led to the introduction of learner autonomy into the field, and it even gained a buzzword status within this context (Schwienhorst, 2008). However, discussions on autonomy has shown that it has often been misunderstood as a concept. For example, some assumed that it is the same concept as self-access learning, and some viewed it as synonymous with self-instruction, thinking that it means leaving learners alone or letting them decide everything on their own in the learning process (Schwienhorst,

2008). It has often been assumed that it means learning in isolation, learning without an instructor or learning outside the classroom (Benson, 2001).

It can be said that these misconceptions about learner autonomy are caused by the confusion about the definition and conceptualization of the term as it is a multidimensional concept that can take many forms (Benson, 2001). With the aim of clarifying the concept, many definitions have been suggested for learner autonomy, but a consensus on how to define it have not been reached. The earliest definition was offered by Holec (1981), who introduced autonomy as a pedagogical concept to the field of FLE. He defined autonomy as "the ability to take charge of one's own learning" (p. 3) and explained that an autonomous learner takes responsibility in all aspects of the learning, namely "in determining the objectives, defining the contents and progressions, selecting methods and techniques to be used, monitoring the procedure of acquisition of properly speaking, evaluating what has been acquired" (Holec, 1981, p. 3). Another definition was offered by Little (1991), who wanted to highlight the cognitive processes involved in autonomy. He states that,

> autonomy is a capacity – for detachment, critical reflection, decision-making and independent action. It presupposes, but also entails, that the learner will develop a particular kind of psychological relation to the process and content of his learning. The capacity for autonomy will be displayed both in the way the learner learns and in the way he or she transfers what has been learned to wider contexts. (p. 4)

Another definition that contributed to the aforementioned ones was suggested by Benson (2001). He aimed to emphasize learners' control over the learning content and defined autonomy as "the capacity to take control of one's own learning" (p. 47).

A number of other definitions have been offered in the literature, but the three definitions mentioned above are among the ones that still lead the recent discussions on learner autonomy. In addition to the attempts to define the concept of learner autonomy, many scholars have listed the characteristics of autonomous learners (e.g. Breen & Mann, 1997; Candy, 1991; Dam, 1990; Dickinson, 1993). To illustrate, Dam (1990, 1995) suggests that autonomous learners choose their own learning aims and set goals for themselves, choose learning materials, methods and tasks, choose how to organise the learning process and also choose criteria to evaluate their learning.

A lot of studies on learner autonomy has highlighted its' benefits for FLE. Learner autonomy emphasizes the active role of the learner in the learning process. It requires learners to learn how to think and learn and to take control of their learning through critical thinking, creativity, problem-solving skills and learning strategies. Learners are expected to be active participants that take responsibility for their own learning (Benson, 2006a). Dam (1995) suggests that involving learners in decision making increases the effectiveness of learning. Similarly, Opalka (2001, as cited in Balçıkanlı, 2006) states that learner autonomy makes learners more involved in the learning process and they can develop their learning strategies. Jiao (2005) suggests that autonomous language learners use the opportunities to communicate in the target language effectively, even in non-native environments.

These assets of learner autonomy are largely in line with the principles of communicative language teaching and learner-centeredness. Therefore, fostering learner autonomy has been a major aim of many language learning programs, curriculums and materials. This increasing interest in the concept has heightened the need for developing effective methods and techniques to foster learner autonomy in FLE. With this aim, many different approaches have been offered and practised (e.g. Cohen, 1999; Cotterall, 1995; Dam, 2011; Esch, 1997; Little, 1991, 2001; Littlewood, 1997; Nunan, 1997; Reinders, 2010). Benson (2001) emphasizes that it is natural to have various different approaches in the literature since autonomy has many different dimensions and it is not exercised only in one form. He categorized the approaches to fostering autonomy by gathering the practices associated with autonomy under six categories:

- Resource-based approaches
- Technology-based approaches
- Learner-based approaches
- Classroom-based approaches
- Curriculum-based approaches
- Teacher-based approaches (Benson, 2001, p. 111)

Among these approaches to fostering learner autonomy, one of the most relevant ones to the current trends both in education and in today's world is the category of technology-based approaches. As Motteram (1997, as cited in Benson, 2001) suggests,

"There has always been a perceived relationship between educational technology and learner autonomy" (p. 136) due to the wide range of merits technology has for the promotion of learner autonomy. Technology gives learners the chance to take more control over their learning (Reinders & Hubbard, 2013). It enables learners to access self-study materials and engage in language learning activities that are suitable for their levels, needs and interests with the support of multimedia sources. Learners can study with authentic materials and complete authentic learning tasks in realistic contexts. Furthermore, it eliminates time and place restrictions largely, giving learners the opportunity to self-regulate their studies. In this way, learners are able to learn at their own pace with unlimited practice options. Another asset of technology is enabling learners to use the target language by interacting with both native and non-native speakers outside the classroom. Technology also helps teachers to connect with learners in different ways in and outside the classroom and create and assign novel learning activities that facilitate both the learning of the target language and the development of learner autonomy (Reinders & Hubbard, 2013).

All these opportunities can make students more autonomous learners that take responsibility and control of their own learning. Today, with the help of the rapid developments in technology, it has become a part of our daily lives. The increased availability of many technological tools such as the computer and smart phones and easy access to the Internet have led to the integration of technology to education including the field of FLE. Therefore, it is crucial to make use of the opportunities technology offers in the aspect of fostering learner autonomy.

1.2 Statement of the problem

Both theoretical and empirical findings indicate that learner autonomy has many assets to offer for effective language learning, and promoting learner autonomy has been widely adopted as an educational goal. However, it has been found that, in practice, learner autonomy has failed to be promoted effectively in many contexts.

Learner autonomy entails a shift from a teacher-directed learning environment to a learner-centred one (Dam, 2011). However, as Benson (2001) states, it might be

challenging to create such an environment in reality because of numerous factors related to the learning context, learners or teachers. Many teachers do not find opportunities to promote learner autonomy through in-class practices in traditional FLE settings because of various reasons such as curriculum and time limitations, exam-based education systems, socio-cultural barriers and learners' reluctance (Borg & Al-Busaidi, 2012; Darsih, 2018; Salimi & Ansari, 2015; Shahsavari, 2014; Tayjasanant & Suraratdecha, 2016).

These factors that limit the promotion of learner autonomy can also be observed in the educational institutions in Turkey. The Turkish educational context is mostly viewed as an exam- and authority-oriented one that does not encourage learners to take responsibility for their learning (Karabıyık, 2008; Sert, 2006; Yumuk, 2002). This includes English language teaching (ELT), in which the students are usually exposed to traditional methods of teaching (Boyno, 2011; Üstünoğlu, 2009**).** As a consequence of the application of these traditional methods, learners usually fail to learn the target language effectively and they do not develop to be autonomous learners (Sert, 2006; Tütüniş, 2011). Many of the studies that investigated learners' autonomy levels and perceptions towards autonomy (e.g. Barlas, 2012; Baylan, 2007; Dokuz, 2009; Tursun, 2010; Ünal, 2015; Yapıörer, 2013; Yıldırım, 2005) found that although learners took some responsibility in their learning, they mostly accepted teacher's authority and direction.

In addition to the aforementioned factors that hinder the development of learner autonomy, the effects of learners' cultures have also been highlighted by some. These arguments mainly stem from the idea that autonomy has originated from and belongs to Western cultures, therefore, while it is easily supported in these cultures where learners can take charge of their learning, learners in Eastern cultures tend to view the teacher as the authority and remain passive in the learning process (Adamson, 2003; Palfreyman, 2003; Sert, 2006). However, Sakai, Takagi and Chu (2010) claim that these tendencies are the effects of educational cultures rather than the general cultures in countries. They suggest that although East Asian students are not different from other learners, the educational norms in their countries may discourage them from

adopting autonomous behaviour. Some researchers have proposed that such effects of educational cultures can be eliminated and learner autonomy can be achieved in non-Western cultures (Chan, 2002; Gieve & Clark 2005; Littlewood, 1999; Mei, 2009; Parks & Raymond, 2004). They suggest that when learners are provided with a learning context that caters to their needs, they are usually willing and able to adopt autonomous learning.

Among many different approaches to fostering learner autonomy, utilizing technology may be the ideal option to overcome the aforementioned problems. Given its great potential to support autonomy-enhancing learning environments and also its increasing availability and integration into our daily lives, it would be natural to assume that technology is used widely and effectively to foster learner autonomy. However, research shows that it is not the case in many contexts in reality. The problems in the promotion of learner autonomy show that many educational settings fail to use technology effectively (Mutlu, 2008; Zonturlu, 2014). Therefore, it is vital to explore how to make use of technology to foster learner autonomy in FLE.

1.3 Purpose of the study and research questions

The purpose of the present study is to investigate the use of technology, and specifically of computer-assisted language learning (CALL), to promote learner autonomy in an English as foreign language (EFL) context. It aims to explore how to make use of the available technology within the access of learners and teachers in many learning contexts such as computers and the Internet to promote learner autonomy. It focuses on the effects of the CALL implementation applied during the study on the autonomy levels of students based on the perceptions of students. Finally, it attempts to explore learner perceptions on the benefits and challenges of the technology implementation. Based on these purposes, the study aims to explore the answers to the following questions:

1. How does the CALL implementation affect the self-perceived autonomy levels of EFL learners studying in higher education?

a) Does the CALL implementation affect the self-perceived autonomy levels of the participants at between-groups level?

b) Does the CALL implementation affect the self-perceived autonomy levels of the participants at within-groups level?

2. What are the perceptions of EFL learners studying in higher education on the CALL implementation?

a) What are the changes in the perceptions of the participants on the use of technology to learn English before and after the CALL implementation?

b) What are the benefits of the CALL implementation according to the participants?

c) What are the challenges of the CALL implementation according to the participants?

d) What are the effects of the CALL implementation on learner autonomy according to the participants?

e) What are the suggestions of the participants to improve the CALL implementation?

In order to address the questions, a quasi-experimental study was conducted with 50 students in a preparatory school at a Turkish state university. The experimental group consisted of 25 learners in two classes, and the control group consisted of 25 learners in two other classes in the school. A seven-week technology implementation was applied in the experimental group. The data were collected through both qualitative and quantitative methods.

1.4 Significance of the study

The concept of learner autonomy has been extensively studied in the field of FLE. In Turkey, a large number of studies have explored it from various different perspectives. A group of these studies investigated learners' autonomy levels or their perceptions

towards learner autonomy (e.g. Barlas, 2012; Baylan, 2007; Dokuz, 2009; Tursun, 2010; Ünal, 2015; Yapıörer, 2013; Yıldırım, 2005), the relationship between learner autonomy and other variables such as foreign language achievement, strategy use, or culture of learning (e.g. Alyas, 2011; Bayat, 2007; Gökgöz, 2008; Karabıyık, 2008; Rezalou, 2014; Ünlü & Er, 2016), teacher perceptions towards learner autonomy (e.g. Baylan, 2007; Baz, Balçıkanlı & Cephe, 2018; Doğan & Mirici, 2017; Durmuş, 2006; Eren, 2015; Khalil, 2013; Sabancı, 2007; Tursun, 2010; Ünal, 2015; Ürün, 2013). There are also studies that explored ways to foster learner autonomy, and these studies mostly focused on using portfolios (e.g. Burnaz, 2011; İşler, 2005; Koyuncu, 2006; Köse, 2006; Üğüten, 2009; Yıldırım, 2013; Yılmaz, 2010), class activities (e.g. Balçıkanlı, 2006; Döndüoğlu, 2014), formative assessment (e.g. Sönmez, 2013), extensive reading (e.g. Mede, İnceçay & İnceçay, 2013) and strategy training (e.g. Ceylan, 2014; Hal, 2013; Nalkesen, 2011) to foster learner autonomy.

On the other hand, a limited number of studies in Turkey explored the use of CALL or technology to foster learner autonomy (e.g. Bitlis, 2011; Mutlu, 2008; Öğmen, 2011). Most of the existing research on the use of technology in relation to learner autonomy investigated learners' perceptions towards the use of technology and their habits of technology use (e.g. Ceylan, 2019; Mete, 2010; Zonturlu, 2014). The studies that explored how to use technology to foster it mostly made use of pre-existing language learning software or learning management systems. These programmes are usually computer-based or Web-based extensions of the course books that are used in the lessons. In most cases, they are already part of the curriculum of the institution and assigned as homework without offering much choice and control to the learner. Another approach that has been adopted in the limited number of studies that explored how to foster learner autonomy through technology is attempting to incorporate technology into lessons as class activities or as homework. These attempts have also made students use specific tools and resources to complete the assigned tasks, which means the learners had limited choice in the process.

Although all these studies have contributed invaluable findings to the literature about learner autonomy, there is a need to explore the ways to use technology in a way that

considers learner needs and preferences, and teachers' insights and that offers learners choice as well as providing them with effective guidance in the process. Therefore, the current study attempts to contribute to the filling of this gap in the existing literature. Accordingly, it made use of a technology implementation designed by the researcher instead of using an already existing commercial program or software. In that way, the researcher was able to design the implementation according to the learners' needs and preferences which she identified through her observations and experiences in her teaching. The implementation aimed to encourage the learners to use technology in their out-of-class studies in a way that enables them to make choices in the learning process. That is, the learners were able to choose the tools and resources they were going to use and also make choices on how to use them. Moreover, the implementation aimed to guide the students throughout the learning process via in-class sessions about the technology tools, an online platform where students can interact with the teacher as well as with the other learners and teacher guidance at all stages. By the help of such a technology implementation that included all these features, the study aimed to reveal valuable insights about students' perceptions towards the use of technology to foster learner autonomy.

Another important point that shows the significance of the present study is about the notion of learner autonomy itself. According to Benson (2006a), "autonomy is a contextually-variable construct" (p. 34). That is, it can take many different forms depending on the context. The variables present in a context related to learners, instructors, the learning content and materials, the teaching methods and techniques can all affect the levels of autonomy exercised in learner behaviours. Therefore, it is essential to explore the concept of learner autonomy in different learning settings in order to grasp an in-depth understanding of it. Findings from various studies conducted in a wide range of contexts can contribute to the literature in terms of the understanding and conceptualization of learner autonomy.

Similar to learner autonomy, the use of technology in FLE is an area that deserves to be researched in a wide range of contexts with different approaches to its use (Reinders & Hubbard, 2013). Technology is a tool that offers infinite opportunities related to the

field of FLE, as it does for all the other fields of research. Due to the vast number of data, tools and resources that can be accessed via technology, there are unlimited ways FLE researchers and practitioners can make use of technology. This includes ways to foster learner autonomy. Therefore, different kinds of technology implementations need to be explored in order to guide and improve both research and practice.

Finally, the present study can contribute to supporting the argument that learner autonomy is not only desirable but also feasible as a learning goal. As mentioned earlier, research shows that learner autonomy is not effectively promoted in many learning contexts in Turkey. Although many educators perceive learner autonomy as an important feature that can improve the effectiveness of learning, they mention several factors that hinder fostering learner autonomy in language education such as exam-based systems, curriculum limitations and lack of student motivation. At this point, the current study can be a valuable attempt to persuade educators that it is possible to foster learner autonomy despite the presence of many limitations. Given the increased availability of technological tools, the study offers a practical way to encourage autonomous behaviour that can be implemented in many different contexts. With the help of the technology intervention proposed in this study as well as the implications it reveals based on student perceptions, teachers can be encouraged to involve the promotion of learner autonomy in their practice.

1.5 Definitions of terms

The following terms are frequently used in the present study.

Leaner autonomy: the capacity to take control of one's own learning (Benson, 2001, p. 47)

Computer-assisted language learning (CALL): the search for and study of applications of the computer in language teaching and learning (Levy, 1997, p. 1)

English as a foreign language (EFL): the study of English by non-native speakers living in a non-English-speaking environment

Communicative language teaching: an approach to language teaching methodology that emphasizes authenticity, interaction, student-centred learning, task-based activities, and communication for the real world, meaningful purposes (Brown, 2007, p.378)

CHAPTER 2

REVIEW OF LITERATURE

2.0 Introduction

In the present chapter, the literature related to learner autonomy and the use of technology in EFL is reviewed with the aim of providing background information related to the key concepts explored in the study. The chapter is divided into three main sections. First, the concept of learner autonomy is explained by presenting the origins and definitions of learner autonomy, characteristics of autonomous learners, the importance of learner autonomy in EFL and approaches to fostering learner autonomy in EFL. The second section reviews the literature related to the concept of CALL by focusing on its historical development and its benefits and challenges related to learner autonomy. The third section presents a review of the related empirical research on learner autonomy conducted both internationally and in the context of Turkey with a focus on the studies that explored the use of technology to foster learner autonomy in EFL.

2.1 Learner autonomy

Although autonomy has been a key concept in language education and much has been written about it, it has its origins out of the field of language learning or even education in general (Benson, 2001). The idea was first used in a political background to describe city-states that were gaining their independence. Plato, then, borrowed the term to adapt it to describe an individual who is independent in thinking and action (Zembylas & Lamb, 2008; as cited in Khalil, 2013), and it has been a major concept in many liberal and humanist schools of thought particularly since the 18th century. It was a natural consequence that, as on many aspects of society, the influence of the notion of autonomy was observed on education and learning as well. Galileo supported

autonomy in learning, which can be clearly seen in his quote: 'You cannot teach a man anything; you can only help him find it within himself' (Benson, 2001, p. 23). It was also affected and shaped by many sources such as educational reform, adult education, the psychology of learning and political philosophy.

Many scholars emphasized the significance and necessity of learner autonomy, which puts the learner at the centre of learning (Benson, 2001). One of the most influential of those scholars, Jean Jacques Rousseau, who lived in the 18th century, developed a natural education model. That is, he believed that children should be free to choose what to learn and when to learn it through discovery and in direct connection with nature. He viewed teacher as an individual who supports learners and develops with them. According to his model, learners should take the responsibility for their actions. He believed that, by being educated in such a model, children would become adults who would be guided by their own authority rather than the authority of outside sources. Benson (2001) suggests that Rousseau's thought planted the seeds for the current concept of autonomy in learning. His idea of learner's taking responsibility for learning is a basic element of autonomy. Similarly, his idea that the capacity for autonomy is a part of human nature but is weakened by formal education is also shared by many scholars in the field. However, his influence was indirect, and he is rarely cited as a source in the field of autonomy (Benson, 2001).

John Dewey was another philosopher that had profound influence on autonomy. He believed that the goal of education is to prepare individuals for participation in social and political life, which was a view to later shape the theory of autonomy greatly. He also saw education as guiding learners in solving problems, which made the learners active problem solvers through group work and changed the nature of teacher authority in the classroom. These ideas of Dewey can easily be traced in the work of many researchers in the field of autonomy (Benson, 2001).

Benson (2001) acknowledges several other scholars as early contributors to the notion of autonomy in education. William Kilpatrick made his contributions through his 'project method', in which learners plan and apply their own learning projects through group work, which can help them develop the skills they need for active participation

in their communities. Paolo Freire addressed power and control issues in the classroom in his work and suggested that the role of the teacher is to introduce information in the form of problems to engage learners in active reflection rather than merely transmitting knowledge to learners. Ivan Illich heavily criticised schooling by claiming that it inhibited learning, and as an alternative to schools, he advocated informal learning. One example for this kind of learning was the proposal of 'learning webs', which are networks used for learning outside the school. Benson (2001) states that these offline networks, which were not based on technology, were actually the early versions of the current use of the Internet to connect learners across classrooms, which is an idea believed to foster autonomy. Finally, Carl Rogers's work in humanistic psychology supported self-directed learning. That is, he proposed that learning takes place through unique experiences of the individual and the teacher should act as a facilitator to help the learner with minimum intervention in the process. His views of learning as a self-directed process and of the teacher as a facilitator became major concepts in the idea of autonomy.

2.1.1 Learner autonomy in EFL

Today people all around the world learn new languages independently of formal instruction, and it is safe to say that second and foreign language learning has a longer history than that of formal education. However, since autonomy research has mainly focused on formal education, it has been present in the field of language education for approximately fifty years (Benson, 2001).

The import of autonomy into language education took place through the Modern Languages Project of the Council of Europe in 1971 (Benson, 2001). The aim of the project was to promote lifelong learning for adults, and it also focused on learner-centred practices in language education. As one of the outcomes of the project, Centre de Recherches et d'Applications en Langues (CRAPEL) was founded at the University of Nancy, France, and it quickly established its status as a prominent centre for both research and practice in language education. CRAPEL adopted an approach that was based on the ideas coming from the newly-arising concept of adult self-directed learning, which emphasized "the need to develop the individual's freedom by

developing those abilities which will enable him to act more responsibly in running the affairs of the society in which he lives" (Benson, 2001, p. 8). Yves Châlon, who was the founder of CRAPEL, is generally accepted as the father of autonomy in the field. Following his death, Henri Holec became the leader of CRAPEL, and he has been a major name in autonomy in language learning. The report by Henri Holec about the project for the Council of Europe, which was written in 1979 and published in 1981, was the first published source that applied the term of autonomy in the field of language education. Holec starts his report by portraying the social context which he assumed to shape the ideas of autonomy in education:

> The end of the 1960s saw the development in all so-called industrially advanced Western countries of a socio-political tendency characterized by a definition of social progress, no longer in terms of increasing material well-being through an increase in consumer goods and services, but in terms of an improvement in the 'quality of life' – an expression that did not become a slogan until some years later – based on the development of a respect for the individual in society. (Holec, 1981, p. 1)

Similar to the views of Holec, Gremmo and Riley (1995) believe that the interest in learner autonomy in language education stemmed from the political atmosphere in Europe in 1960s.

2.1.2 Definitions of learner autonomy

Autonomy has been defined in many different ways in the literature. The reason for the presence of various definitions for autonomy can be attributed to the fact that autonomy is not a single behaviour (Little, 1990). It is multidimensional, and it can change its form in different individuals and even in the same individuals depending on the context and time (Benson, 2001). On the other hand, Benson (2001) argues that the attempts to define autonomy are necessary for two main reasons. Firstly, for the purposes of having construct validity in research, it is necessary to be able to describe autonomy as observable behaviours. Secondly, attempts to foster autonomy can be more successful when they are based on a clear understanding of autonomy and behaviour related to it.

In his report to the Council of Europe, Holec (1981) came up with a definition of learner autonomy which was later to be one of the most widely-accepted and

commonly-used definitions of the term: “the ability to take charge of one’s own learning” (p. 3). Accordingly, he suggested that a learner is autonomous if he/she takes responsibility in:

- determining objectives,
- defining the contents and progressions,
- selecting methods and techniques to be used,
- monitoring the procedure of acquisition properly speaking,
- evaluating what has been acquired. (Holec, 1981, p. 3)

Holec further explained that learners employ these metacognitive strategies at different levels of effectiveness, which causes them to exercise different levels and forms of autonomy. This suggests that autonomy is not a state that is achieved as an endpoint. Instead, it is a continuum that ranges from no autonomy to complete autonomy (Albadry, 2018; Sinclair, 2000).

Holec (1981) elaborates on his definition of autonomy by adding that it is not an inborn ability and it must be acquired by natural means or by formal learning. That is, although Holec defined autonomy as an ability, he emphasizes that it is not a feature people are born with. He rather views it as a capacity they can acquire and develop by experimenting with using their knowledge in different contexts or formal education which provides learners with opportunities to do so.

Although Holec’s definition is still viewed as a useful definition by many educationalists, some of them find it incomplete in some aspects. For instance, some criticise it for being unclear about what ‘taking charge of one’s learning’ exactly means or involves (Khalil, 2013). These criticisms led scholars to develop other definitions of autonomy. Little (1991) argued that although Holec emphasized the decision-making abilities of the learner, he did not make explicit the cognitive capacities that affect the development of autonomy. Accordingly, Little (1991) defined autonomy as:

> a capacity – for detachment, critical reflection, decision-making and independent action. It presupposes, but also entails, that the learner will develop a particular kind of psychological relation to the process and content of his learning. The capacity for autonomy will be displayed both in the way the learner learns and in the way he or she transfers what has been learned to wider contexts. (p. 4)

Little's definition does not contradict with but rather completes Holec's definition in that Little describes autonomy as a capacity to take control over the cognitive aspects of the management of learning. Besides, he involves a psychological aspect, which many definitions of autonomy lack.

Benson (2001), who defines autonomy as "the capacity to take control of one's own learning" (p. 47), argues that in addition to the two aspects of autonomy covered by Holec's and Little's definitions, a third element needs to be emphasized: control over learning content. Accordingly, he proposes that autonomy involves control over three levels of teaching and learning: learning management, cognitive processes and the content of learning.

Similar to the previous definitions, Benson's definition has also been criticised by some educationalists who argue that it fails to clearly explain what is exactly meant by control or where the capacity for autonomy comes from (Khalil, 2013).

Considering the various views and definitions offered on autonomy, Sinclair (2000, as cited in Khalil, 2013) states that the field is in need of a realistic definition. Accordingly, she created a list that involves thirteen aspects of autonomy in an attempt to gather the different aspects of the notion in relation to language education:

1. Autonomy is a construct of capacity.
2. Autonomy involves a willingness on the part of the learner to take responsibility for their own learning.
3. The capacity and willingness of learners to take such responsibility is not necessarily innate.
4. Complete autonomy is an idealistic goal.
5. There are degrees of autonomy.
6. The degrees of autonomy are unstable and variable.
7. Autonomy is not simply a matter of placing learners in situations where they have to be independent.
8. Developing autonomy requires conscious awareness of the learning process.
    - i.e. conscious reflection and decision-making; social and cultural awareness
9. Promoting autonomy is not simply a matter of teaching strategies.
10. Autonomy can take place both inside and outside the classroom.
11. Autonomy has a social as well as an individual dimension.
12. The promotion of autonomy has a political as well as psychological dimension.
13. Autonomy is interpreted differently by different cultures. (Sinclair, 2000, as cited in Khalil, 2013, p. 12)

2.1.3 Misconceptions about learner autonomy

Little (1990) argues that most of the hostility towards autonomy is caused by the misconceptions and false assumptions related to autonomy, and in an attempt to respond to those assumptions, he explains what autonomy is not:

1. Autonomy is not a synonym for self-instruction; in other words, autonomy is not limited to learning without a teacher.
2. In the classroom context, autonomy does not entail an abdication of responsibility on the part of the teacher; it is not a matter of letting the learners get on with things as best they can.
3. On the other hand, autonomy is not something that teachers do to learners; that is, it is not another teaching method.
4. Autonomy is not a single, easily described behaviour.
5. Autonomy is not a steady state achieved by learners. (p. 7)

Similarly, Benson (2001) underlines the fact that most discussions on autonomy are characterised by misconceptions about the idea, and he lists some of the most common ones. The first misconception he highlights is that autonomy is often viewed as learning in isolation or without a teacher outside the classroom, which makes its relation to language education vague. Another misconception he mentions is that autonomy is often thought to involve the practice of certain skills and behaviours and certain ways of organising the learning process.

Although there have been various approaches to define autonomy, the common point scholars mostly agree on is the fact that autonomy involves taking responsibility for and having control on the learning process.

2.1.4 Characteristics of autonomous learners

In addition to defining what autonomy is, it is useful to define who an autonomous learner is to be able to get a full understanding of the concept of autonomy. Considering that, many authors have defined autonomous learners mostly by listing their characteristics.

One of earliest of those lists was proposed by Candy (1991), who suggests that autonomous learners are methodical, disciplined, logical, analytical, reflective, self-aware, curious, flexible, persistent, responsible, venturesome, creative, independent

and self-sufficient. In addition, he believes that they are confident and have a positive concept of themselves in their minds, develop skills to seek and recall information, have knowledge and skills related to their learning experiences, and have their own criteria for evaluation.

Dickinson (1993) defines autonomous learners simply as learners who are aware of what is going on in the class. They also determine their learning objectives, effectively choose and apply learning strategies, and monitor and evaluate their learning. Considering these characteristics suggested by Dickinson, it can be said that autonomous learners are actively involved in the overall learning process.

Breen and Mann (1997) elaborate on the description of autonomous language learners by adding several other features to the description. They state that autonomous language learners:

- see their relationship to what is to be learned, to how they will learn and to the resources available as one in which they are in charge or in control;
- are in an authentic relationship to the language they are learning and have a genuine desire to learn that particular language;
- have a robust sense of self that is unlikely to be undermined by any actual or assumed negative assessment of themselves or their work;
- are able to step back from what they are doing and reflect upon it in order to make decisions about what they next need to do and experience;
- are alert to change and able to change in an adaptable, resourceful and opportunistic way;
- have a capacity to learn that is independent of the educational processes in which they are engaged;
- are able to make use of the environment they find themselves in strategically;
- are able to negotiate between the strategic meeting of their own needs and responding to the needs and desires of other group members. (p.134)

Dam (1990) aimed to make a practical description of autonomous learners based on data from classroom practice. She stated that an autonomous learner "chooses aims and purposes and sets goals; chooses materials, methods and tasks; exercises choices and purpose in organising and carrying out the chosen tasks; and chooses criteria for evaluation" (p. 18).

By considering these definitions and lists on the features of autonomous learners, it is possible to conclude that an autonomous learner takes responsibility for his/her learning and is able to effectively control the learning process.

2.1.5 Key components of learner autonomy

The previous sections indicated that there have been various accounts on the definitions of learner autonomy and lists of characteristics of autonomous learners as researchers view autonomy from different perspectives and may emphasise different aspects related to it. However, a review of those definitions and lists suggests that there are certain components that are included and emphasises in many accounts. Revealing these key elements may be helpful in gaining an understanding of autonomy that would be accepted by many scholars; therefore, the present section attempts to list these key features of the concept of learner autonomy.

Learner choice. According to Murray (1999), autonomous learning is a process in which learners make choices or decisions over their learning, and in this way, they take the control and responsibility of the learning process. Therefore, teachers who support learner autonomy usually provide learners with choice (Katz & Assor, 2007). This is also motivated by taking learners' needs and learning styles into consideration. Learners must be provided with opportunities to select learning materials, activities and strategies based on their individual preferences and needs as this practice supplies them with confidence and competence to express themselves freely in the learning process (Hasan, 2011). Similarly, encouraging learners to make choices enables them to discover their learning styles and strategies, which could improve their abilities to transfer those strategies to other learning contexts out of the classroom as well as increasing their intrinsic motivation (Young, 2005). Likewise, Dörnyei (2001) recommends providing learners with choice in different aspects of the learning processes in order to offer them genuine control, promote collaboration among peers and for self-evaluation.

Motivation. Since both motivation and learner autonomy are related to the active participation of the learner in the learning process, they have been frequently

associated with each other (Reinders, 2010). Autonomous learning often involves genuine motivation and willingness to learn (Sinclair, 2000), and Sharp, Pocklington and Weindling (2002) argue that specifically intrinsic motivation is a major element of learner autonomy. They state that autonomous learners are motivated by factors that have personal importance to them rather than external factors such as rewards or threats. They suggest that, through intrinsic motivation, autonomous learners are able to remain genuinely self-motivated by acting beyond the immediate circumstances. On the other hand, Raby (2007) states that, in addition to intrinsic motivation, external factors such as the teacher, the learning context, activities and materials may affect learner motivation and may determine whether learners develop intrinsic motivation or not.

Responsibility. Autonomy and responsibility are closely related as many definitions of learner autonomy include the aspect of taking responsibility for one's own learning (Cotterall, 2000). Autonomous learners are likely to create their own learning schedules and practise the planning, pacing and monitoring of their learning based on these schedules. They also take an active part in setting their learning goals, determining the learning content and evaluating their progress (Benson, 2006b). This also entails a shift in the responsibilities and roles of the teachers in the learning process. The transfer of responsibility of learning to the learners implies that learning contexts and teachers are required to encourage learners to set their own learning goals, make decisions in the learning process and reflect on their learning performance (Cotterall, 2000).

Monitoring and self-evaluation. Dickinson (1993) states that monitoring and evaluating the learning progress is an essential component of learner autonomy. Scharle and Szabo (2000) suggest that when educators help learners to focus on the learning process instead of only on the learning output, they assist them in consciously exploring their learning performance and the contributions to their learning. They explain that, in this way, teachers can promote the development of responsibility in learners over their learning. When practicing self-evaluation, learners need to take the role of the teacher, and by doing so, they get the opportunity to understand their

proficiency level, strengths and weaknesses (Breen & Mann, 1997; Scharle & Szabo, 2000).

Interdependence and social interaction. Little (2000) emphasises the social-interactive aspect of learner autonomy in FLE by acknowledging Vygotsky's (1978) concept of zone of proximal development. He argues that although learner autonomy can imply independent problem solving, it is essentially facilitated through guidance by or collaboration with peers and the teacher. Therefore, autonomous learning could be promoted in FLE classrooms by creating collaborative activities for learners (Hasan, 2011). Likewise, Little and Dam (1998) state that although independence is closely related to autonomy, the independence learners practise through autonomous behaviour is controlled and supported by their interdependence. According to them, this entails a learning context in which learners and the teacher cooperate and collaborate effectively.

Out-of-class learning. Learner autonomy is not restricted to the learning inside the classroom, but on the contrary, enables learners to continue their education outside the class on their own (Benson, 2006b). Field (2007) emphasises the importance of learning outside the classroom by explaining that it is the key factor leading to true learner empowerment. In the context of learner autonomy, research revealed that autonomous learners actively seek opportunities for learning outside the classroom rather than restricting themselves to learning in the class with teacher control (Gao, 2008). Sharp, Pocklington and Weindling (2002) demonstrated that learners who participated in out-of-class learning activities improved their metacognitive strategies and had high intrinsic motivation, which implied learner autonomy. Therefore, it is suggested by research that teachers who aim to foster learner autonomy in their teaching need to assist learners in developing strategies to continue their learning outside the classroom, in other words, beyond the formal teaching and learning context (Benson, 2006b).

2.1.6 The importance of learner autonomy in EFL

A large body of literature advocates the idea that fostering autonomy in language education is important and necessary. Dam (1995) states that in her own classroom experience as a language teacher, she has observed that when involving students in decision-making procedures related to choosing learning materials and activities resulted in more effective learning. Therefore, Dam (1995) suggests that increasing learner involvement in decision-making in learning can increase the effectiveness and success of learning. Similarly, Opalka (2001, as cited in Balçıkanlı, 2006) states that fostering autonomy is beneficial for learners because in this way they can get more involved in the learning process and can develop their learning strategies. Benson (2001) states that "autonomous learning is more effective than non-autonomous learning. In other words, the development of autonomy implies better language learning" (p. 2). He explains that the background of the concept of autonomy coming from educational, psychological and philosophical thought and particularly research findings in the field of psychology of learning give a strong account for this assumption. Jiao (2005) suggests that autonomous language learners are able to create and make effective use of opportunities to communicate in the target language, even in non-native environments. She explains that learner autonomy is a way to shape the learning according to individual needs and learners can acquire the skill of independent thinking by making use of autonomy. Finally, Üstünoğlu (2009) believes that promoting autonomy leads to enhanced learner performance and achievement by assisting in increasing motivation and self-esteem in learners.

2.1.7 Fostering learner autonomy in EFL

The views that advocate learner autonomy and point out its benefits for language learning have naturally led scholars to explore and suggest methods on how learner autonomy can be fostered in language education. Benson (2001) suggests that because autonomy as a capacity for control in learning has many different dimensions and can be exercised in different forms, there is not a single approach to fostering autonomy. Since there is no particular way to foster autonomy, how to evaluate the appropriateness and effectiveness of the practices that claim to do that gains

significance. For that concern, Benson (2001) proposes asking two key questions about the practice. The first one is "How does this practice help learners take greater control over their learning?" and the second one is "How does the practice improve language learning?" (p. 111)

There are a number of accounts on ways to foster learner autonomy in the literature (e.g. Cotterall, 1995; Dam, 2011; Little, 1991, 2001; Littlewood, 1997; Nunan, 1997). A number of approaches have been suggested such as learner training (Esch, 1997), strategy training (Cohen, 1999), self-access and language advising (Reinders, 2010). Application of certain tools have also been proposed such as the European Language Portfolio (ELP) to encourage learner involvement in assessment (Little, 2009), logbooks to assist learners to keep track of their learning goals and performance (Dam, 2009), and technological tools to give learners access to learning resources (Reinders, 2010). Dickinson (1992, as cited in Balçıkanlı, 2006) proposes six ways teachers can enhance learner independence:

- legitimizing independence in learning by showing that we, as teachers, approve of it, and by encouraging the students to be more independent;
- convincing learners that they are capable of greater independence in learning -giving them successful experiences of independent learning;
- giving learners opportunities to exercise their independence;
- helping learners to develop learning strategies so that they can exercise their independence;
- helping learners to become more aware of language as a system so that they can understand many of the learning techniques available and learn sufficient grammar to understand simple reference books;
- sharing with learners something of what we know about language learning so that they have a greater awareness of what to expect from the language learning task and how they should react to problems that erect barriers to learning. (p. 50)

Benson (2001) explains that in language education, there are certain practices that have been associated with autonomy, and he lists those practices in six categories:

- Resource-based approaches emphasize independent interaction with learning materials.
- Technology-based approaches emphasize independent interaction with educational technologies.
- Learner-based approaches emphasize the direct production of behavioural and psychological changes in the learner.

- Classroom-based approaches emphasize learner control over the planning and evaluation of classroom learning.
- Curriculum-based approaches extend the idea of learner control to the curriculum as a whole.
- Teacher-based approaches emphasize the role of the teacher and teacher education in the practice of fostering autonomy among learners. (Benson, 2001, p. 111)

All the different accounts listed above suggest the usefulness of Benson's (2001) view which claims that fostering autonomy does not manifest itself in a single way and can be practised in many forms depending on the specific learning context and the needs of the learners. Focusing on fostering autonomy through the use of technology, the present study draws on the views on Benson (2001), who lists technology-based approaches as one of the main categories of practices identified with autonomy and its promotion in language education.

2.2 Computer-assisted language learning

The use of technology in education has often been associated with autonomy (Chik, 2017). Even before the era of Web 2.0 when technology users had limited opportunities to managing the content on the Internet, the potential of educational technology to promote learner autonomy was pointed out (Chik, 2017). An early association was made by Motteram (1997, as cited in Benson, 2001) who stated "There has always been a perceived relationship between educational technology and learner autonomy. This is taking educational technology in its broadest sense and taking learner autonomy as the superordinate term. This has become increasingly true for computers and self-access" (p. 136). Similarly, Cotterall (1998) and Shetzer and Warschauer (2000) referred to technology as a critical dimension in implementing learner autonomy at times when educational technology was limited in use compared to today.

Currently, most research and practice in regard to educational technology in the field focuses on CALL, which involves the use of computers and the Internet in language education. In an early definition, CALL was defined as "the search for and study of applications of the computer in language teaching and learning" (Levy, 1997, p. 1). At the time this definition was made, computers were not part of the everyday life and

computer use in language learning was limited (Chik, 2017). The changes in technology later created new relationships between language learning and computer, and Egbert (2005) reflected this change in his definition of CALL, which states that CALL is "using computers to support language teaching and learning in some way" (p. 1). This was still a comparatively early definition in which the centre of CALL was viewed to be the computer. In a more recent definition, Beatty (2010) defined CALL as "any process in which a learner uses a computer and, as a result, improves his or her language" (p. 7). This definition shifts the learning initiative from the teacher to the learner and implies that as a part of daily use of technology, language learning could be incidental (Chik, 2017).

The history of CALL can be viewed in relation to the invention of the Internet in two main periods: before and after the Internet. According to Warschauer and Healey (1998), the history of CALL before the Internet can be divided into three phases: behaviouristic, communicative and integrative.

The behaviouristic phase, which covers the period between 1960s and 1970s, involved the use of more mechanical applications that drilled and tested knowledge of grammatical structures and vocabulary mostly through multiple-choice exercises or by comparing learner input to pre-programmed answers. In regard to supporting autonomy, it can be said that these programs gave learners some control over their learning by offering them choice over the ways of practice and testing and by making them control the learning pace. On the other hand, they did not offer much support for autonomy in the aspect that they were based on the behaviouristic view of language learning as habit formation and involved the use of computer in the role of a tutor.

In the 1980s, CALL gained a more communicative nature under the influence of communicative language teaching. Problem-solving activities were designed to encourage cognitive involvement in the language and increased spoken communication with other learners. The commonly used applications were games, simulation packages and text reconstruction. Even though these applications offered some degree of control to learners in problem-solving tasks, they were similar to the

behaviouristic CALL applications in that they used the computer as the tutor and had pre-programmed solutions to the problems.

The integrative phase of CALL involved the use of multimedia, hypermedia and interactive technologies, which were mostly available on CD-ROM. These technologies had the potential to support learner autonomy by providing learners with rich input, making use of different kinds of media and by presenting branching options. However, they still lacked the features to respond to creative learner input and to offer genuine control to the learner.

The use of the Internet provided a way forward for integrative CALL since it did not have the limitations of the CD-ROM. It meant that CALL has entered a new era as the Internet provides learners with various facilities, enables them to have access to information and resources to communicate and to share input (Chik, 2017). Furthermore, many learners have positive overall perceptions on the use of CALL (Mokhtari, 2013).

2.2.1 Benefits of CALL in relation to learner autonomy

There are many ways in which CALL can foster and support autonomous learning in FLE (Hashemi & Aziznezhad, 2011). Overall, the implementation of CALL can provide learners with more control over their learning by enabling them to construct meaning and evaluate their learning performance (Rahimi & Bigdeli, 2013; Smith, 2004). Ebrahimi, Eskandari, and Rahimi (2013) revealed that a technology-enhanced language learning context led to more efficient, learner-centred and facilitative instruction. The studies by Arıkan and Bakla (2011) and Jarvis (2012) also confirmed the affordances of CALL for learner autonomy.

A major advantage of CALL for autonomous learning is in terms of access to learning input and resources (Reinders & Hubbard, 2013). Technology has provided learners with ubiquitous access to a potentially unlimited range of resources. This means that even the learners in underprivileged environments can access materials and are less dependent on scarce teacher support. What is more, it enables both teachers and learners to easily store and retrieve materials as well as learning records. In this way,

learners can not only access resources easily but also keep track of their usage of those resources.

Technology also provides learners with access to authentic content and resources and enhances the authenticity of the language practice (Chan & Chan, 2011; Cheng, Paré, Collimore & Joordens, 2011). The importance of providing learners with access to authentic materials has often been emphasized in discussions about the development of learner autonomy (Benson, 2001). Having access to authentic materials means that learners can use real-world materials that are related to their individual preferences and interests.

Through CALL, learners can be encouraged to make more choices in the learning process, which is a key component in learner autonomy (Yuan & Kim, 2017). By offering a large number of alternatives to the learners in terms of learning content, activities, resources as well as how to learn, technology could improve the abilities of learners to control their learning through making active decisions. Collentine (2011) and Rankin and Edwards (2017) also emphasise the importance of learner choice in CALL activities.

Autonomy also facilitates communication and interaction in language learning (Lee, 2016). Many autonomy researchers underline the importance of giving learners various opportunities to use the target language, particularly outside the classroom (Benson, 2001). Computer-mediated communication via tools such as e-mail, chat applications and social networking sites enable learners to interact with other learners, native speakers and instructors (Rahimi & Bigdeli, 2013). Tutorial programs that provide learners with feedback on their language output also offer interactivity (Reinders & Hubbard, 2013).

Another benefit of technology is its' potential for situated learning (Hung, 2002). Situated learning is a significant concept in language learning as it can facilitate reducing the boundaries between the classroom and the target language settings (Hung, 2002). Technology can facilitate situated learning by, for instance, providing learners with access to tools and connection with teachers and other learners when they need

support in target language contexts. By getting involved in situated-learning contexts, learners can gain more control and responsibility in the learning process. When it is considered that a large part of daily communication is moving into digital environments including the professional and business interactions, it is increasingly becoming an advantage and a necessity for learners to integrate these situations into their learning.

In relation to the learning process, technology presents new types of activities such as Web quests, microblogging and the use of social networking sites in addition to the activities that have been traditionally used in language education, These activities give learners opportunities for practicing the language in an interactive way by using authentic materials without constant teacher intervention (Lee, 2016). According to Darasawang and Reinders (2010), technology-based language learning environments could also provide learners with more responsibility for their learning and increase their intrinsic motivation levels.

Technology also promotes learner autonomy in terms of encouraging learners to reflect on their learning, which is a key part in autonomous learning (Kim, 2014; Smith, 2004). Kim (2014) revealed that self-study resources for speaking practice assisted learners to monitor their progress and led them to reflect more on their learning. To illustrate, electronic portfolios are popular tools that help learners to monitor their progress and make decisions about the learning process. Furthermore, with the help of technology, learners can get feedback on their language use immediately and in a personalized way. Natural language processing applications are one example of this, and they can help students to depend less on the teacher. In addition, technology allows for the delivery of feedback in different ways such as by using auditory, textual or visual tools (Reinders & Hubbard, 2013).

To sum up, all the benefits discussed above suggest that CALL can help students take control over their learning and empower them in the learning process. At a practical level, CALL helps students control the learning process by giving them access to materials in a flexible way whenever and wherever they need it, with varying degrees of support depending on the learners' preference. By allowing them to make choices

on the learning content, connect with other learners and monitor their performance, CALL has the potential to encourage learners to be more active, more reflective, more critical and more responsible for their own learning.

2.2.2 The use of Web 2.0 tools in EFL

The term Web 2.0 was coined by O'Reilly (2007), who defined it as a platform where all users can create and change content. In this respect, Web 2.0 changed the passive role of the users in Web 1.0 into a more active one. Web 2.0 technologies, which include blogs, wikis, social networking sites and podcasts among others, enable users to communicate, create and share materials, and edit and contribute to each other's work (Annamalai, 2019). O'Reilly (2007) listed the characteristics of Web 2.0 as following:

> - services, not packaged software, with cost-effective scalability,
> - control over unique, hard-to-recreate data source that get richer as more people use,
> - trusting users as co-developers,
> - harnessing collective intelligence,
> - leveraging the long tail through customer self-service,
> - software above the level of a single device,
> - lightweight user interfaces, development models, and business models. (p.36-37)

García-Martín and García-Sánchez (2013) categorise Web 2.0 tools into two groups: social and emotional applications and instrumental applications. According to this categorisation, social and emotional applications focus on social relationships and are usually used spontaneously such as social networking platforms while instrumental applications are used for specific purposes and may require additional skills.

The emergence of Web 2.0 tools changed the view of technology use in FLE as they did in all parts of daily life. Whereas Web 1.0 provided resources and means for communication for FLE such as materials provided by text book publishers through a website or software, Web 2.0 supplies new learning environments which can be adapted according to the needs of learners and enable them to be active participants in the learning process (Harris & Rea, 2009). Web 2.0 technologies can provide platforms where instructors can actively facilitate learning and offer motivating and effective learning opportunities (Amzaourou & Oubaha, 2018). Similarly, Parmaxi and

Zaphiris (2017) suggest that Web 2.0 can be utilised for more effective language learning when it is supported by sound theoretical and pedagogical alignment.

One of the most commonly used Web 2.0 tools, blogs can enhance knowledge construction and support cognitive development (Noel, 2015). They offer a learner-centred platform for language learning and support communication skills (Kuimova & Zvekov, 2016). Furthermore, they encourage reflection on learning as they demonstrate the progress in learning over time (Al Waely & Aburezaq, 2013). Finally, they enable authors to write for a global audience (Hung & Huang, 2015).

Another widespread Web 2.0 tool, social networking platforms have several affordances for language learners. As platforms that enable learners to interact with each other and with other speakers, they encourage communication and collaboration (Annamalai, 2017) as well as improve learners' writing skills (Annamalai & Tan, 2014). On social networking platforms, learners can enhance their capacities and performances and gain new knowledge as they create and edit new content (Tinmaz, 2012). In addition, the use of these platforms are widely favoured by foreign language learners (Eren, 2012).

The positive effects of Web 2.0 technologies on language learning were confirmed by many empirical studies. Moya (2015) revealed that using blogs improved the oral communication skills of the learners who were weak in this area beforehand. Somdee and Suppasetseree (2013) demonstrated that the implementation of digital storytelling enhanced the motivation levels of the learners to practice speaking as well as their knowledge of the target language. Parmaxi and Zaphiris (2016) report that the use of Web 2.0 tools can help to improve a variety of capacities such as collaborative learning and intercultural awareness when they are used within a suitable theoretical framework.

The assets of Web 2.0 technologies for autonomous learning have also been a research inquiry, and many studies emphasised its benefits in this respect. Gonzalez and Louis (2008) state that Web 2.0 tools can foster learner autonomy by providing learners with control over the content and pace of their learning, which improves their sense of responsibility and motivation in learning. Similarly, Parmaxi and Zaphiris (2016) argue that Web 2.0 tools promote learner autonomy as long as they are implemented

in an appropriate theoretical framework. According to Jee (2011), many learners feel more comfortable while learning with Web 2.0 technologies compared to studying in traditional classrooms. This greater feeling of comfort as well as the opportunity to use the Web 2.0 tools according to their own learning goals and needs in an unlimited way can enhance the autonomous learning capacities of the learners.

In a nutshell, Web 2.0 technologies are relatively recent tools that have influenced the implementation of technology-enhanced instruction in FLE as they offer numerous assets for foreign language learning and for the development of learner autonomy.

2.3 Recent studies on learner autonomy in EFL

2.3.1 Recent international studies on learner autonomy in EFL

A large number of studies have been conducted to investigate learner autonomy in foreign language education. These studies have focused on different aspects of learner autonomy, and they have been carried out in various contexts.

Many studies investigated learners' autonomy levels or their perceptions towards learner autonomy (e.g. Ikonen, 2013, Shahsavari, 2014; Tayjasanant & Suraratdecha, 2016; Xu, 2015). Some of them focused on the relationship between learner autonomy and other variables such as foreign language achievement, strategy use, or willingness to communicate (e.g. Liu, 2007; Mohammadi & Mahdivand, 2019).

A group of studies explored teacher perceptions on learner autonomy and the practices and activities teachers involve in their classes to promote learner autonomy. These studies mainly explored teachers' views on the necessity, desirability and feasibility of learner autonomy as well as their practices, and they mostly used questionnaires, interviews and classroom observations as data collection tools. Some recent examples of these studies are Hasan (2011), Borg and Al-Busaidi (2012), Al-Busaidi and Al-Maamari (2014), Shahsavari (2014), Salimi and Ansari (2015), Tayjasanant and Suraratdecha (2016), and Darsih (2018). Despite the various results they obtained, there are some findings that commonly emerged from these studies. Many of them revealed that although teachers thought that autonomy could help learners learn more

effectively and that many of them reported to involve some practices and activities to promote learner autonomy in their classes, it is not always feasible to foster and practise autonomy because of various factors that hinder autonomy development such as curriculum demands, the limitations of the educational systems, socio-cultural barriers and learners' reluctance.

Finally, since both theory and related empirical findings highlight the importance of learner autonomy for effective learning, many researchers explored ways to foster learner autonomy (e.g. Humphreys & Wyatt, 2014; Liu & Qi, 2017; Ramirez, 2017). Some of these studies investigated the use of a specific tool or technique. The examples for these include investigating the use of portfolios (e.g. Chauhan, 2013), a learner-autonomous syllabus (e.g. Jamil, 2010), self-assessment (e.g. Gholami, 2016; Robison, 2016), training on higher order thinking strategies (e.g. Teimourtash & YazdaniMoghaddam, 2017), one-to-one learner consultation (e.g. Oh, 2002), and learning diaries (e.g. Porto, 2007).

2.3.1.1 Recent international studies on the effects of technology on learner autonomy in EFL

Among the research on ways to foster learner autonomy, a number of studies explored the use of technology for that purpose. Most of these were studies that investigated the differences in autonomy levels before and after an implementation that involved the use of technology in various forms. To begin with, Kim (2014) investigated the use of digital storytelling in an autonomous learning context that involved the use of online self-study resources, an online recording program and a speech-to-text program as well as instructor feedback. The participants of the study were five high intermediate and advanced level adult ESL learners in the USA. They were asked to record stories on weekly topics outside the classroom. The data were collected through three questionnaires that assessed the participants' perceptions of autonomous learning as well as through the story-telling videos that showed the improvement in the participants' oral proficiency. According to the findings, the participants viewed the application of learner-recorded story-telling videos as a learner-centred activity that can be helpful in improving their autonomy and that it contributed to their self-

confidence levels, which is a feature that is associated with autonomy. The study also emphasizes the importance of instructor's guidance and feedback in this kind of learning activities that involve out-of-class study.

Pospíšilová (2018) explored how to enhance learner autonomy and self-assessment skills by using e-portfolios. A self-assessment cycle that was applied through the use of e-portfolios was adopted in five courses at a university in Czech Republic, and the participants were 40 adult students from those courses. The participants were guided to create an e-portfolio which included several stages of self-assessment and goal setting which were followed by taking standardised tests. Following those stages, the participants were required to add samples of evidence to their e-portfolios to prove that they were studying to reach their goals. The data collection tools were the evidence files created by learners, the results from language proficiency tests and in-depth interviews. The findings revealed that the proposed self-assessment model helped students to set learning goals and collect evidence about those goals as long as the goals were clear but also that the participants needed more specific training about goal setting. In addition to setting goals for themselves, the participants were reported to show an increase in behaviour that reflected autonomy based on the observations made by the researcher.

Ardi (2017) researched the promotion of learner autonomy through the use of a mobile learning platform in an academic English class. The participants were 21 students enrolled in an academic English course that adopted a blended learning method at an Indonesian higher education institution. The study, which was a qualitative case study, investigated how *Schoology*, a mobile social networking learning management system, affected the participants' exercise of autonomous learning. The data were collected through the online records and analytics available on the platform about student activity including students' posts and comments, discussions, shared materials as well as learner reflections about the use of the platform and their learning processes. The results showed that the platform helped learners to engage in autonomous learning by leading them to control the management of their learning, the cognitive processes involved in learning and the selection of learning materials by facilitating interaction

among learners, by enabling learners to study at their own pace whenever and wherever they wished and by providing learners with media-rich materials.

Albadry (2018) examined the use of mobile technology to foster learner autonomy in an EFL course. The context of the study was a 12-week course which included the use of *iPad* devices by a group of 21 Saudi university students in both in-class and out-of-class teacher-guided activities. The data were gathered through questionnaires, focus group interviews, student diaries, think-aloud protocols and an online tracker. The results of the study showed that the participants used a wide range of cognitive, metacognitive and social strategies when working with the *iPad* and that there was an increase in the participants' reported use of language learning strategies by the end of the project. Therefore, the results suggest that the integration of *iPad* devices into language education can have positive effects on learners' autonomy development.

2.3.2 Recent studies on learner autonomy in EFL in Turkey

As in the international context, a large number of studies have been conducted in the context of Turkey on learner autonomy in English language education. These studies can be categorised in a similar way to the international ones in terms of their focus. Firstly, many studies focused on learner perceptions on learner autonomy or learners' autonomy levels such as the studies of Yıldırım (2005), Baylan (2007), Dokuz (2009), Tursun (2010), Barlas (2012), Yapıörer (2013) and Ünal (2015). A common finding from many of these studies was that Turkish EFL learners were autonomous to some extent. That is, although they accepted responsibility in certain parts of their learning, they needed support and guidance in many aspects of their learning and were mostly ready to accept teacher authority and direction.

A group of studies examined the relationship of learner autonomy to other variables such as foreign language achievement (e.g. Bayat, 2007; Rezalou, 2014; Ünlü & Er, 2016), culture of learning (e.g. Karabıyık, 2008), strategy use (e.g. Alyas, 2011; Gökgöz, 2008), language engagement (e.g. Akbaş, 2011), psychological well-being (e.g. Dişlen, 2010), academic and social variables (İmre, 2015) and the use of self-access centers (e.g. Nasöz, 2015).

The studies that were conducted in Turkey on teacher perceptions and practices obtained similar findings to those of international studies (e.g. Baylan, 2007; Baz, Balçıkanlı & Cephe, 2018; Doğan & Mirici, 2017; Durmuş, 2006; Eren, 2015; Khalil, 2013; Sabancı, 2007; Tursun, 2010; Ünal, 2015; Ürün, 2013). The teachers in Turkey mostly expressed their willingness to promote learner autonomy, but they also reported challenges and limitations, and their needs for support and guidance in promoting it in practice. Baz, Balçıkanlı and Cephe (2018) suggested that teachers' limited attempts to promote learner autonomy could be related to their stories as learners such as not having enough opportunities for autonomous learning as learners. Based on the findings, Sabancı (2007) and Khalil (2013) propose providing teachers with in-service training on learner autonomy, offering them flexibility in teaching and making adjustments in the curricula of schools so that they cover learner autonomy more effectively. Similarly, Balçıkanlı (2010) found that although ELT student-teachers had positive views on the adoption of learner autonomy principles, they had some concerns about their practical application. Therefore, Balçıkanlı (2010) recommends teacher-educators to involve more activities that promote autonomous learning in the education of ELT students. Considering the findings of the studies on teacher perceptions and practices and the suggestions made by researchers to solve the current problems, it can be said that the present study can contribute to the current situation by presenting a way of practice that teachers can benefit from to promote learner autonomy in classes. That is, it can contribute to showing teachers that learner autonomy is not only desirable and necessary but also feasible to apply in practice.

Finally, a number of studies performed in Turkey explored how to foster learner autonomy. Some of the recent examples examined the application of portfolios (e.g. Burnaz, 2011; İşler, 2005; Koyuncu, 2006; Köse, 2006; Üğüten, 2009; Yıldırım, 2013; Yılmaz, 2010), class activities (e.g. Balçıkanlı, 2006; Döndüoğlu, 2014), formative assessment (e.g. Sönmez, 2013), extensive reading (e.g. Mede, İnceçay & İnceçay, 2013) and strategy training (e.g. Ceylan, 2014; Hal, 2013; Nalkesen, 2011) with the aim of promoting learner autonomy.

2.3.2.1 Recent studies on the effects of technology on learner autonomy in EFL in Turkey

In Turkey, several studies were conducted to investigate the effects of technology on learner autonomy in EFL. Some of these studies explored the use of a learning management system or software. For example, Bitlis (2011) investigated the effects of blended learning on learner autonomy. In the study, the blended learning environment was created through the integration of a language learning software called *My English Lab* into the traditional classroom environment. The participants of the study were 36 EFL preparatory school students. The data were collected through a questionnaire, interviews, learner logs and lesson observations. The results revealed that blended learning approach helped to foster autonomous learning as the participants engaged in autonomous learning activities.

Zonturlu (2014) studied EFL learners' perceived levels of autonomy in a context where CALL was integrated into the curriculum in the form of a language learning software. The participants, who were 40 upper-intermediate level EFL preparatory school students, were given a questionnaire and interviewed. The results of the study showed that while the majority of the participants had high motivation levels and used some metacognitive strategies, they also thought that the teacher was responsible for their learning in most of the learning process and they spent limited time on out-of-class learning.

Mete (2010) revealed limited effects of a particular CALL system on learner autonomy and the potential reasons for this inefficiency. The study explored the effects of a language learning software called *DynEd*, which was being widely used in many schools in Turkey at the time the research was conducted, as reported by the researcher. The participants of the study were 874 EFL learners studying in 7^{th} and 8^{th} grades in Turkey, and the data were gathered through an autonomy determining scale constructed by the researcher. The findings revealed that *DynEd* had limited effects on fostering learner autonomy. The researcher suggests that the reasons for these findings may be the technical inconveniencies and problems the participants had in accessing and using the software, the discrepancies between the learning content on the software

and the school curriculum, and limited appeal of the software to learner interests and preferences. These findings are important as they shed light on some of the points that need to be taken into consideration while implementing CALL for autonomy development.

Similarly, Ceylan (2019) investigated the reasons why a CALL system that was in use in her institution was not being effectively used by the learners. The participants were 100 EFL preparatory school students at a state university in Turkey. As part of the preparatory school program, they were required to use a CALL system named *Quartet*, which led students to study on their own. To investigate why some learners failed to use the system in an effective way, the researcher collected data from the participants through a questionnaire. The findings indicated that though the participants accepted some responsibility for their learning, they mainly believed that the teacher was responsible for setting learning goals for learners. The researcher suggests that learners needed teacher guidance in setting goals for themselves as well as in the use of the CALL software to improve their autonomous learning. Furthermore, according to the findings of the study, a reason why students used the software ineffectively was that they did not enjoy using the particular software and did not find it useful although they reported to be willing to use computer and the Internet to study English in general. These findings and those of Mete (2010) are significant as they point to why an application of CALL can be successful or unsuccessful. Considering these, it can be said that a strength of the CALL implementation in the present study is that it involves teacher guidance and support throughout the project. In addition to providing learners with teacher support, the application of CALL in the present study focuses on giving learners choice over learning tools and materials with the aim of promoting learner autonomy through an effective use of CALL.

Among the studies conducted in Turkey, in addition to the studies that investigated the application of specific language learning software or systems, there are studies that explored the use of technology in projects designed by teachers or researchers themselves with the aim of promoting learner autonomy, similar to the present study. Mutlu (2008) explored four aspects of autonomy in a CALL context through an

experimental study design. Participants of the study were 48 intermediate-level preparatory school students, who were divided into control and experimental groups. For five weeks, the students in the experimental group were given training on language learning strategies through CALL. The data collection tools were questionnaires that were applied in the form of pre-test and post-test, semi-structured interviews, observations and e-learning diaries kept by learners. The findings revealed that the strategy-training period assisted the participants in the experimental group in improving their use of language learning strategies and improved their motivation, encouraged them to take more responsibility for their learning and pursue out-of-class activities.

Öğmen (2011) studied the effects of vocabulary learning through e-portfolios on learner autonomy and strategy development. For this purpose, the participants, who were 89 EFL learners in a high school in Turkey, were asked to keep a vocabulary learning e-portfolio for 24 weeks. The data were gathered through pre- and post-questionnaires, researcher logs and interviews. According to the results, the majority of the participants reported to have a high level of interest in the computer-based tasks involved in the project, they developed some new learning strategies, and the project contributed to the development of the autonomous learning skills of the participants.

CHAPTER 3

METHODOLOGY

3.0 Introduction

In this chapter, the research design of the study, the research setting, the participants, the experimental treatment, the data collection instruments, the procedures of data collection, and the data analysis methods are presented.

3.1 Research design

The present study, which aimed to investigate the effects of CALL on learner autonomy, was designed as a quasi-experimental study, which is a type of experimental study. Dörnyei (2007) reports that many people view the experimental study as a successful scientific method as it can identify clear cause-effect relationships. Dörnyei (2007) continues that although many studies in applied linguistics attempt to establish causal links, it is actually quite difficult to uncover such links. That is because in real life no event takes place in isolation, so it is hard to avoid or identify the interferences of various factors. Dörnyei (2007) states that the solution to this problem has been offered by the experimental research design, which he calls "a simple but ingenious methodological idea" (p. 116). He explains:

> first, take a group of learners and do something special with/to them, while measuring their progress. Then compare their results with data obtained from another group that is similar in every respect to the first group except for the fact that it did not receive the special treatment. If there is any discrepancy in the results of the two groups, these can be attributed to the only difference between them, the treatment variable. (p. 116)

Therefore, in experimental studies, some processes which are deliberately manipulated take place in a controlled setting so that all the variables except for the target ones are kept unchanged (Johnson & Christensen, 2004, as cited in Dörnyei, 2007). Although there are different forms of experimental research, in a typical experimental study,

there can be an intervention, or a treatment, and at least two groups: the 'treatment' or the 'experimental' group, which undergoes the treatment, and the control group, who is not exposed to the treatment, but provides the standard for comparison. In educational contexts, as the experimental group is exposed to the treatment, the control group continues with the standard form of instruction in the same learning setting. To measure the change, pre-evaluations before the intervention and post-evaluations after the intervention are applied to both groups, and the results are compared (Dörnyei, 2007).

In experimental studies, in order to make the control group as similar to the experimental group as possible, researchers are suggested to assign the participants randomly to the two groups (Creswell, 2009; Dörnyei; 2007). However, as Dörnyei (2007) points out, this is not always possible in real life for practical reasons, which may require the use of a quasi-experimental design:

> In most educational settings, random assignment of students by the researcher is rarely possible and therefore researchers often have to resort to a 'quasi-experimental design'. Quasi-experiments are similar to true experiments in every respect except that they do not use random assignment to create the comparisons from which treatment-caused change is inferred. (p. 117)

In other words, quasi-experimental studies make use of groups which are already formed instead of assigning the participants randomly to experimental and control groups. It is an accepted research methodology as long as the studies are designed by taking the initial group differences into consideration and dealing with them (Dörnyei, 2007).

In the present study, to explore the effects of CALL on learner autonomy, a quasi-experimental design was employed. Figure 3.1 illustrates an overview of the study design. The participants of the study were 50 EFL learners studying in four different classes in the preparatory school of a Turkish state university. They were divided into two groups: There were 25 participants in the experimental group and 25 participants in the control group, as demonstrated in Figure 3.1. The experimental group received a CALL intervention, the experimental treatment, for seven weeks, which involved in-class sessions about CALL tools, using the tools for their out-of-class studies and

completing reflection forms weekly in addition to their preparatory school instruction. In the meantime, the control group continued with the standard education in the preparatory school. To compare the change in the perceptions of the students on their autonomy levels, both groups were given a questionnaire before and after the treatment period. In addition to the application of the questionnaire, nine participants from the experimental group were interviewed to explore their perceptions on the CALL intervention. Before conducting these data collection and experimental treatment stages, the approval of Middle East Technical University Human Subjects Ethics Committee was received to carry out the study (Appendix A). Similarly, the permission of the administration of the preparatory school which was the context of the study was obtained.

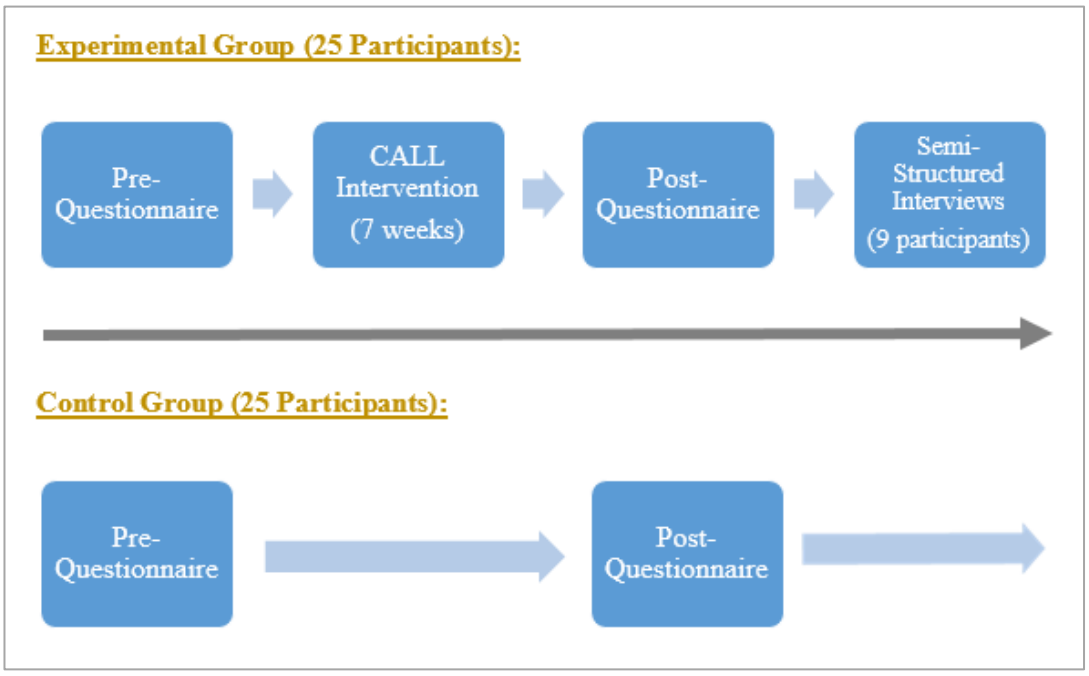

Figure 3.1 Data collection procedure.

3.2 Research context

The study was conducted in the preparatory school of a state university in Ankara, Turkey. The school was chosen because of its convenience for the researcher as the researcher was working as an instructor there during the study.

The university where the study was conducted is one of the oldest universities in Turkey. As many other universities in the country, it has one year of English preparatory class. The students who enrol for a department at the faculties of engineering, administration, medicine, or the departments of English Language Teaching (ELT), or English Language and Literature (ELL) have to meet the English language requirements of the university before they start their studies in their departments. Each year, its preparatory school provides language instruction for more than one thousand students. At the beginning of each academic year, the school of foreign languages conducts an English proficiency exam. The students who pass the proficiency exam can begin their studies at their departments. The students who fail the exam have to study in the preparatory class for one year.

For the departments of ELT and ELL, which the participants of the present study were enrolled in, the preparatory school program offered by the university is different from the general English program offered for the other departments. The proficiency exam for these departments consists of two stages. At the first stage, students take a paper-based exam that includes listening, reading, and use of language questions. Students who pass the first stage take the second stage of the exam procedure, which includes a writing and a speaking section. Students who pass the second stage can begin their studies at their departments while students who fail the exam are placed in preparatory school classes that include only the students from the ELT and ELL departments.

A school year is consisted of two semesters, each of which involves 16 weeks of education, and there are 24 hours of English instruction a week. The students attend classes five days a week from Monday to Friday. Each class is taught by two different instructors who are assigned randomly to classes at the beginning of each semester. The classes consist of 11 to 16 students. Each of the classes in the school is mixed in

terms of students' English proficiency levels. That is, each class is balanced in having students that have got high or low marks in the proficiency exam. During the semester when the present study was carried out, there were 8 classes in the ELT-ELL group of the school.

The English preparatory school instruction for the ELT and ELL departments starts at the intermediate level, and the program aims to bring students to upper-intermediate level in English at the end of the school year. The students are taught general and academic English. The language skills are taught in an integrated way in lessons. The school aims to give the same language instruction in a standard way to all the classes, therefore, all the classes in the same program have the same curriculum. Accordingly, the instructors in the school have to follow the weekly program planned by the Program and Material Development Unit. In this program, the learning content and materials are determined for each day of the week beforehand, and the instructors are responsible for completing the program for each day. The program uses a well-known course book. In addition to the course book, a listening and speaking book is used weekly in lessons as well as a writing book. Furthermore, additional materials are provided by the Program and Material Development Unit to be used in the lessons by the instructors.

In the first semester, in which the present study was conducted, the instruction focuses on general and academic English. In the second term, in addition to general and academic English, students also take English for Specific Purposes (ESP) classes in which instructional materials such as listening and reading texts that include themes and terminology related to their faculties are covered with the aim of familiarizing students with the basic concepts from their fields of study.

As the same curriculum is followed in all classes, the lessons follow the same structure in school. In the ELT-ELL program, the lessons are mostly based on the main course book, which is used on almost all class days. The additional listening and speaking book and writing book are used on certain days of the week, which are determined by the Program and Material Development Unit. The main course book teaches the four skills and the sub-skills of English in an integrated way. These lessons involve the

practice of these skills based on the exercises and activities provided by the course book. The exercises are usually typical language course book exercises such as reading and listening comprehension activities, grammar and vocabulary practice, and pair and group work activities for speaking practice. In writing lessons, the students are taught basic paragraph and essay structures and types of paragraphs and essays in addition to other functional writing types such as e-mail writing. The skills are practiced in a communicative way, but the lessons also involve explicit instruction on grammar and vocabulary. The lessons usually have an interactive structure that aims to involve active learner participation, although it can be said that they are mostly directed by the teacher. In addition to the books, other materials such as worksheets provided by the Program and Material Development Unit are used in lessons to support the content of the books. Besides these language learning materials in books and worksheets, the lessons involve the use of extra materials such as games, songs and drama activities which are also provided by the same unit.

As it does in instruction, the school aims to provide a standardized form of assessment for all the classes. Therefore, all the exams are prepared by the Testing and Assessment Unit of the school, and they are administered in the same way in all classes. Students take six midterms and one final exam during the school year as well as taking a quiz every two weeks. The midterms and the final exam include four sections, namely Reading, Listening, Writing and Speaking. The quizzes consist of use of English and vocabulary questions as well as a Reading or Listening section. In addition to traditional assessment methods, the school employs alternative assessment methods in the form of portfolios. That is, students are required to complete several group and individual projects which involve writing assignments, group and individual presentations, extensive reading tasks, and skit or drama projects that are collected in their individual portfolios throughout the year.

Technology is constantly used in classes in the school. The school gives a laptop to each instructor, and the instructors use the laptops for instructional purposes. Each class is equipped with a projector and a speaker system. In lessons, the software programs of the course books are used to facilitate the lessons. In addition, various

online and offline audio-visual materials, which are provided by the Program and Material Development Unit of the school, are used in lessons. Students are also expected to use technology individually to complete an online portfolio called *My Lab*, which is on the website of the course book used in the school. On the website, students are assigned online grammar, vocabulary, reading, listening and writing exercises to complete at the end of each unit. At the school building, there are two computer labs that can be used by students during school days to complete the *My Lab* assignments or to study English individually.

For the students in the ELT-ELL program, the school offers an intensive language education, as it can be inferred from the details mentioned above. As the program teaches students who major in the English language, the school aims to assist them in improving their language skills as much as possible. Therefore, the school year involves intensive instruction. Each semester, a course book is covered in addition to the extra listening/speaking and writing books and extra materials. Students are frequently assigned homework in addition to the portfolio projects. As the school aims to provide this intensive instruction in all classes of the program in a standardized way, it does not allow for much learner choice and involvement in the learning process. The program is followed in the same way in all classes, therefore, neither learners nor instructors have much control or choice on the program, when it is considered from learner autonomy promotion perspective. Similarly, the curriculum and the practice in school does not include any explicit activities that encourage learners to reflect on their learning and evaluate their own performances. In terms of technology use, although technological facilities are integrated in lessons as well as assignments, learners do not have much choice over these learning materials and tasks. Rather, they complete the activities assigned by the school.

3.3 Participants

The present study involved questionnaire participants and interview participants, and they are described under the following sections.

3.3.1 The questionnaire participants

The questionnaire participants of the present study were 50 intermediate-level English preparatory class students studying at a Turkish state university in Ankara. The sampling strategy used while selecting these participants was convenience sampling, which is a non-probability sampling strategy in which members of the target population are selected based on specific criteria such as easy accessibility, geographical location, availability during specific time periods or members' willingness to participate in the study (Dörnyei, 2007). The students in four ELT-ELL classes were chosen as the questionnaire participants of the present study. The reason for that was choosing the participants from the ELT-ELL classes was convenient for the researcher as the researcher had been working in the ELT-ELL program of the school for four years when the study was conducted. Therefore, she had extensive knowledge about the curriculum, lessons, and assessment the students were offered by the program, which guided her in the processes of designing and conducting the study. Also, the participants in the experimental group were the students in the two classes that the researcher taught. This enabled the teacher-researcher to have constant contact with the participants during the study. The participants were able to communicate with the teacher-researcher both face-to-face and via e-mail for consultation related to the tasks. On the other hand, being the instructor of the participants at the same time, the teacher-researcher was careful to remain objective throughout the study and not affect the participants' views about the tasks and about the overall project.

In the present study, the potential risks of convenience sampling were taken into consideration while using this strategy. Similar to other non-probability sampling strategies, convenience sampling does not aim to make generalizations about the total population based on the sample group since it represents only a specific group rather than the whole population (Dörnyei, 2007). Therefore, the present study avoids making any generalizations about the whole population. Convenience sampling also has an increased amount of risk in terms of demonstrating bias compared to probability sampling strategies because certain groups can be selected or excluded from the sample on purpose (Cohen, Manion & Morrison, 2000, as cited in Dörnyei, 2007).

However, it is not assumed that the current study increased the risk of being biased because of using convenience sampling. The participants in four classes were chosen only because of their convenience to the researcher in terms of accessibility. These four classes had already been formed at the beginning of the academic year by the school administration without any influence of the researcher. The study was conducted with all the members of the four classes based on voluntary participation without excluding any of the students or including more students to the classes.

As the experimental and the control groups in the study were formed by making use of four classes that were already arranged at the beginning of the term, the present study had a quasi-experimental design. In order to handle the initial group differences, one precaution that was taken was not allowing the students to choose the group they are going to be in (treatment or control group), which is a practice recommended by Creswell (2009) and Dörnyei (2007). Instead, the classes were assigned to be in the control or the experimental group by the researcher.

Finally, the two groups were similar to each other in terms of the variables that were assumed to have an effect on the study findings. They were all intermediate-level preparatory school students. In addition, although the participants in the experimental and the control group had different instructors, they were exposed to a standardized form of instruction and assessment that had to be followed by all the instructors in the same way in the school. That is, they all had 24-hour English instruction at school following the same curriculum. The lessons, which followed the curriculum and the program designed by the Program and Material Development Unit of the school, were taught in the same way. They all involved the teaching of the listening, reading, writing speaking, grammar and vocabulary components in an integrated way based on the course books used in the program on the days assigned by the unit beforehand, therefore, the learners were taught with the same pace. All the additional materials and activities used in lessons were also specified by the same unit. The learners in the two groups were also assessed and evaluated in the same way by using the same tools and methods provided by the Testing and Assessment Unit of the school, which are implemented in the same way by all the instructors on the dates determined by the unit.

3.3.1.1 Demographic profiles of the questionnaire participants

The experimental group and the control group consisted of 25 participants each. The participants were Turkish intermediate-level EFL learners studying in the preparatory school of a state university in Ankara, Turkey. The demographic data about the participants in the two groups are demonstrated in Table 3.1.

Table 3.1

Demographic Profiles of the Questionnaire Participants

ITEMS	**EXPERIMENTAL GROUP** ***(n = 25)***		**CONTROL GROUP** ***(n = 25)***	
	n	***%***	**n**	***%***
Age				
18-20	22	88	23	92
21-24	2	8	1	4
25-27	1	4	1	4
Gender				
Female	21	84	19	76
Male	4	16	6	24
Department				
English Language Teaching	19	76	20	80
English Language and Literature	6	24	5	20
High school				
Anatolian	14	56	19	76
Anatolian teacher training	6	24	3	12
Regular	1	4	3	12
Private	3	12	0	0
Religious	1	4	0	0
Years of studying English				
3-6	4	16	3	12
7-10	18	72	14	56
more than 10	3	12	8	32
Hours of daily English study				
Not at all	0	0	1	4
Less than 2	12	48	12	48
2-4	12	48	8	32
more than 4	1	4	4	16

In the experimental group, as illustrated in Table 3.1, the ages of the participants ranged between 18 and 27. While the majority of the participants (88%), namely 22 of them, were 18 to 20 years old, 2 participants were aged between 21 and 24, and 1 participant was aged between 25 and 27. With regard to their gender, 21 participants (84%) were female while 4 of them were male. There were two departments that the participants were enrolled in. While 19 students were enrolled in English Language Teaching, 6 of them were English Language and Literature students. As for the type of high school that they had studied in, 14 participants had graduated from Anatolian high schools, and 6 participants had graduated from Anatolian teacher training high schools, while 3 participants had graduated from private schools, 1 from a regular high school, and 1 from a religious high school. Regarding the length of their English studies, 18 of the students stated that they had been studying English for 7-10 years, while 4 of the participants had been studying English for 3-6 years, and 3 participants had been studying it for more than 10 years. With regard to the amount of time they spent studying English outside the class per day, 12 students stated that they studied English outside the class for less than 2 hours a day while 12 of the other students studied 2-4 hours, and 1 student studied for more than 4 hours.

When the information about the control group is examined in Table 3.1, it can be seen that the ages of the participants ranged between 18 and 27, as in the experimental group. The distribution of the participants' ages in the categories were quite similar to the experimental group, as there were 23 participants (92%) who were aged between 18 and 20, while there was 1 participant aged between 21 and 24 years, and 1 other participant aged between 25 and 27 years. There were 19 female and 6 male participants in the group. As for their departments, 20 of the students (80%) were enrolled in English Language Teaching, and 5 were enrolled in English Language and Literature. With regard to the high school type that they had studied in, the majority of the participants (n = 14, 56%) were graduates of Anatolian high schools, whereas there were 3 graduates of Anatolian teacher training high schools and 3 graduates of regular high schools. About the amount of years they had been studying English for, the majority of the participants (n = 14, 56%) stated that they had been studying English for 7 to 10 years, 8 of them (32%) had been studying for more than 10 years,

and 3 of them were studying for 3 to 6 years. Most of the participants, namely 48% (n = 12) stated that they spent less than 2 hours for studying English outside the class per day, while 8 participants studied for 2-4 hours, 4 participants studied for more than 4 hours, and 1 participants reported not studying at all.

To sum up, the demographic data about the experimental and the control groups demonstrate that the two groups were similar to each other in almost all of the features presented.

3.3.1.2 Computer and Internet usage of the questionnaire participants

Data related to the computer and Internet usage of the questionnaire participants were also gathered during the study. This information is presented in Table 3.2.

Table 3.2

Computer and Internet Usage of the Questionnaire Participants

ITEMS	**EXPERIMENTAL GROUP** ***(n = 25)***		**CONTROL GROUP** ***(n = 25)***	
	n	***%***	**n**	***%***
Ownership of a personal computer				
Yes	14	56	15	60
No	11	44	10	40
Way(s) of accessing the Internet (Multiple response)				
personal computer	14	56	11	44
personal mobile phone	21	84	24	96
computers at school	1	4	4	16
his/her friend's computer	7	28	3	12
Internet cafés	2	8	0	0
Other	3	12	1	4
Hours of daily Internet usage				
not at all	0	0	0	0
less than 2	7	28	6	24
2-4	11	44	12	48
5-7	5	20	7	28
more than 7	2	8	0	0

Table 3.2

Computer and Internet Usage of the Questionnaire Participants (continued)

ITEMS	**EXPERIMENTAL GROUP** ***(n = 25)***		**CONTROL GROUP** ***(n = 25)***	
	n	***%***	**n**	***%***
Purpose(s) of using the Internet (Multiple response)				
communication	23	92	23	92
entertainment	24	96	23	92
improving English	21	84	21	84
learning new things	21	84	21	84
doing schoolwork	23	92	22	88
Using Internet for an English class				
Yes	15	60	12	48
No	10	40	13	52
Percentage of the English websites they visit				
none	1	4	0	0
less than 30%	14	56	14	56
30-60%	9	36	6	24
more than 60%	1	4	5	20

In the experimental group, most of the participants (56%), namely 14 of them, stated that they owned a personal computer. The participants were asked about the ways in which they accessed the Internet, and they were asked to mark all the choices that applied to them in the questionnaire. Their answers demonstrated that mobile phone was the most common tool used by the students. The mobile phone was chosen by 21 students (84%) to access the Internet, while personal computer was chosen by 14 students (56%). In addition, 7 students stated that they used their friends' computers, 2 students used Internet cafés, and 1 student used the computers at school. The 'other' response in the questionnaire was chosen by 3 students, and two of them stated that they used the computers at their dormitory while one of them used his/her mother's computer. The amount of time that the participants spent on the Internet daily was stated to be less than 2 hours by 7 participants, 2-4 hours for 11 participants, 5-7 hours

for 5 participants, and more than 7 hours for 2 participants. None of the participants stated that they spent no time on the Internet daily. Regarding the purposes of the participants for using the Internet, the students were asked to choose all the alternatives that applied to them on the questionnaire. The data showed that 24 participants used it for entertainment, 23 participants used it for communicating with other people, 23 participants used it for doing schoolwork, 21 participants used it for improving their English, and 21 participants used it for learning new things. As for their Internet uses in their English education before coming to preparatory school, 15 participants (60%) expressed that they had used it for their English studies before. It was indicated by 9 of these participants that they had used it for doing homework and by 4 participants that they had used it for self-study such as finding materials and doing listening, reading, writing and grammar exercises. In addition, 1 participant explained that they used the Internet in class and completed exercises on smart board, and 1 participant stated that s/he used *Dyned* at school. With regard to the language of the websites they visited, 14 of the participants said that less than 30% of the websites they visited on the Internet were in English, and 9 participants stated that 30% to 60% of the websites they visited were in English. One of the participants said that more than 60% of the websites they visited were in English, and another participant stated that none of the websites they visited were in English.

As for the control group, it is demonstrated in Table 3.2 that 60% of the students (n = 15) in this group owned a personal computer. Regarding their Internet access, similar to the experimental group, the mobile phone was the most commonly used tool. While 24 of the participants used their mobile phones, 11 of them used their personal computers, and 7 participants made use of other methods. With regard to the amount of their Internet usage, 12 participants spent between 2 and 4 hours on the Internet per day, 7 participants spent between 5 and 7 hours, and 6 participants spent less than 2 hours. None of the participants stated to spend no time or more than 7 hours on the Internet per day. About their purposes of using the Internet, which was a multiple-response item on the questionnaire, the data revealed that 23 participants used the Internet for communication, 23 participants for entertainment, 22 participants for schoolwork, 21 participants for improving their English and 21 participants used it for

learning new things. The number of the participants who had used the Internet for an English class before their preparatory school education was 12. Among these 12 students, 8 of them stated that they had used it for doing homework while 4 of them had used it for self-study. Finally, as for the language of the websites they visited, 14 participants expressed that less than 30% of the websites they visited were in English, whereas 6 participants stated that 30 to 60% and 5 participants stated that more than 60% of the websites they visited were in English.

The information presented in this section suggests that, as in their demographic characteristics, the two groups were also similar in their computer and Internet usage.

3.3.2 The interview participants

The semi-structured interviews were conducted with 9 participants from the experimental group. The interview participants were chosen by using purposive sampling, and maximum variation sampling was followed as the sampling strategy. In this sampling strategy, participants who differ from each other in terms of their experience or features related to the focus of the study are selected in order to reveal any common points or patterns across the respondents (Dörnyei, 2007). With this aim, in the present study, the interview participants were selected based on their scores from Part II of the questionnaire, in other words, the changes in their self-perceived autonomy levels. That is, after calculating the difference between the pre- and post-questionnaire scores for each participant in the experimental group, the three participants with the largest increase in their questionnaire scores, three participants with an average increase, and three participants with a decrease were chosen as the interview participants. The nine participants who were identified based on these criteria were numbered from 1 to 9 as demonstrated in Table 3.3 below.

Table 3.3

Changes in the Learner Autonomy Levels of the Interview Participants

Participant	Change in Learner Autonomy
1	Large Increase
2	Large Increase
3	Large Increase
4	Average Increase
5	Average Increase
6	Average Increase
7	Decrease
8	Decrease
9	Decrease

3.3.2.1 Demographic profiles of the interview participants

The demographic information about the interview participants are demonstrated in Table 3.4. As it can be seen in Table 3.4, 7 participants were 18 years old, while 1 participant was 19 and 1 other participant was 27 years old. As for their genders, there were 7 female and 2 male participants. All the participants except for one were ELT students. With regard to the type of high school they had graduated from, 4 participants were graduates of Anatolian high schools and 3 participants were graduates of Anatolian teacher training high schools, while 1 participant had graduated from a private high school and 1 from a regular high school. All the participants except for one had been studying English for 7-10 years. Finally, 5 participants studied English daily for 2-4 hours outside the class, while 3 studied for less than 2 hours, and 1 for more than 4 hours.

Table 3.4

Demographic Profiles of the Interview Participants

Participant	Age	Gender	Department	High school	Years of studying English	Hours of daily English study
1	18	Female	ELT	Anatolian	7-10	2-4
2	18	Female	ELT	Private	7-10	Less than 2
3	18	Female	ELT	Anatolian	7-10	2-4
4	18	Male	ELL	Anatolian	7-10	2-4
5	19	Male	ELT	Anatolian teacher training	7-10	2-4
6	18	Female	ELT	Anatolian teacher training	7-10	Less than 2
7	18	Female	ELT	Anatolian	7-10	Less than 2
8	18	Female	ELT	Anatolian teacher training	7-10	2-4
9	27	Female	ELT	Regular	more than 10	more than 4

3.3.2.2 Computer and Internet usage of the interview participants

Data about the computer and Internet usage of the interview participants are illustrated in Table 3.5. As demonstrated in this table, 5 participants owned a personal computer. Regarding their daily Internet usage, 3 participants stated that they used the Internet for less than 2 hours daily, 3 participants for 2-4 hours, 2 participants for 5-7 hours, and 1 for more than 7 hours. The number of the participants who had used the Internet for an English class before coming to preparatory school was 6. As for the amount of the English websites they visited regularly, 5 participants stated that 30-60% of the websites they visited regularly were in English, while for 4 participants, this percentage was less than 30%.

Table 3.5

Computer and Internet Usage of the Interview Participants

Participant	Ownership of a personal computer	Hours of daily Internet usage	Using Internet for an English class	Percentage of the English websites they visit
1	No	Less than 2	Yes	Less than 30%
2	Yes	5-7	No	30-60%
3	Yes	Less than 2	No	Less than 30%
4	No	5-7	Yes	Less than 30%
5	No	2-4	No	30-60%
6	Yes	2-4	Yes	30-60%
7	Yes	more than 7	Yes	30-60%
8	No	Less than 2	Yes	Less than 30%
9	Yes	2-4	Yes	30-60%

Table 3.6 demonstrates the ways in which the interview participants accessed the Internet. As can be seen in the table, the most common way for the participants to access the Internet was to use their personal mobile phones. Besides, 5 participants used their personal computers. The table shows that all the participants used at least one of these two tools to access the Internet. In addition, 2 participants stated using his/her friend's computer, 1 stated using the computers at school, and 1 used Internet cafés.

Table 3.6

Interview Participants' Ways of Accessing the Internet

Participant	Personal computer	Personal mobile phone	Computers at school	His/her friend's computer	Internet cafés
1		✓	✓		✓
2	✓				
3	✓	✓			
4		✓		✓	
5		✓		✓	
6	✓	✓			
7	✓				
8		✓			
9	✓	✓			

3.4 The experimental treatment

In the present study, an experimental treatment was implemented to investigate the effects of CALL on learner autonomy. During the treatment, which lasted seven weeks, a number of online tools were introduced to the experimental group every week, and the participants were required to use the tools in their out-of-class English studies. While the experimental group received the treatment in addition to the instruction in preparatory school, the control group continued their standard preparatory school instruction without getting any special treatment. That is, as the experimental group did, they continued to receive English instruction for 24 hours a week in school. This instruction involved lessons in which the four skills and the sub-skills of the language were taught in an integrated and communicative way. In the lessons, the curriculum and the program provided by the Program and Material Development Unit of the school were followed, and the course books and materials determined by the unit were used. The assessment tools included the midterms, quizzes and portfolio assignments. In terms of learner autonomy, the instruction in the school did not allow for much learner choice as it aimed to provide a standardised form of education for all the learners. Similarly, the students in the school were not explicitly

required or encouraged to engage in reflection or self-evaluation. The experimental group received the experimental treatment in addition to continuing the instruction in school. Figure 3.2 illustrates the procedures followed each week in the treatment.

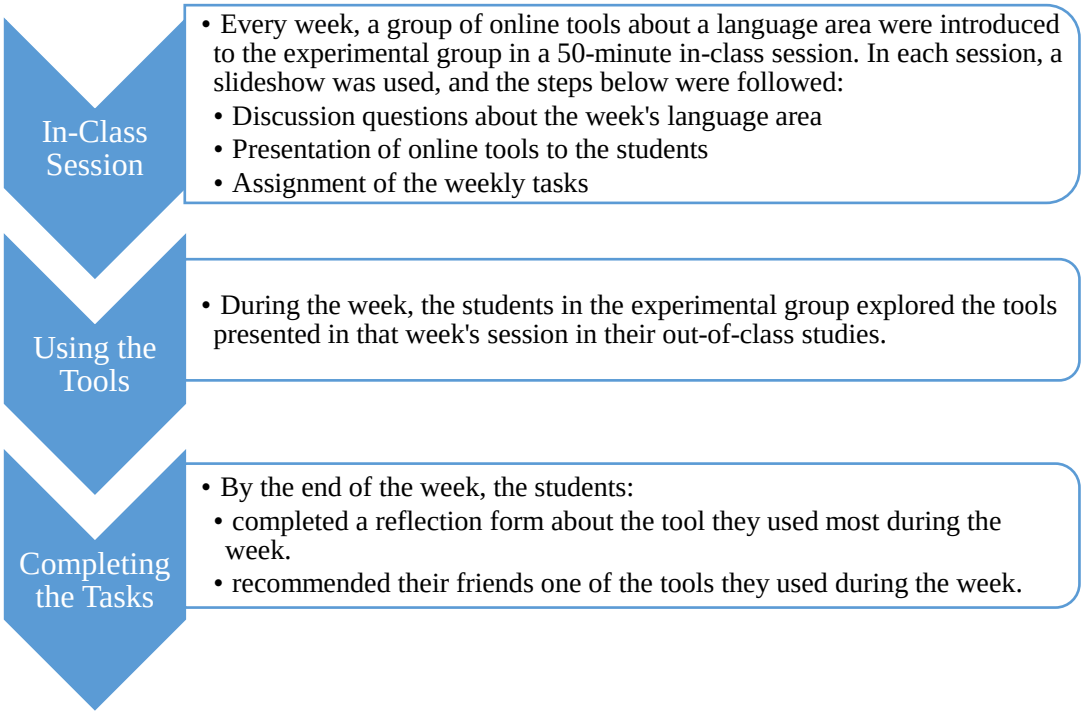

Figure 3.2 The procedures followed each week during the CALL treatment.

As illustrated in Figure 3.2, each week, a group of online tools related to a different language component were presented to the participants in the weekly sessions. The weekly sessions followed the same procedure in both of the classes each week to make the sessions consistent throughout the study. Each session lasted 50 minutes, which was the duration of a class hour in the preparatory school the study was conducted in. In every session, a PowerPoint slideshow prepared by the researcher was used (See Appendix B for sample slides from each slideshow used by the researcher in the sessions). Each session started with a warm-up part, in which the students were asked several questions related to the language component of the week. The warm-up questions were typically about how the students usually studied to improve themselves

in that language component and if they used technology in any way to study that skill. The students were asked to discuss the questions in pairs or small groups, which was followed by a brief whole-class discussion. The aim of the warm-up parts was to stimulate students' background information and make them think about their learning experiences related to the language component so that they would be mentally prepared to focus on the session. Next, the researcher introduced the tools to the students by using the slideshow. The tools were presented in sub-categories according to their functions and content. For each sub-category of tools, the researcher made a description of the tools and explained how to use them. The name and the link for each tool was included in the slideshow, and the students were informed whether the tools required registration. In addition to explaining how to use the tools, the researcher shared some ideas for how to make use of them to practise English as well as asking the students about their opinions and suggestions about using the tools.

Following the presentation of the tools, the researcher explained that the students were required to use the tools mentioned in the presentation during the week ahead and then complete two tasks, which were the same throughout the project. The first task was to complete the reflection form. At the end of each week, the students were expected to complete the reflection form about the tool they had used most during the week and submit it on *Edmodo*. The reason why the students were asked to evaluate the tools they used most was that the researcher wanted to make sure that the students would have enough experience in using the tool to be able to evaluate it. In addition, the students were not asked to evaluate their most or least favourite tools in order to avoid getting only positive or only negative answers in the reflection forms. The same reflection form was given to the participants each week without making any changes on it. In this way, it was thought that the students would get familiar with the form throughout the implementation process and find it easy to complete. The second task for the students was to choose one of the tools they had used during the week and recommend it to their classmates on *Edmodo*. The students were free to recommend the tool evaluated in their reflection form or another tool. The aim of this task was to encourage the participants to interact with each other and learn in a collaborative way

during the treatment. The deadline for the weekly tasks was the day before the next session day every week.

At the end of the sessions, the researcher asked if the students had any questions, and she clarified the points asked by the students. She also informed the students that they were welcome to share any problems or questions they had during the week related to the tools or the tasks with her face-to-face, on *Edmodo* or via e-mail.

Every week except for the first one, the researcher started the session with a brief discussion about the previous week. In this part, the researcher asked the students to share their comments about the previous week's tools. She asked which tools they had found most useful and least useful and which tools they most liked and disliked. The feedback parts were done as a whole-class discussion in which the students freely shared their opinions about the tools, made recommendations about how to make use of the tools and asked questions and shared their problems related to the tools to get advice both from their classmates and the researcher.

Finally, during the study the student activity was monitored by the teacher through the weekly tasks completed. Since the study focused on out-of-class study of the students, whether the students were really using the tools presented to them was checked through the submission of the weekly tasks. During the treatment, the researcher checked the activity on *Edmodo* each week in terms of whether they were making the assigned submissions regularly. In addition, in the reflection forms, the students were required to include at least one screenshot obtained while they were using the tool evaluated in the reflection form. These screenshots also served as evidence to prove that the students had used the tools (See Appendix C for sample screenshots of student work from the reflection forms sent by the students each week).

3.4.1 The instructional approach in the experimental treatment

In the present study, the experimental treatment was implemented with the aim of fostering learner autonomy. Therefore, the instruction provided by the teacher-researcher was designed concerning that aim.

First of all, since autonomous learners are independent learners who are genuinely interested in the learning process and take responsibility, they are usually self-motivated and willing to learn rather than feeling obliged to learn (Reinders, 2010; Sinclair, 2000; Sharp, Pocklington & Weindling, 2002). Therefore, in the experimental treatment, the learners were included in the treatment on a voluntary basis. Their performance or learning activity during the treatment was not graded, and it did not have a positive or negative effect on their grades. Instead, the experimental treatment was implemented as an additional activity to their education in the preparatory school.

The main roles of the teacher-researcher during the experimental treatment was to conduct the weekly in-class sessions in which she presented the online tools to the learners, assign the weekly tasks, monitor learner activity by following the submission of the weekly tasks on *Edmodo*, and provide learners with guidance when they needed it in the learning process. Specifically, the following principles were adopted in the instructional approach:

- *Acting as a facilitator*. As the promotion of learner autonomy requires the learner to be active in the learning process to take responsibility for learning, active and independent learning was encouraged by putting the teacher-researcher in a facilitator role rather than at the centre of the learning process. The teacher aimed to facilitate the learning process by providing the learners with learning resources and guide them in how to use them, as recommended by Gonzales and Louis (2008) and Sturtridge (1992).
- *Enabling learner choice.* Autonomous learners are able to control their learning by making choices in the process such as over the learning objectives, content, materials and activities (Dörnyei, 2001). In the experimental treatment, the participants were encouraged to make choices over their learning. This was achieved by providing them with alternatives in learning resources and how to use them. Each week, the participants were introduced to a group of online tools, but they were free to choose which ones to use and evaluate among those tools. Similarly, they were provided with

recommendations on how to use the tools in their studies, but they were free to use the tools in whichever way they wanted to in their out-of-class studies.

- *Encouraging self-evaluation.* A key characteristic of autonomous learners is reflecting on their learning. In the experimental treatment, the participants were encouraged to reflect on their learning by filling out a reflection form about one of the tools each week. By having them evaluate both the tool and their performance of using the tool, it was aimed that the learners would improve their self-evaluation and reflection skills.
- *Creating an interactive learning environment.* One of the widely accepted elements of promoting learner autonomy is encouraging interaction and collaboration among learners and the teacher (Little, 2000). During the weekly sessions, the researcher paid attention to making the sessions interactive and communicative for the learners. The participants were encouraged to share their comments and ask questions in any part of the sessions. They were also encouraged to check the recommendations their classmates shared on *Edmodo* and comment on each other's recommendations in order to facilitate collaboration and interaction among learners. In addition, at the beginning of the weekly sessions, the teacher-researcher asked about the learners' comments and experiences related to the previous week with the aim of motivating the learners to share their ideas and experiences with each other.
- *Encouraging out-of-class learning.* Autonomous learners engage in out-of-class learning rather than restricting their studies to formal in-class education (Field, 2007), and teachers who aim to foster learner autonomy are recommended to encourage learners to continue learning outside the class. In the experimental treatment of the present study, out-of-class learning was a major component of the learning process. The design of the CALL implementation was based on out-of-class learning. Although in-class sessions were involved in which the online tools were presented to the learners, the actual practice of the tools were implemented as out-of-class study by the learners with the aim of leading learners to develop the necessary skills and strategies to control and manage their own learning (Benson, 2006).

3.4.2 Materials used during the experimental treatment

The materials used during the experimental treatment were online tools, a reflection form and a website called *Edmodo*.

3.4.2.1 Online tools

The online tools presented to the participants in the experimental group each week are demonstrated in Table 3.7 according to the sub-categories under which they were grouped. The table also illustrates which of these tools were evaluated in the reflection forms by the participants and the average time spent by the participants using the evaluated tools each week.

As Table 3.7 illustrates, the tools were gathered under seven main titles, each of which was about a specific language component. Namely, these titles were 'Vocabulary', 'Reading', 'Listening', 'Speaking and Pronunciation', 'Writing', 'Culture', and 'Integrated Skills'. The tools were presented under these headings in order to ascertain that all the main language components were covered in the CALL intervention and also to present the tools to the learners in a meaningful way. These main titles were further divided into sub-categories according to the functions or the content of the tools. To illustrate, under the 'Vocabulary' title, there were two sub-categories: *Dictionaries and Thesauruses*, and *Vocabulary Practice*. This further categorization was made with the aim of making the tools list clear for the learners and guiding them in the learning process. A group of the tools were websites not specifically designed for learners of English, but included authentic content in English for native or non-native speakers of English (e.g. *Youtube, BBC News, TED Talks*). The other group of tools were specifically designed for language learners with the aim of assisting learners in their studies (e.g. *Speechyard, Busuu, Engvid*).

Table 3.7

The Online Tools Used in the Experimental Treatment

CATEGORY	NAME OF THE TOOL	WEB LINK FOR THE TOOL	n[a]
Week 1: Vocabulary Tools *(Average time spent using the evaluated tools: 82 minutes)*			
Dictionaries and Thesauruses	Lingro	http://lingro.com/	3
	Ozdic Collocations Dictionary	http://www.ozdic.com/	1
	Onelook Thesaurus	http://www.onelook.com/thesaurus/	-
	Lexipedia Thesaurus	http://www.lexipedia.com/	1
	Merriam-Webster	http://www.merriam-webster.com/	4
	Vocabulary.com	https://www.vocabulary.com/	-
	Wordnik	https://www.wordnik.com/	-
	Word Hippo	http://www.wordhippo.com/	-
Vocabulary Practice	Free Rice	http://freerice.com	11
	Wordle	http://www.wordle.net/	-
	Quizlet	https://quizlet.com	5
Week 2: Reading Tools *(Average time spent using the evaluated tools: 114 minutes)*			
News and Article Websites	Buzzfeed	https://www.buzzfeed.com	3
	Mashable	http://mashable.com/	1
	Little Things	http://www.littlethings.com/	1
	Guardian News	https://www.theguardian.com	-
	BBC News	http://www.bbc.com/news	-
	FOX News	https://www.foxnews.com/	1
	Yahoo News	https://news.yahoo.com/	1
	US Magazine	https://www.usmagazine.com/	1
	Online Newspapers	http://www.onlinenewspapers.com	-
	Pop Sugar	http://www.popsugar.com/	-
Fiction	Story Bird	http://storybird.com/	8
	Wattpad	https://www.wattpad.com/	1
	Mysterynet	http://www.mysterynet.com/	3
	Project Gutenberg	https://www.gutenberg.org/	2
Blogs	Wordpress	https://wordpress.com/topics/	3
	Tumblr	https://www.tumblr.com/	-
	Soup	http://www.soup.io/	-

[a] **N**umber of the participants who evaluated the tool in the reflection forms

Table 3.7

The Online Tools Used in the Experimental Treatment (continued)

CATEGORY	NAME OF THE TOOL	WEB LINK FOR THE TOOL	n[a]
Week 3: Listening Tools *(Average time spent using the evaluated tools: 152 minutes)*			
Videos	Youtube	https://www.youtube.com	10
	TED Talks	http://www.ted.com/	7
	TED Ed	http://ed.ted.com/	-
	Speechyard	http://speechyard.com/us/video/	4
Podcasts	BBC Podcasts	http://www.bbc.co.uk/podcasts	1
	Culips	http://culips.com/	1
	Better at English	http://www.betteratenglish.com/	-
	Teacher Luke	http://teacherluke.co.uk/	-
Exercises	Elllo	http://www.elllo.org/	2
	ESL Lab	https://www.esl-lab.com/	-
Audiobooks	Project Gutenberg	http://www.gutenberg.org/browse/categories/1	-
Radio Channels	TuneIn	http://tunein.com/	-
Week 4: Speaking and Pronunciation Tools *(Average time spent using the evaluated tools: 100 minutes)*			
Pronunciation	English Central - Pronunciation	https://www.englishcentral.com/videos#/!/index	5
	Spoken Skills	http://www.spokenskills.com/student-activities.cfm	3
	Natural Readers	https://www.naturalreaders.com/	1
	Ship or Sheep	http://www.shiporsheep.com/	3
	English Online - Pronunciation	http://www.english-online.org.uk/pronounce/pronounce.htm	2
	Many Things - Pronunciation	http://www.manythings.org/pp/	2
	BBC Learning English - Pronunciation	www.bbc.co.uk/worldservice/learningenglish/multimedia/pron/	-
	Cambridge Phonetics Focus	http://cambridgeenglishonline.com/Phonetics_Focus/	-

[a] **N**umber of the participants who evaluated the tool in the reflection forms

Table 3.7

The Online Tools Used in the Experimental Treatment (continued)

CATEGORY	NAME OF THE TOOL	WEB LINK FOR THE TOOL	n[a]
Week 4: Speaking and Pronunciation Tools (continued) *(Average time spent using the evaluated tools: 100 minutes)*			
Conversation and Language Exchange	Conversation Exchange	https://www.conversationexchange.com	1
	Speak Talk Chat	http://speaktalkchat.com/	-
	Italki	https://www.italki.com/partners	-
	Speaky	https://www.speaky.com/	2
	Busuu	https://www.busuu.com/en	3
	Lingoglobe	http://www.lingoglobe.com/	-
	Coeffee	https://coeffee.com/login	-
Chat Robots	EFL Classroom Ebot	http://eflclassroom.com/bots/ebot2.html	-
	ESL Fast English Tutor	http://www.eslfast.com/robot/english_tutor.htm	-
	Santabot	http://www.santabot.com/	2
	Alice	http://www.tolearnenglish.com/free/celebs/alice.php	1
Week 5: Writing Tools *(Average time spent using the evaluated tools: 74 minutes)*			
Creative Writing	One Word	http://www.oneword.com/	8
	Creative Writing Prompts	http://www.creativewritingprompts.com/#	-
	Future Me	https://www.futureme.org/	9
	Story Bird	https://storybird.com/create/	4
Online Journals	Penzu	https://penzu.com/	-
	Diary	http://diary.com/	1
Forums	ESL Cafe Student Forums	http://forums.eslcafe.com/student/	-
	Learn English Forum	http://learn-english-forum.org/	-
	English Club Forums	https://www.englishclub.com/esl-forums/	-
Blogs	Wordpress	https://en.wordpress.com/	-
	Tumblr	https://www.tumblr.com/	-
	Soup	http://www.soup.io/	-

[a] **N**umber of the participants who evaluated the tool in the reflection forms

Table 3.7

The Online Tools Used in the Experimental Treatment (continued)

CATEGORY	NAME OF THE TOOL	WEB LINK FOR THE TOOL	n[a]
Week 5: Writing Tools (continued) *(Average time spent using the evaluated tools: 74 minutes)*			
Exercises	Learn English Teens - Writing	https://learnenglishteens.britishcouncil.org/skills/writing-skills-practice	-
	English Interactive - Writing	http://englishinteractive.net/writing.html	1
	BBC Skillswise - Writing	http://www.bbc.co.uk/skillswise/topic-group/writing	-
	Save the Comma	http://www.savethecomma.com/game/	-
	Word Counter	http://www.wordcounter.com/	-
	English Test Store - Writing	https://englishteststore.net/	2
Week 6: Culture Tools *(Average time spent using the evaluated tools: 81 minutes)*			
British Culture	Learn English – UK Culture	https://learnenglish.britishcouncil.org/en/uk-culture	8
	Learn English Teens – UK Now	http://learnenglishteens.britishcouncil.org/uk-now	1
	Foreign Students – British Culture	http://www.foreignstudents.com/guide-to-britain/british-culture	-
	ESOL Courses – Life in the UK	http://www.esolcourses.com/content/topicsmenu/life-in-the-uk.html	1
American Culture	Edupass - Culture	http://www.edupass.org/culture/	-
	Vidaamericana - Culture	http://www.vidaamericana.com/english/culture.html	3
	ESOL Courses – Life in the USA	http://www.esolcourses.com/content/topicsmenu/life-in-the-usa.html	2
World Cultures	Learn English Teens – Life Around the World	http://learnenglishteens.britishcouncil.org/magazine/life-around-world	2
	Culture Crossing Guide	http://guide.culturecrossing.net/index.php	-
	Internations	https://www.internations.org/	-
	The Culturist	http://www.thecultureist.com/	-

[a] **N**umber of the participants who evaluated the tool in the reflection forms

Table 3.7

The Online Tools Used in the Experimental Treatment (continued)

CATEGORY	NAME OF THE TOOL	WEB LINK FOR THE TOOL	n[a]
Week 6: Culture Tools (continued) *(Average time spent using the evaluated tools: 81 minutes)*			
Idioms and Sayings	Learn English.de - Idiom Page	http://www.learnenglish.de/idiompage.html	2
	Vocabulary - Idioms	http://www.vocabulary.co.il/idioms/	3
	BBC - The Teacher	http://www.bbc.co.uk/worldservice/learningenglish/language/theteacher/	1
	Idiom Connection	http://www.idiomconnection.com/	1
	Many Things - Proverbs	http://www.manythings.org/proverbs/	-
World News	BBC World	http://www.bbc.com/news/world	1
	The Guardian World	https://www.theguardian.com/world	-
	NY Times World	http://www.nytimes.com/pages/world	-
Week 7: Integrated Skills Tools *(Average time spent using the evaluated tools: 88 minutes)*			
Learn and Practise English	BBC Learning English	http://www.bbc.co.uk/learningenglish/	-
	British Council Learn English	http://learnenglish.britishcouncil.org/en/	-
	British Council Learn English Teens	https://learnenglishteens.britishcouncil.org/	-
	Many Things	http://www.manythings.org/	6
	ESOL Courses	http://www.esolcourses.com/	3
	English Club	https://www.englishclub.com/learn-english.htm	-
	Engvid	http://www.engvid.com/	3
Social Media	Twitter	https://twitter.com	3
	Facebook	https://www.facebook.com/	1
	Tumblr	https://www.tumblr.com/	-

[a] **N**umber of the participants who evaluated the tool in the reflection forms

The online tools were chosen by the researcher based on a set of criteria. Firstly, a wide range of tools that would appeal to learners with different learning styles, preferences, interests and needs were chosen. As making choices in the learning process is a fundamental dimension of learner autonomy (Benson, 2001), the study aimed to provide learners with options so that they would be able to make their own choices. Secondly, communicative tools that included authentic language content were selected to encourage learners to practise the target language in realistic contexts and through authentic materials. Although some tools that were specifically created for language learners were included in the list in addition to non-pedagogical ones, those tools were first reviewed in terms of whether they included communicative features. Another criterion for the tool selection was being user-friendly. The tools that were easy to use were chosen as it was assumed that they would be more encouraging for the learners to use the tools. Finally, the tools had to be free of charge so that all the students would be able to access them without financial concerns.

By taking the aforementioned criteria as a basis, the tools were evaluated and selected by the researcher. In the tool selection process, firstly, an investigation of online tools was conducted by the researcher. Websites, blogs, forums and social media where English language learners and teachers shared their comments and suggestions about language learning tools were explored. The tools mentioned at these platforms were evaluated by the researcher. In addition, recent academic research studies and articles that focused on the use of online tools in the field of ELT were reviewed, and the tools that were suitable to be used in the present study were chosen. At the final stage of the tool selection process, the suggestions of the participants in the experimental group were gathered. That is, following the administration of the pre-questionnaire, the answers of the students for Question 3 in Part III of the questionnaire were analysed. This question had asked the students which tools they would like to use as part of their English study in preparatory class. The analysis of the participants' answers revealed that while some of the students did not name any specific tools to use in their studies, six participants wanted to use online dictionaries. Also, three students wanted to use *TED Talks*, three students wanted to use *Youtube*, and one student wanted to use news websites. These tools mentioned by the participants were already included in the list

prepared by the researcher. Another student wrote that s/he wanted to use *Engvid*, which was not included in the tools list by the researcher. Since it met the criteria used for tool selection, *Engvid* was added under the 'Integrated Skills' heading.

Finally, in the schedule of the weekly sessions, the language components were ordered starting from more receptive to more productive skills, and the online tools were presented according to that order. The reason for this arrangement was to provide the students with the opportunity to get accustomed to the procedure of the technology intervention until they needed to study more productive skills. It was assumed to be easier for the students to use the tools for the receptive skills as the tools for productive skills might involve more complex procedures such as voice recording, submitting a piece of writing or interacting with another speaker. Therefore, receptive skills which did not require the students to use the language in a productive way were focused on in the earlier weeks. To illustrate, the focus of the first week was vocabulary because it was thought that the students would not have much difficulty while using the tools as they were not expected to produce language in most of the tools.

3.4.2.2 Reflection form

Another material used during the CALL treatment in the present study was a reflection form prepared by the researcher (Appendix D). The participants in the experimental group were asked to complete the reflection form weekly to evaluate one of the tools they had used in the week and their performances of using that tool.

The reflection form consisted of two parts. The first part included 7 questions. The first four questions asked about the name of the participant (Question 1), the date of completing the form (Question 2), the learning focus of the week (Question 3) and the name of the tool evaluated in the form (Question 4). In this part, there were also three open-ended questions about the tool. The participants were asked to state how they had used the tool to practise English (Question 5), how much time they had spent using the tool (Question 6), and one specific material they had found while using the tool (Question 7). The second part of the form included 12 Yes/No items. In this part, the first four items were about the tool that was being evaluated. In these items, the

participants were asked whether the tool was easy to use, enjoyable to use, matched their personal learning styles and could help them to improve their English. The aim of asking these questions was to make students evaluate the tool that they chose. The following items, items 5-11, were statements about the performance of the participants in using the tools. It was aimed that the participants would be able to evaluate their own performances by answering these questions. Item 12 in Part II asked participants whether they were going to continue using the tool for their English studies. This item was included in order to help students make a final evaluation of the tool. In Part II, next to the Yes/No items, the participants were provided with some space where they could add their comments related to each item. In addition, after the Yes/No items, there was another part where the participants could add their further comments and suggestions about the tool if they had any. Finally, at the end of the reflection form, the participants were asked to add at least one screenshot that they obtained while using the tool.

The main aim of including the reflection form in the treatment was to guide the learners in the learning process, encourage them to reflect on their learning, and in this way, to promote learner autonomy. Reflection can be described as "a mental process which takes place out of the stream of action, looking forward or (usually) back to actions that have taken place" (Louden, 1991, a cited in Benson, 2001). Many researchers view reflection as a key element of learner autonomy (Benson, 2001). Little (1997, as cited in Benson, 2001) argues "if we make the development of autonomy a central concern of formal learning, conscious reflection will necessarily play a central role from the beginning, for the simple reason that all formal learning is the result of deliberate intention" (p. 90). Benson (2001) states that reflection enables learners to take control over their learning by evaluating the language, the learning process and accordingly reviewing their learning habits or ways of thinking. Therefore, in the present study, learner reflection was integrated into the CALL treatment through the use of a reflection form.

In addition to encouraging learners to reflect on the learning process in a guided way, the reflection form served another important purpose in the CALL treatment. By

asking the participants to complete and hand in a reflection form each week, the researcher was able to ascertain that the learners were actually using the online tools in their out-of-class studies. That is, as it included details that would prove that the students had used the tools such as open-ended questions and screenshot parts, the refection form was used as evidence for students' completion of the weekly tasks.

3.4.2.3 Edmodo

Edmodo (https://www.edmodo.com/) is a global education network that connects learners and educators. On the website, teachers can create online class groups where learners can communicate with the teacher as well as with their classmates. Teachers can also share materials and assign homework on the website. The website offers a safe and free-of-charge platform for learners and teachers to connect with each other outside the class.

During the CALL intervention in the present study, *Edmodo* was used as the main platform for sharing documents and for communication out of the class. First, a class group for each of the classes in the experimental group was created on the website by the researcher. The participants were provided with guidance about how to use the website and they joined their class group. After each in-class session, the researcher shared the PowerPoint slideshow used in the session and the reflection form template with the students on the website. Similarly, the participants were asked to submit their weekly reflection forms on the website. In addition, each week, a post about that week's language component was created on the website by the researcher, and the students were asked to add a comment in which they recommended their classmates one of the tools they had used during that week.

Furthermore, the website was used as the communication tool among the learners and between the researcher and the learners for out-of-class interaction. The students were encouraged to share their opinions and comments or ask their questions related to the online tools on the website during the treatment. Figure 3.3 illustrates a screenshot of one of the *Edmodo* class groups used during the study.

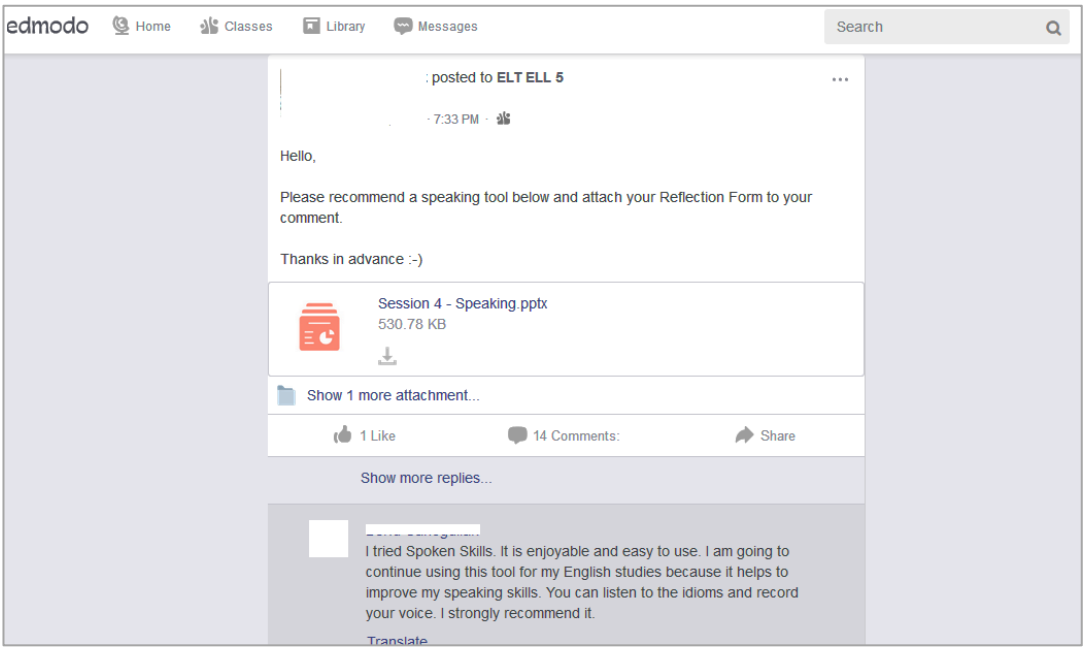

Figure 3.3 A screenshot from Edmodo.

3.5 Data collection instruments

The present study aimed to answer two main research questions, and two data collection instruments were used to answer them, which were a questionnaire and semi-structured interviews. The questionnaire was administered before and after the experimental treatment. The interviews were conducted after the treatment. The research questions and the data collection instruments as well as the data analysis methods used in relation to the questions are demonstrated in Table 3.8.

The first research question was “How does the CALL implementation affect the self-perceived autonomy levels of EFL learners studying in higher education?”, and it had two sub-questions. To explore the answers to these questions, the second part of the questionnaire was used to collect quantitative data. The second research question was “What are the perceptions of EFL learners studying in higher education on the CALL implementation?”, and it had five sub-questions. With the aim of investigating the answers to these questions, the third part of the questionnaire was used, and semi-structured interviews were conducted.

Table 3.8

Research Questions, Data Collection Instruments and Data Analysis Methods

Research Question	**Data Collection Instrument(s)**	**Data Analysis Method(s)**
1. How does the CALL implementation affect the self-perceived autonomy levels of EFL learners studying in higher education? **a)** Does the CALL implementation affect the self-perceived autonomy levels of the participants at between-groups level? **b)** Does the CALL implementation affect the self-perceived autonomy levels of the participants at within-groups level?	• Questionnaire (Part II: Learner Autonomy Questionnaire, implemented as pre-questionnaire and post-questionnaire)	Quantitative: ○ Independent samples t-tests ○ Paired samples t-tests
2. What are the perceptions of EFL learners studying in higher education on the CALL implementation? **a)** What are the changes in the perceptions of the participants on the use of technology to learn English before and after the CALL implementation? **b)** What are the benefits of the CALL implementation according to the participants? **c)** What are the challenges of the CALL implementation according to the participants? **d)** What are the effects of the CALL implementation on learner autonomy according to the participants? **e)** What are the suggestions of the participants to improve the CALL implementation?	• Questionnaire (Part III: Open-Ended Questions, implemented as pre-questionnaire and post-questionnaire) • Semi-structured interviews	Qualitative: ○ constant comparative method

Through the aforementioned data collection instruments, both quantitative and qualitative data were collected with the purpose of triangulation. Triangulation refers to "the generation of multiple perspectives on a phenomenon by using a variety of data sources, investigators, theories, or research methods with the purpose of corroborating an overall interpretation" (Dörnyei, 2007, p. 165). It is viewed as an effective way of increasing both the internal and external validity of research. In the present study, triangulation was aimed to achieve through the use of both quantitative and qualitative data.

3.5.1 Questionnaire

In order to investigate the effects of using CALL to foster EFL learners' autonomy levels, a questionnaire that consisted of three parts was used in the present study (Appendix E).

Part I: Background Information Questions. This part was designed by the researcher and included 12 questions that aimed to gather demographic data about the participants of the study. The participants were asked about their ages, genders, departments, the types of high school they had graduated from, how long they had been learning English, and how much time they spent studying English outside the class per day. Part I also included questions related to the technology use of the participants in order to explore how and to what extent the participants used technology in their daily lives and also to ascertain that each participant would have access to the necessary technological resources during the study. Accordingly, the participants were asked if they had a personal computer, how they accessed the Internet, how much time they spent on the Internet per day, for what purposes they used the Internet, if they had used the Internet in their English classes before their preparatory school education, and about the amount of English websites they visited.

Part II: Learner Autonomy Questionnaire. This part was a Likert-type scale that was designed to determine the autonomy levels of learners. The scale was originally designed by Demirel (2002, as cited in Balçıkanlı, 2006) and was later adapted by Balçıkanlı (2006). The present study utilized the adapted version by Balçıkanlı (2006).

In the study by Balçıkanlı (2006), the questionnaire was titled "Learner Autonomy Questionnaire 2" as it was used in addition to one other learner autonomy questionnaire. The scale was suitable to be used in the present study because the study by Balçıkanlı (2006) had several similarities to this study. First of all, Balçıkanlı (2006) employed an experimental study design to explore fostering learner autonomy, and the present study had a quasi-experimental design and aimed to foster learner autonomy. In addition, the research contexts and the participants in the two studies were similar to each other. Both studies included EFL learners studying in the preparatory school of a Turkish state university as participants. In his adaptation of the questionnaire, Balçıkanlı (2006) removed some of the items that were not relevant to the focus of his study. Accordingly, the adapted version of the questionnaire included 15 items which were about self-awareness, responsibility, independent study methods and independent language-learning methods of learners. The questionnaire was designed as a 5-point Likert scale with the options of '1 = Strongly Disagree', '2 = Disagree', '3 = Neutral', '4 = Agree', '5 = Strongly Agree'.

Part III: Open-Ended Questions. The third part of the questionnaire was designed by the researcher based on the focus of the research question 2a and consisted of open-ended questions, which was administered in the pre- and post-questionnaires of the experimental group only. The first two questions aimed to collect qualitative data about the perceptions of the participants in the experimental group on the use of technology to learn English, and they were asked in the implementation of both the pre-questionnaire and the post-questionnaire. In the pre-questionnaire, the third open-ended question asked about the technological tools the participants would like to use as part of their English studies. This question was asked in order to take students' preferences and suggestions into consideration while designing the technology implementation sessions. The researcher planned to use the data collected in this question to add more technological tools to the weekly technology sessions according to students' interests and needs; therefore, this question was included only in the pre-questionnaire. Finally, in both pre-questionnaire and post-questionnaire, the last question asked the participants to add other comments, questions and suggestions they had if they would like to.

All parts of the questionnaire were implemented in English. Considering that the participants were intermediate-level learners of English, it was assumed that they would be able to understand and complete the questionnaire without difficulty.

3.5.2 Semi-structured interviews

In addition to the data collected through the questionnaire, semi-structured oral interviews were conducted in order to gather more data for the study. Through the interviews, it was aimed to collect qualitative data about the participants' perceptions related to the use of CALL in English language learning to foster learner autonomy. The interviews were conducted with 9 of the participants in the experimental group one week after the implementation of the post-questionnaire.

For the interviews, an interview guide which consisted of a set of questions prepared by the researcher was used (Appendix F). The interview guide consisted of three parts and included 9 questions in total. Part I included four questions which were about the participants' opinions about the CALL treatment. The participants were asked to share their comments about what they liked and disliked about using technology (questions 1 and 2), whether they thought using technology had helped them to improve their English (question 3) and their study skills (question 4). In Part II, there were two main questions related to the effects of the CALL treatment on learner autonomy. Question 5 asked the participants to compare their perceptions of their levels of autonomy before and after the technology implementation. It was assumed that the participants might have difficulty understanding the meaning of autonomy and commenting on their levels of autonomy; therefore, further questions were added to make the concept of autonomy clear for the participants. Namely, question 6 focused on specific sub-skills and capacities associated with learner autonomy with the aim of getting specific answers from the students about their autonomy levels. The sub-questions under question 6 were whether the participants thought technology had helped them to be less dependent on the teacher, to identify their learning goals, to choose learning materials and activities, to evaluate their learning performances, to plan their English studies, and to use learning strategies. Part III included three questions that aimed to reveal students' suggestions and final thoughts related to technology use in learning

English. Question 12 aimed to get the participants' suggestions to improve the CALL treatment. Question 13 asked whether the participants would continue to use technology with the aim of improving their English. Finally, question 14 asked about the participants' additional thoughts, comments and suggestions related to the use of technology in learning English.

3.5.3 Reliability and validity concerns

The reliability of the second part of the questionnaire had been checked by Balçıkanlı (2006) in his study, and the Cronbach's alpha value for it was reported to be 0.87, which shows that the survey had a high level of reliability (Balçıkanlı, 2006). In the present study, the scale was used in the same form as it was used in the study by Balçıkanlı (2006) without making any changes on it.

In addition, the whole questionnaire was piloted before its actual administration in order to identify any problems related to its content or language. Although the reliability of the Part II of the questionnaire had been checked by Balçıkanlı (2006), Part I and Part III were designed for the present study by the researcher, therefore, it was essential to pilot these two parts before the actual administration of the questionnaire. In addition, all three parts of the questionnaire were administered in English. Hence, the piloting stage was also used to determine if the participants would be able to understand and fill out the questionnaire without any comprehension problems. To this end, the whole questionnaire was given to five students who were not in the experimental or the control groups before it was implemented with the actual participants. These five students were also at intermediate level and studying in an ELT-ELL preparatory class in the same school. They were asked to complete the questionnaire and take notes on the parts they had difficulty in understanding or completing. At the end of the session, they shared their comments with the researcher. According to the feedback from the students, some minor changes were made in the wording of the open-ended questions in the third part. The students stated that they were able to understand all the questions in the first and second parts of the questionnaire. Therefore, no other changes were made in these parts.

In order to enhance its validity, triangulation was employed in the current study. That is, both quantitative and qualitative data were collected by using two different instruments, the questionnaire and semi-structured interviews. Triangulation is a recommended practice to achieve validity in research studies as it could assist to interpret the case, phenomenon or the context that is being studies in an accurate way (Mackey & Gass, 2005).

For the semi-structured interviews, purposive sampling was used, and the participants were selected through maximum variation sampling, which is viewed as contributing to the validity of research by making the findings more generalizable (Dörnyei, 2007).

Finally, with the aim of supporting the validity and reliability of the study in the data analysis process, 10% of the qualitative data were analysed by another researcher from the field of foreign language education in order to achieve intercoder reliability.

3.5.4 Normality analysis of the quantitative data

After the quantitative data were collected, in order to understand whether the data gathered through the pre- and post-questionnaires in the experimental and the control group had normal distribution, a Shapiro-Wilk test was run on each of the data set. Table 3.9 demonstrates the results of the tests.

Table 3.9

The Results of the Shapiro-Wilk Normality Tests

	Shapiro-Wilk Test		
	Statistic	**df**	**Sig.**
Experimental Group Pre-Questionnaire	.983	25	.934
Experimental Group Post-Questionnaire	.965	25	.521
Control Group Pre-Questionnaire	.959	25	.386
Control Group Post-Questionnaire	.961	25	.435

The results of the Shapiro-Wilk test showed that the data in the pre-questionnaire and the post-questionnaire of the experimental group were normally distributed with a p-value of 0.934 and of 0.521 respectively ($p > 0.05$). Similarly, the control group data were normally distributed both in the pre-questionnaire, which had a p-value of 0.386, and in the post-questionnaire, which had a p-value of 0.435 ($p > 0.05$).

To sum up, the normality analysis showed that all four sets of data had a normal distribution with each of them having a p-value lower than 0.05. Therefore, the normality assumption was confirmed.

3.6 Data collection procedure

The present study was conducted during 2016-2017 academic year. The data collection period lasted 10 weeks, which included the seven-week experimental treatment.

Before starting the data collection and the experimental treatment, the researcher obtained the permission of Middle East Technical University Human Subjects Ethics Committee for conducting the study (Appendix A). Following that, the administration of the school which was the setting of the study was contacted to get their approval for the study. Once their approval was received, the data collection and the experimental treatment procedures started.

As the first stage of the data collection procedure, the pre-questionnaire was administered in the four classes that would be in the experimental and the control groups of the study. Following the administration of the pre-questionnaire, an introduction to the CALL implementation was presented by the researcher in the two classes which would be the experimental group of the study. The administration of the questionnaire in all four classes and the introduction to the study in the two classes was conducted by the researcher in different class hours on the same day. Firstly, the students in the four classes were distributed an informed consent form in order to identify the voluntary participants of the study. The consent form in the experimental group (Appendix G) informed the participants about the procedures of data collection and about the CALL implementation. The form indicated that filling out the questionnaires and participating in the CALL implementation and in the interviews

were completely voluntary and that they would be free to stop taking part in the study whenever they wanted. They were also informed that the answers they gave and their performances in the CALL implementation would not have any effect on their grades in their preparatory school studies. The consent form distributed in the control group classes (Appendix H) was the same except that it did not include the information about the CALL treatment.

After the consent forms were collected from the students and the participants of the study were identified, the students who volunteered for the study were given the pre-questionnaire. Since the questionnaire was administered in different class hours in the four classes, while the participants were filling out the questionnaire, the researcher was available in the room in case the participants would ask questions or have problems related to the questionnaire. The questionnaire took approximately 15 minutes in the control group classes, while it took around 25 minutes to complete in the experimental group classes as they also completed the open-ended questions part.

In the experimental group classes, following the completion of the pre-questionnaire, the participants were introduced to the procedure of the CALL implementation by the researcher. The researcher explained that starting from the following week, they were going to have a one-hour technology session every week in class for seven weeks as it was stated in the consent form. The participants were informed about the schedule of the weekly sessions and were told that they would be expected to use the tools presented in that week's session and then complete a reflection form. The reflection form was presented to the students in detail. Next, *Edmodo* was introduced to the students. The researcher informed the students on how to register for *Edmodo* and how to use the website. An online class group for each of the experimental group classes was created on *Edmodo,* and the participants enrolled in those groups. During the introductory sessions in the experimental group, the students were encouraged to ask any questions they had about the CALL treatment, and the researcher tried to clarify all the details about the procedure for the students.

In the week following the implementation of the pre-questionnaire, the experimental treatment started in the experimental group, and it continued for seven weeks.

Following the completion of the CALL treatment, the participants in both the experimental group and the control group were given the post-questionnaire. The questionnaire was administered by the researcher in different class hours on the same day. The researcher made sure that the students were able to understand all the instructions and items in the questionnaire by answering students' questions and clarifying all the points for them. The questionnaire took around 15 minutes in the control group classes to complete and approximately 25 minutes in the experimental group classes as there were additional open-ended questions in the experimental group's questionnaire.

After the administration of the post-questionnaire, the data collected through the pre- and post- questionnaires were entered into the statistics program SPSS. For the experimental group, the mean scores of the participants from pre- and post-questionnaires were calculated and compared, and the participants for the semi-structured interviews were chosen accordingly. That is, the difference between the pre- and post-questionnaire mean scores of the participants were ranked, and nine participants were chosen according to the difference in their mean scores.

The students chosen as the participants were invited to take part in the interviews. They were informed about the structure of the interview and reminded that participation would be on a voluntary basis. All nine students accepted to be interview participants. The interview schedule was arranged based on the class programs of the participants and the researcher.

All the interviews were conducted face-to-face in the week following the administration of the post-questionnaire. For the interviews, a room at the school building was arranged by the researcher beforehand. The interviews were conducted in Turkish to encourage the participants to give detailed answers to the questions. Since the participants were intermediate-level learners of English, it was assumed that they would have difficulty in expressing themselves in a comfortable way in an English-medium oral interview. The participants were interviewed one by one. Each of the interviews were audio-recorded using the mobile phone of the researcher.

3.7 Data analysis methods

In the present study, both quantitative and qualitative data were collected and analysed. The quantitative data, which were collected through pre- and post-questionnaires, were analysed on the statistics program SPSS, version 22.0. For the Likert-scale items in the second part of the questionnaire, the options were assigned the following numerical values: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. Next, the data were analysed to determine if it had normal distribution by running Shapiro-Wilk normality test. Following that, descriptive analyses were performed, and the mean scores and standard deviations for each group in the second part of both the pre- and post-questionnaire as well as the difference between the pre- and post-questionnaire scores for each group were calculated. Independent-samples t-tests were conducted in order to compare the groups in terms of their pre-questionnaire scores, post-questionnaire scores, and the differences between their pre- and post-questionnaire scores. In addition, in order to investigate the change in the autonomy levels of each group during the experimental treatment, the pre- and post-questionnaire scores were compared within each group by running paired-samples t-tests.

The qualitative data were collected from the experimental group through open-ended questions in the pre- and post-questionnaires and semi-structured interviews. The data collected via the interviews were first transcribed and then translated into English. Next, the data analysis began. MAXQDA, version 10, was used in the data analysis process. In the analysis of the data both from the open-ended questions and the interviews, constant comparative method, which is a qualitative data analysis method introduced by Glaser and Strauss (1967), was used. Maykut and Morehouse (1994) defined constant comparative method as:

> A method of analysing qualitative data which combines inductive category coding with a simultaneous comparison of all units of meaning obtained. As each unit of meaning is selected for analysis, it is compared to all other units of meaning and subsequently grouped (categorized and coded) with similar units of meaning. If there are no similar units of meaning, a new category is formed. In this process, there is room for continuous refinement; initial categories are changed, merged, or omitted; new categories are generated; and new relationships can be discovered. (p. 134)

To analyse the data, first, the data were read carefully to get an initial understanding, and some memos were recorded. Next, descriptive codes were formed to label excerpts of data by comparing the excerpts with the other parts and previously formed codes. When a new meaning or idea emerged from the data, a new code was formed. Following the coding process, similar codes were grouped under categories. Finally, based on the categories that were formed, themes were constructed (See Appendix I for a sample of the coded data). In order to establish intercoder reliability, one other researcher from the field of English Language Teaching coded 10% of the qualitative data. The codes formed by both researchers were compared, and both coders agreed on the coding.

CHAPTER 4

FINDINGS

4.0 Introduction

This chapter first presents the findings from the analysis conducted on the quantitative data, which were collected through the questionnaire. Next, the findings from the analysis of the qualitative data gathered by the use of the open-ended questions in the questionnaire and the semi-structured interviews are reported. The findings relevant to each research question and their sub-questions are presented in separate sections.

4.1 Findings on research question 1: How does the CALL implementation affect the self-perceived autonomy levels of EFL learners studying in higher education?

In order to investigate the answer to the first research question, the second part of the questionnaire, which consisted of Likert-scale items that aimed to measure the participants' self-perceived autonomy levels, was administered in the experimental and the control groups both before and after the experimental treatment. With the aim of comparing the scores on each administration of the questionnaire, descriptive statistics were run on the sets of data in order to calculate the mean scores and standard deviations each group had in the second parts of the pre- and post-questionnaires. Following that, the between-groups and within-group differences in the mean scores were calculated in order to understand whether the groups had experienced any changes in their autonomy levels at the end of the CALL intervention. The means and standard deviations of the two groups in Part II of the pre-questionnaire, post-questionnaire and the difference between the scores of two questionnaires for each group are presented in Table 4.1.

Table 4.1

Means and Standard Deviations of Part II of the Questionnaire

	Pre-Questionnaire		**Post-Questionnaire**		**Difference**	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Experimental (n = 25)	3.8550	.47561	4.0057	.30013	.1507	.28689
Control (n = 25)	3.7682	.44027	3.6560	.53978	-.1122	.59409

As demonstrated in Table 4.1, the means of the experimental group and the control group were close to each other in Part II of the pre-questionnaire. In Part II of the post-questionnaire, a greater difference was observed between the mean scores of the experimental and the control groups, whose mean scores in this part were 4.0057 and 3.6560 respectively. Surprisingly, there was a decrease (M = 0.1122) in the mean autonomy level of the control group in Part II of the post-questionnaire.

These results suggest that after the CALL treatment was implemented, the experimental group had a higher level of learner autonomy than the control group based on the perceptions of the students. However, in order to understand if the results were statistically significant, significance tests were conducted on the data, whose results are presented in the following sections.

4.1.1 Between-groups differences in part II of the pre-questionnaire

The scores in the second part of the pre-questionnaire of the experimental group (M = 3.8550) and the control group (M = 3.7682) were compared in order to investigate whether there was a statistically significant difference between the groups before the CALL treatment. With that aim, an independent-samples t-test was performed to compare the mean scores each group had in the pre-questionnaire. When the t-test was conducted, the results of the Levene's Test for Equality of Variances showed that the variances for the pre-questionnaire scores for the experimental and the control groups

were equal (p = 0.531 > 0.05). Therefore, the t-test's results were interpreted by assuming equal variances. These results are reported in Table 4.2.

Table 4.2

Between-Groups Differences in Part II of the Pre-Questionnaire According to Independent-Samples T-Test

				Levene's Test for Equality of Variances		**t-test for Equality of Means**		
Group	**Mean**	**SD**		**F**	**Sig.**	**t**	**df**	**Sig. (2-tailed)**
Experimental (n = 25)	3.8550	.47561	Equal variances assumed	.399	.531	.670	48	.506
Control (n = 25)	3.7682	.44027						

As demonstrated in Table 4.2 above, according to the results of the independent-samples t-test, there was not a significant difference between the mean scores of the groups in Part II of the pre-questionnaire; t (48) = 0.670, p = 0.506 > 0.05. These results suggest that the experimental and the control groups were similar to each other in terms of the self-perceived autonomy levels of the participants prior to the experimental CALL treatment.

The mean scores for the 15 items in the second part of the questionnaire were also individually compared in order to explore the between-groups differences. With that aim, an independent-samples t-test was conducted on each of the 15 items. Before interpreting the results of the independent-samples t-test, whether the data had equal variances or not was checked. The results of the Levene's Test for Equality of Variances showed that, for each of the items in the questionnaire, the data had equal variances. Therefore, the results of the independent-samples t-test were interpreted by assuming equal variances for all the items. These results are reported in Table 4.3.

Table 4.3

Between-Groups Differences in the Individual Items in Part II of the Pre-Questionnaire According to Independent-Samples T-Test

(experimental group n = 25, control group n = 25)

Item No	Statement	Group	Mean	SD	t-test			
					t	df	Sig. (2-tailed)	Effect size[a]
1	I want to learn more than I am required with all my efforts.	Exp.	4.60	.645	.436	48	.665	-
		Cont.	4.52	.653				
2	I follow my progress while learning English.	Exp.	4.00	.913	.795	48	.431	-
		Cont.	3.80	.866				
3	I like projects and activities where I can work on my own.	Exp.	3.88	.881	-.290	48	.773	-
		Cont.	3.96	1.060				
4	I can learn English grammar on my own/without needing a teacher.	Exp.	2.80	1.041	-.655	48	.516	-
		Cont.	3.00	1.118				
5	I deduce the meaning of a word by identifying the prefix and suffix of the word.	Exp.	3.60	.866	-1.545	48	.129	-
		Cont.	3.96	.751				
6	I can identify and select the additional materials to support the subjects I study.	Exp.	3.52	.872	-.504	48	.616	-
		Cont.	3.64	.810				
7	I can evaluate myself in terms of my assignments and projects.	Exp.	4.04	.735	.862	48	.393	-
		Cont.	3.84	.898				
8	I like to actively participate in the course.	Exp.	3.96	.889	.153	48	.879	-
		Cont.	3.92	.954				
9	I have several strategies to understand and remember English grammar.	Exp.	4.08	.909	2.174	48	.035*	.090
		Cont.	3.44	1.158				
10	I can learn a topic by studying on my own if I cannot learn it in the classroom.	Exp.	3.96	.841	.886	48	.380	-
		Cont.	3.72	1.061				

Table 4.3

Between-Groups Differences in the Individual Items in Part II of the Pre-Questionnaire According to Independent-Samples T-Test (continued)

(experimental group n = 25, control group n = 25)

Item No	Statement	Group	Mean	SD	t-test			
					t	df	Sig. (2-tailed)	Effect size[a]
11	I am aware of my learning strategies.	Exp. Cont.	4.08 3.88	.974 .927	.748	48	.458	-
12	I have some games to keep the words I learn in my mind.	Exp. Cont.	2.88 2.80	1.424 1.258	.211	48	.834	-
13	I am responsible for my own learning.	Exp. Cont.	4.56 4.16	.583 .850	1.940	48	.058	-
14	I like my way of studying English.	Exp. Cont.	3.96 4.12	.841 .666	-.746	48	.459	-
15	I know how to study English by myself.	Exp. Cont.	3.92 3.80	.954 1.000	.434	48	.666	-

* $p < .05$.
[a] Eta squared.

As demonstrated in Table 4.3, the results of the t-test conducted on the individual items show that there were not significant differences between groups in Part II of the pre-questionnaire in any of the items except for item 9. In item 9, the experimental group (M = 4.08) scored significantly higher than the control group (M = 3.44); t (48) = 2.174, p = 0.035, and the effect size for this item was 0.09 (eta squared). In items 2, 5, 6, 11, 12 and 14, the experimental group scored slightly higher than the control group, however, none of these differences were statistically significant. For items 1, 3, 4, 7, 8, 9, 10, 13 and 15, the control group had slightly higher scores than the control group, but these differences were also not statistically meaningful.

To sum up, the independent samples t-test analysis of the between-groups differences in individual items in Part II of the pre-questionnaire supported the findings from the comparison of the overall scores for this part by confirming that the two groups did

not have statistically significant differences in terms of the scores in Part II of the pre-questionnaire. Therefore, they were similar to each other in terms of their self-perceived autonomy levels before the CALL treatment period. Having said that, the difference in item 9 and the other minor differences were taken into consideration while evaluating the post-questionnaire scores of the groups for this part in the following stages of analysis in order to reach an accurate conclusion.

4.1.2 Within-group differences in part II of the questionnaire for the control group

The descriptive statistics showed that there was a decrease in the post-questionnaire score of the control group for Part II of the questionnaire (M = 3.6560) compared to the pre-questionnaire score for that part (M = 3.7682). In order to understand whether the decrease was a statistically significant one, in other words, whether there was a statistically significant difference within the group, a paired-samples t-test was conducted. The mean scores of the group from the pre- and post-questionnaire were entered as the variables, and the two mean scores were compared. Table 4.4 presents the results from the test.

Table 4.4

Within-Group Differences in Part II of the Questionnaire According to Paired-Samples T-Test for the Control Group

			Paired Differences				
	Mean	**SD**	**Mean**	**SD**	**t**	**df**	**Sig. (2-tailed)**
Pre-questionnaire (n = 25)	3.7682	.44027	.11219	.59409	.944	24	.354
Post-questionnaire (n = 25)	3.6560	.53978					

The results of the paired-samples t-test demonstrated that there was not a statistically significant difference within the control group in Part II of the questionnaire, t (24) = 0.944, p = 0.354 > 0.05. In other words, the autonomy levels of the control group at the beginning and at the end of the seven-week CALL treatment that was received by the experimental group did not differ significantly. These results suggest that the seven-week time period on its own did not have a significant effect on the autonomy levels of the participants. Therefore, any changes in the autonomy levels of the experimental group can be interpreted by eliminating the effects of the time factor.

4.1.3 Within-group differences in part II of the questionnaire for the experimental group

In order to understand the effect of the CALL treatment on the self-perceived autonomy levels of the participants in the experimental group, the within-group differences were analysed. With that aim, a paired-samples t-test was performed by following the same procedure that was carried out on the control group data. That is, the mean scores of the experimental group from the pre- and post-questionnaire were entered as the variables, and the t-test was conducted to compare the two mean scores. The results of the t-test are reported in Table 4.5.

Table 4.5

Within-Group Differences in Part II of the Questionnaire According to Paired-Samples T-Test for the Experimental Group

			Paired Differences					
	Mean	**SD**	**Mean**	**SD**	**t**	**df**	**Sig. (2-tailed)**	**Effect size[a]**
Pre-questionnaire (n = 25)	3.8550	.47561	-.15067	.28689	-2.626	24	.015*	.223
Post-questionnaire (n = 25)	4.0057	.30013						

* p < .05.
[a] Eta squared.

As demonstrated in Table 4.5, the paired-samples t-test results showed that there was a significant difference between the mean pre- and post-questionnaire scores of the experimental group in the second part of the questionnaire; $t(24) = -2.626$, $p = 0.015 < 0.05$. In other words, the mean score of the experimental group in the second part of the post-questionnaire ($M = 4.0057$) was significantly greater than its mean score in the second part of the pre-questionnaire ($M = 3.8550$). In addition, the effect size for the result was large (eta squared = 0.223).

These findings suggest that the mean self-perceived autonomy level of the experimental group at the end of the seven-week CALL treatment was significantly higher than its mean autonomy level before the CALL treatment. When it is considered that there was not a statistically significant difference within the control group, it can be said that the measured increase in the autonomy level of the experimental group was a result of the CALL treatment it received during the study. In other words, the CALL treatment had an effect on the mean autonomy level of the experimental group.

In addition to the comparison of the overall mean scores the experimental group had in the second parts of the pre- and post-questionnaires, the mean scores for each item in Part II of the questionnaire were also compared. That is, for each of the 15 items in the second part of the questionnaire, the within-group differences were analysed by running a paired-samples t-test for each item.

For most of the items in Part II of the questionnaire, there was an increase in the post-questionnaire scores of the experimental group compared to the pre-questionnaire scores. That is, the experimental group had a greater mean score for 10 out of the 15 items in the post-questionnaire than in the pre-questionnaire. These results suggest that there was a within-group increase in the autonomy level of the experimental group in terms of those 10 items based on the participants' perceptions. The results of the t-test for each item are presented in Table 4.6.

Table 4.6

Within-Group Differences in the Individual Items in Part II of the Questionnaire According to Paired-Samples T-Test for the Experimental Group

(n = 25)										
Item No	**Statements**		**Mean**	**SD**	**Paired Differences**		**t**	**df**	**Sig. (2-tailed)**	**Effect size[a]**
					Mean	**SD**				
1	I want to learn more than I am required with all my efforts.	Pre Post	4.60 4.76	.645 .523	-.160	.746	-1.072	24	.294	-
2	I follow my progress while learning English.	Pre Post	4.00 3.88	.913 .666	.120	.781	.768	24	.450	-
3	I like projects and activities where I can work on my own.	Pre Post	3.83 3.88	.868 .797	-.042	.955	-.214	24	.833	-
4	I can learn English grammar on my own/without needing a teacher.	Pre Post	2.80 3.12	1.041 1.092	-.320	.852	-1.877	24	.073	-
5	I deduce the meaning of a word by identifying the prefix and suffix of the word.	Pre Post	3.60 3.48	.866 .653	.120	.781	.768	24	.450	-
6	I can identify and select the additional materials to support the subjects I study.	Pre Post	3.52 3.92	.872 .640	-.400	.816	-2.449	24	.022*	.200

Table 4.6

Within-Group Differences in the Individual Items in Part II of the Questionnaire According to Paired-Samples T-Test for the Experimental Group (continued)

(n = 25)										
Item No	**Statements**		**Mean**	**SD**	**Paired Differences**		**t**	**df**	**Sig. (2-tailed)**	**Effect size[a]**
					Mean	**SD**				
7	I can evaluate myself in terms of my assignments and projects.	Pre	4.04	.735	-.240	.926	-1.297	24	.207	-
		Post	4.28	.737						
8	I like to actively participate in the course.	Pre	3.96	.889	.000	.957	.000	24	1.000	-
		Post	3.96	.978						
9	I have several strategies to understand and remember English grammar.	Pre	4.08	.909	.200	.913	1.095	24	.284	-
		Post	3.88	1.166						
10	I can learn a topic by studying on my own if I cannot learn it in the classroom.	Pre	3.96	.841	-.240	.597	-2.009	24	.056	-
		Post	4.20	.645						
11	I am aware of my learning strategies.	Pre	4.08	.974	-.292	.806	-1.772	24	.090	-
		Post	4.38	.711						
12	I have some games to keep the words I learn in my mind.	Pre	2.88	1.424	-.480	.918	-2.613	24	.015*	.221
		Post	3.36	.995						
13	I am responsible for my own learning.	Pre	4.56	.583	.080	.572	.700	24	.491	-
		Post	4.48	.714						

Table 4.6

Within-Group Differences in the Individual Items in Part II of the Questionnaire According to Paired-Samples T-Test for the Experimental Group (continued)

(n = 25)										
Item No	**Statements**		**Mean**	**SD**	**Paired Differences**		**t**	**df**	**Sig. (2-tailed)**	**Effect size[a]**
					Mean	**SD**				
14	I like my way of studying English.	Pre	3.96	.841	-.240	.723	-1.659	24	.110	-
		Post	4.20	.645						
15	I know how to study English by myself.	Pre	3.92	.954	-.400	1.041	-1.922	24	.067	-
		Post	4.32	.557						

* $p < .05$.
[a] Eta squared.

As demonstrated in Table 4.6, for most of the items in Part II of the questionnaire, there was an increase in the post-questionnaire scores of the group compared to the pre-questionnaire scores. That is, the experimental group had a greater mean score for 10 out of the 15 items in the post-questionnaire than in the pre-questionnaire. These results suggest that there was a within-group increase in the autonomy level in terms of those 10 items based on the participants' perceptions.

The greatest increase was in the post-questionnaire score for item 12, which asked if the participants had any games to use to remember and revise vocabulary. While the mean score for this item in the pre-questionnaire was 2.88, the post-questionnaire score was 3.36, and the t-test results showed that there was a statistically significant difference between the two scores; $t(24) = -2.613$, $p = 0.015 < 0.05$. The effect size for this item was large (eta squared = 0.221). The results suggest that the participants had more vocabulary games at the end of the treatment period than they did at the beginning. This finding can be linked to the effect of the online tools students were presented during the CALL treatment, which included vocabulary games.

Item 6 also had a significant difference within the group. The statement in this item was “I can identify and select the additional materials to support the subjects I study.” There was a meaningful difference between the scores the experimental group got for this item in the pre-questionnaire (M = 3.52) and in the post-questionnaire (M = 3.92); t (24) = -2.449, p = 0.022 < 0.05. According to this result, there was a meaningful increase in the perceived autonomy levels of the participants in terms of their abilities to choose materials to make use of in their studies. The effect size was also large (eta squared = 0.200). The findings can be attributed to the fact that, during the CALL treatment, the participants were presented various online tools through which they could find materials to use in their individual studies. The increase in the score for item 6 suggests that the CALL treatment was effective in helping the learners to find and choose study materials.

In addition to the items which had significant differences within the group, there were other items that had increases in their post-questionnaire scores. Although these increases did not have statistically significant values, they contribute to understanding the change in the perceived autonomy levels of the participants. To illustrate, item 15, which had the statement “I know how to study English by myself”, had a mean score of 3.92 in the pre-questionnaire, while the mean score for it in the post questionnaire was 4.32. This suggests that the CALL treatment, which focused on out-of-class study of the students, had an effect on the perceived self-study skills of the participants. Similarly, item 4 focused on students’ self-study skills. The mean score for this item changed from 2.80 in the pre-questionnaire to 3.12 in the post-questionnaire. Items 7, 10, 11 and 14 also had acknowledgeable increases in their post-questionnaire scores, which confirm the effect of the CALL treatment on the participants’ self-perceived autonomy levels.

On the other hand, there were some items the scores of which underwent decreases in the post-questionnaire. Although none of these decreases were statistically significant, their interpretation could contribute to the results. For item 9, which asked about the strategies students had to learn grammar, the mean value in the pre-questionnaire was 4.08 while its mean value in the post-questionnaire was 3.88. Although the two scores

were not low compared to the overall mean scores of the group, the decrease suggests that the CALL treatment did not improve the self-perceived strategy uses of the participants to study grammar. Item 2 had the statement “I follow my progress while learning English”, and the group scored lower in the post-questionnaire (M = 3.88) than in the pre-questionnaire (M = 4.00). According to this finding, the participants did not perceive an improvement in their abilities to monitor their progress in their learning. Similarly, item 5, which asked about students’ abilities to deduce the meanings of words had a lower score in the post-questionnaire (M = 3.48) than in the pre-questionnaire (M = 3.60).

To sum up, the comparison of the pre- and post-questionnaire scores of the experimental group in Part II of the questionnaire revealed that there was a statistically significant within-group difference in the overall mean scores of the group. This suggests that the CALL treatment enhanced the self-perceived autonomy levels of the participants. This finding is supported by the item-by-item analysis of within-group differences as there was an increase in the post-questionnaire scores of most of the items in Part II of the questionnaire compared to the pre-questionnaire values.

4.1.4 Between-groups differences in part II of the post-questionnaire

In section 4.1.1, the results of the independent-samples t-test conducted on the mean pre-questionnaire scores for the second part of the questionnaire of the experimental group (M = 3.8550) and the control group (M = 3.7682) were reported, and no significant difference was found between the groups; $t(48) = 0.670$, $p = 0.506 > 0.05$. In order to investigate the effects of the CALL treatment on the experimental group, the between-groups differences in the autonomy levels of the two groups at the end of the CALL treatment period were compared. In the second part of the post-questionnaire, the experimental group had a higher mean overall score (M = 4.006) than the control group (M = 3.656). In order to determine whether there was a statistically significant difference between the groups, the same procedure that was followed for the comparison of the pre-questionnaire scores of the groups was adopted. An independent-samples t-test was performed to analyse the between-groups differences. According to the results of the Levene’s Test for Equality of Variances,

the scores of the groups in Part II of the post-questionnaire did not have equal variances ($p = 0.003 < 0.05$). Thus, the t-test results were interpreted without assuming equal variances. The results of the test are presented in Table 4.7.

Table 4.7

Between-Groups Differences in Part II of the Post-Questionnaire According to Independent-Samples T-Test

				Levene's Test for Equality of Variances		**t-test for Equality of Means**			
Group	**Mean**	**SD**		**F**	**Sig.**	**t**	**df**	**Sig. (2-tailed)**	**Effect size[a]**
Experimental (n = 25)	4.006	.300	Equal variances not assumed	9.504	.003	2.831	37.545	.007*	.143
Control (n = 25)	3.656	.540							

* $p < .05$.
[a] Eta squared.

As demonstrated in Table 4.7, the t-test results showed that the overall mean score of the experimental group in Part II of the post-questionnaire was significantly greater than that of the control group, in other words, there was a statistically significant difference between the groups in Part II of the post-questionnaire; $t (37.545) = 2.831$, $p = 0.007 < 0.05$. The magnitude of this difference was large (eta squared = 0.143). These results suggest that the self-perceived autonomy level of the experimental group was significantly higher than that of the control group after the CALL treatment. Given the fact that the pre-questionnaire mean scores of the two groups for the second part were not significantly different from each other, the results of the two independent samples t-tests altogether confirm that the seven-week CALL treatment increased the self-perceived autonomy level of the experimental group and made the group

significantly more autonomous compared to the control group based on the participants' perceptions.

Following the comparison of the overall mean scores, the between-group differences were also analysed for each of the 15 items in Part II of the post-questionnaire. Therefore, the mean scores the groups had for each item were compared separately by running an independent-samples t-test. The results of the t-test are presented in Table 4.8. For each item, whether or not the data had equal variances was identified by using the results of the Levene's Test for Equality of Variances, and the values were added to Table 4.8 accordingly. Therefore, the t-test results in Table 4.8 are reported based on the assumptions of the Levene's Test for Equality of Variances.

Table 4.8

Between-Groups Differences in the Individual Items in Part II of the Post-Questionnaire According to Independent-Samples T-Test

(experimental group n = 25, control group n = 25)

					t-test			
Item No	**Statement**	**Group**	**Mean**	**SD**	**t**	**df**	**Sig. (2-tailed)**	**Effect size[a]**
1	I want to learn more than I am required with all my efforts.	Exp.	4.76	.523	1.582	43.9	.121	-
		Cont.	4.48	.714				
2	I follow my progress while learning English.	Exp.	3.88	.666	1.282	48	.206	-
		Cont.	3.60	.866				
3	I like projects and activities where I can work on my own.	Exp.	3.88	.797	-.560	47	.578	-
		Cont.	4.00	.764				
4	I can learn English grammar on my own/without needing a teacher.	Exp.	3.12	1.092	.250	48	.804	-
		Cont.	3.04	1.172				
5	I deduce the meaning of a word by identifying the prefix and suffix of the word.	Exp.	3.48	.653	-.325	40.3	.747	-
		Cont.	3.56	1.044				

Table 4.8

Between-Groups Differences in the Individual Items in Part II of the Post-Questionnaire According to Independent-Samples T-Test (continued)

(experimental group n = 25, control group n = 25)

Item No	Statement	Group	Mean	SD	t-test t	df	Sig. (2-tailed)	Effect size[a]
6	I can identify and select the additional materials to support the subjects I study.	Exp.	3.92	.640	1.169	48	.248	-
		Cont.	3.68	.802				
7	I can evaluate myself in terms of my assignments and projects.	Exp.	4.28	.737	2.825	48	.007*	.143
		Cont.	3.64	.860				
8	I like to actively participate in the course.	Exp.	3.96	.978	1.053	48	.297	-
		Cont.	3.68	.900				
9	I have several strategies to understand and remember English grammar.	Exp.	3.88	1.166	1.339	48	.187	-
		Cont.	3.44	1.158				
10	I can learn a topic by studying on my own if I cannot learn it in the classroom.	Exp.	4.20	.645	3.390	43.108	.002*	.193
		Cont.	3.44	.917				
11	I am aware of my learning strategies.	Exp.	4.36	.700	3.270	48	.002*	.182
		Cont.	3.56	1.003				
12	I have some games to keep the words I learn in my mind.	Exp.	3.36	.995	.744	48	.460	-
		Cont.	3.12	1.269				
13	I am responsible for my own learning.	Exp.	4.48	.714	1.492	48	.142	-
		Cont.	4.16	.800				
14	I like my way of studying English.	Exp.	4.20	.645	1.633	48	.109	-
		Cont.	3.80	1.041				
15	I know how to study English by myself.	Exp.	4.32	.557	2.660	34.659	.012*	.128
		Cont.	3.64	1.150				

* $p < .05$.

[a] Eta squared.

As illustrated in Table 4.8, in the majority of the items in the post-questionnaire, namely 13 out of 15 items, the experimental group had higher scores than the control group. Although not all of these were statistically significant differences, the results suggest that the experimental group was more autonomous than the control group at the end of the CALL treatment, based on the participants' perceptions.

The greatest difference between the groups was in item 11, which asked about the awareness of the participants of learning strategies. The mean post-questionnaire score of the experimental group for this item was 4.36, while the corresponding score of the control group was 3.56. There was a statistically significant difference between the two scores; $t(48) = 3.270$, $p = 0.002 < 0.05$, and the effect size was large (eta squared = 0.182). In other words, the experimental group perceived themselves as more aware of their learning strategies than the control group did at the end of the treatment period. Since there was not a significant difference between the pre-questionnaire scores of the experimental ($M = 4.08$) and the control ($M = 3.88$) groups for this item, as reported in section 4.1.1, the results suggest that the CALL treatment improved the experimental group's awareness of their learning strategies.

Another significant difference was in item 10, which had the statement "I can learn a topic by studying on my own if I cannot learn it in the classroom." There was a meaningful difference between the post-questionnaire scores of the experimental group ($M = 4.20$) and the control group ($M = 3.44$), $t(43.108) = 3.390$, $p = 0.002 < 0.05$. The magnitude of the difference was also large (eta squared = 0.193). As there was not a significant difference between the pre-questionnaire scores of the experimental ($M = 3.96$) and the control ($M = 3.72$) groups for this item, the results suggest that, with the help of the experimental treatment, the experimental group perceived that they had better self-study abilities compared to the control group's perceptions.

Similarly, in item 15, which also asked about students' self-study skills, the groups had significantly different post-questionnaire scores. The experimental group had a mean score of 4.32, whereas the mean score of the control group was 3.64, and there was a meaningful difference between the two values; $t(34.659) = 2.660$, $p = 0.012 <$

0.05. The effect size was 0.128 (eta squared). These results suggest that the experimental group had higher perceptions of their abilities to study on their own than the control group. The fact that no significant difference was found between the groups in the pre-questionnaire (M (experimental) = 3.92, M (control) = 3.80) confirms the effect of the CALL treatment on the difference in the scores.

The final significant difference was in item 7, which explored the participants' perceptions on their self-evaluation skills. There was a meaningful difference between the post-questionnaire scores of the experimental group (M = 4.28) and the control group (M = 3.64); t (48) = 2.825, p = 0.007 < 0.05. The magnitude of the difference was large (eta squared = 0.143). As in the previously mentioned items, no significant difference was found between the pre-questionnaire scores for this item, therefore, these results support the fact that the CALL treatment had an effect on the self-perceived self-evaluation skills of the participants in the experimental group and they had higher perceptions of their self-evaluation skills compared to the control group after the CALL intervention.

In addition to the items in which there were significant differences between the post-questionnaire scores of the two groups, in items 1, 2, 4, 6, 8, 9, 12, 13 and 14, the experimental group scored higher than the control group in the post-questionnaire. Although they were not significant differences, they support that the experimental group had a higher level of self-perceived autonomy than the control group. On the other hand, it should be noted that in items 1, 2, 8, 9, 12 and 13, the experimental group had higher scores than the control group also in the pre-questionnaire. These differences were not statistically significant except for item 9. It can be said that the scores of the experimental group for these items were slightly higher than those of the control group when both pre- and post-questionnaire scores are taken into account.

Finally, there were two items in which the control group scored higher than the experimental group. In item 3, which was about students' preferences of individual study, the control group had a mean score of 4.00, while the experimental group's mean score was 3.88. Likewise, in item 5, which had the statement "I deduce the meaning of a word by identifying the prefix and suffix of the word", the control group

had a mean score of 3.56, whereas the experimental group's mean score was 3.48. Although neither of these differences were statistically meaningful, they suggest that the control group had higher perceptions than the experimental group in these aspects of autonomy. On the other hand, it should be noted that the pre-questionnaire scores of the control group were also higher than the corresponding scores of the experimental group, although they were not statistically significant differences.

All in all, the analysis of the between-groups differences in Part II of the post-questionnaire reveal that the experimental group had a higher level of self-perceived autonomy than the control group at the end of the experimental treatment. The comparison of the overall post-questionnaire scores highlighted that the difference was statistically significant, and the comparison of the scores for the individual items supported that finding. When it is considered that there was not a significant between-group difference in Part II of the pre-questionnaire, the findings suggest that the seven-week CALL intervention contributed to the increased self-perceived autonomy level of the experimental group.

4.1.5 Between-groups differences in terms of the gain scores in part II of the questionnaire

The comparisons made of the experimental and control groups in the previous sections suggested that the experimental group had a significantly higher level of self-perceived autonomy level at the end of the CALL intervention compared to its autonomy level prior to the intervention, and also the autonomy level of the experimental group was significantly higher than that of the control group after the CALL treatment, based on the participants' perceptions. In addition to these analyses, a final comparison was made between the groups to investigate the difference between the changes each group experienced from the pre-questionnaire to the post-questionnaire. To make this comparison, for Part II of the questionnaire, the mean pre-questionnaire scores of each group were subtracted from the mean post-questionnaire scores, and in this way, the gain score for each group was obtained. Following these calculations, an independent-samples t-test was conducted to compare the gain score each group had. The results of the Levene's Test for Equality of Variances showed that the data did not have equal

variances (F = 16.364, p = 0.000 < 0.05), therefore the results of the t-test were interpreted accordingly. Table 4.9 illustrates the results obtained from the t-test.

Table 4.9

Between-Groups Differences in terms of the Gain Scores in Part II of the Questionnaire According to Independent-Samples T-Test

				Levene's Test for Equality of Variances		**t-test for Equality of Means**		
Group	**Mean Gain Score**	**SD**		**F**	**Sig.**	**t**	**df**	**Sig. (2-tailed)**
Experimental (n = 25)	.1507	.286	Equal variances not assumed	16.364	.000	1.992	34.616	.054
Control (n = 25)	-.1122	.594						

As reported in Table 4.9, the gain score of the experimental group was found to be 0.1507. On the other hand, the gain score of the control group was -0.1122. These results show that while the experimental group experienced an increase in its mean post-questionnaire score compared to the pre-questionnaire score in the second part of the questionnaire, the control group scored lower in the post-questionnaire than in the pre-questionnaire. On the other hand, the t-test results revealed that there was not a statistically significant between-groups difference in the gain scores; t (34.616) = 1.992, p = 0.054. In other words, the difference between the change in the autonomy level of the experimental group and that of the control group was not statistically meaningful.

In addition, the gain scores of the groups for each item in the second part of the questionnaire were also compared individually. To do that, the same procedure adopted in the comparison of the overall gain scores was followed. Firstly, for each group, the gain score for each item was obtained by subtracting the pre-questionnaire

score from the post-questionnaire score. Next, an independent samples t-test was performed to compare the gain scores of the two groups for each item. The results of the Levene's Test for Equality of Variances for each item were used to understand whether the data had equal variances or not, and the t-test results were interpreted accordingly. Table 4.10 demonstrates the results of the t-test.

Table 4.10

Between-Groups Differences in terms of the Gain Scores for the Individual Items in Part II of the Questionnaire According to Independent-Samples T-Test

(experimental group n = 25, control group n = 25)

					t-test				
Item No	**Statement**	**Group**	**Mean Gain Score**	**SD**	**t**	**df**	**Sig. (2-tailed)**	**Mean Differ.**	**Effect size[a]**
1	I want to learn more than I am required with all my efforts.	Exp.	.160	.746	.862	48	.393	.200	-
		Cont.	-.040	.888					
2	I follow my progress while learning English.	Exp.	-.120	.781	.315	48	.754	.080	-
		Cont.	-.200	1.000					
3	I like projects and activities where I can work on my own.	Exp.	.041	.954	.005	47	.996	.001	-
		Cont.	.040	1.306					
4	I can learn English grammar on my own/without needing a teacher.	Exp.	.320	.852	.817	48	.418	.280	-
		Cont.	.040	1.485					

Table 4.10

Between-Groups Differences in terms of the Gain Scores for the Individual Items in Part II of the Questionnaire According to Independent-Samples T-Test (continued)

(experimental group n = 25, control group n = 25)

Item No	Statement	Group	Mean Gain Score	SD	t-test t	df	Sig. (2-tailed)	Mean Differ.	Effect size[a]
5	I deduce the meaning of a word by identifying the prefix and suffix of the word.	Exp.	-.120	.781	1.108	37.67	.275	.338	-
		Cont.	-.458	1.284					
6	I can identify and select the additional materials to support the subjects I study.	Exp.	.400	.816	1.235	48	.223	.360	-
		Cont.	.040	1.206					
7	I can evaluate myself in terms of my assignments and projects.	Exp.	.240	.925	1.615	48	.113	.440	-
		Cont.	-.200	1.000					
8	I like to actively participate in the course.	Exp.	.000	.957	.732	43.58	.468	.240	-
		Cont.	-.240	1.331					
9	I have several strategies to understand and remember English grammar.	Exp.	-.200	.912	-.528	37.32	.600	-.200	-
		Cont.	.000	1.658					
10	I can learn a topic by studying on my own if I cannot learn it in the classroom.	Exp.	.240	.597	1.708	32.45	.097	.520	-
		Cont.	-.280	1.400					

Table 4.10

Between-Groups Differences in terms of the Gain Scores for the Individual Items in Part II of the Questionnaire According to Independent-Samples T-Test (continued)

(experimental group n = 25, control group n = 25)

Item No	Statement	Group	Mean Gain Score	SD	t-test t	df	Sig. (2-tailed)	Mean Differ.	Effect size[a]
11	I am aware of my learning strategies.	Exp.	.291	.806	2.202	47	.033*	.611	.092
		Cont.	-.320	1.107					
12	I have some games to keep the words I learn in my mind.	Exp.	.480	.918	.393	35.48	.697	.160	-
		Cont.	.320	1.819					
13	I am responsible for my own learning.	Exp.	-.080	.571	-.319	35.74	.752	-.080	-
		Cont.	.000	1.118					
14	I like my way of studying English.	Exp.	.240	.723	1.940	48	.058	.560	-
		Cont.	-.320	1.249					
15	I know how to study English by myself.	Exp.	.400	1.040	1.697	48	.096	.560	-
		Cont.	-.160	1.280					

* $p < .05$.

[a] Eta squared.

As Table 4.10 illustrates, the experimental group had an increase in its post-questionnaire scores for 10 out of 15 items in Part II of the questionnaire but had a decrease in 4 items. The control group had increased post-questionnaire scores in 4 items in this part, but it had decreases in 9 items. The comparison of the gain scores of the two groups reveal that in most of the items, the experimental group had greater gain scores than the control group.

The greatest between-groups difference in the gain scores was in item 11, which had the statement “I am aware of my learning strategies.” The gain score of the experimental group for this item was 0.291, while the corresponding score of the control group was -0.320, and there was a significant difference between these gain scores; $t(47) = 2.202$, $p = 0.033 < 0.05$. The effect size for this item was 0.092 (eta squared). These findings suggest that the experimental group had a significantly greater increase in their self-perceived awareness of their learning strategies during the seven-week treatment period compared to the control group. Therefore, it can be said that the CALL intervention made the learners in the experimental group more aware of the learning strategies, based on the perceptions of the participants.

In addition, there were items in the second part of the questionnaire in which the experimental group had higher gain scores than the control group, although they were not statistically significant differences. To illustrate, in item 14, which had the statement “I like my way of studying English,” the difference between the gain scores of the two groups was 0.56. Similarly, in items 10 and 15, both of which asked about the self-study skills of the students, the differences between the gain scores were 0.52 and 0.56 respectively. Although the differences between these gain scores were not statistically significant, they may support the findings that suggest that the experimental group became more autonomous based on the perceptions of the participants by the help of the CALL treatment it received.

On the other hand, there were some items in Part II of the questionnaire for which the experimental group had a negative gain score, in other words, had a lower score in the post-questionnaire than in the pre-questionnaire. In item 9, which had the statement “I have several strategies to understand and remember English grammar,” the gain score of the experimental group was -0.2. Similarly, the group had a negative gain score of -0.12 for items 2 and 5. The difference between the gain scores of the experimental group and the control group did not have a significant difference in any of these items, however, the findings may suggest that the CALL treatment did not have an effect to increase the self-perceived autonomy level of the experimental group in the aspects of autonomy these items focused on.

To conclude, the analysis of the between-groups differences based on the overall gain scores revealed that although the experimental group had a higher gain score than the control group, there was not a significant difference between the groups. The comparison of the gain scores for the individual questionnaire items showed that, in most of the items, the experimental group had a higher gain score than the control group although they were not statistically significant differences except for the difference for one item.

4.2 Findings on research question 2: What are the perceptions of EFL learners studying in higher education on the CALL implementation?

The second research question of the present study aimed to explore the perceptions of the participants towards the use of CALL to foster learner autonomy. Therefore, the perceptions of the participants in the experimental group regarding their experiences related to CALL were investigated. With that aim, two qualitative data collection instruments were utilized.

The first qualitative data collection instrument was the third part of the questionnaire, which aimed to gather the overall perceptions of the participants on the use of technology to learn English. It included open-ended questions and was administered both in the pre- and post-questionnaire of the experimental group (See Appendix E for the questionnaire). The data were gathered from the 25 participants in the experimental group. Since the same two open-ended questions were asked both in the pre- and post-questionnaire, it was possible to compare the perceptions of the participants in the two administrations of the questionnaire.

The second instrument was semi-structured interviews conducted with 9 participants from the experimental group (See Appendix F for the interview guide). The interviews aimed to collect in-depth data related to the perceptions of the participants on the CALL treatment. The participants were chosen based on their scores in the Learner Autonomy Questionnaire, which was the second part of the questionnaire. That is, when the differences between the pre- and post-questionnaire mean scores of the participants were calculated, the three participants with the largest increase in their

mean scores, three participants with an average increase, and three participants with a decrease were chosen as the interview participants. This selection procedure was followed with the aim of enriching the data collected in the interviews by getting the views participants who were affected by the CALL treatment in different ways. Accordingly, in the following sections where findings from the analysis of the interview data are reported, next to the excerpts, the information related to the participants' autonomy score is added.

While the data from the open-ended questions were already in English, those from the interviews were first transcribed and translated into English from Turkish. Next, the data gathered from the open-ended questions and the interviews were analysed by using constant comparative method (Glaser & Strauss, 1967). That is, the answers of the participants were read line by line and were coded according to the points they mentioned. Next, the codes were grouped under categories and themes. These themes, categories and codes that emerged from the analysis of the data are presented in the following sections.

4.2.1 Findings on research question 2a: What are the changes in the perceptions of the participants on the use of technology to learn English before and after the CALL implementation?

In order to reveal the perceptions of the participants in the experimental group related to technology implementation in learning English, two specific open-ended questions were asked in the questionnaire, which were the first two questions in Part III of the questionnaire. These two questions were kept constant and asked in both pre- and post-questionnaires in order to compare the perceptions of the participants on the use of technology to learn English prior to and following the CALL treatment. The first of these open-ended questions was "Do you think technology can help you in learning English? Why/Why not?" and the second question was "Do you feel comfortable while using technology to learn English? Why/Why not?"

Based on the analysis of the responses given by the participants to these open-ended questions, two main themes emerged which were parallel to the two questions enquired. These themes and the categories and codes related to them are presented in the following sections.

4.2.1.1 The perceptions of the participants on whether technology can be used to learn English before and after the CALL treatment

The first open-ended question in the third part of the questionnaire asked the participants in the experimental group if they thought technology could help them in learning English. Since the same question was asked both in the pre-questionnaire and the post-questionnaire, the data were analysed by comparing the codes emerged from the two applications of the questionnaire.

Both in the pre-questionnaire and the post-questionnaire, all of the participants in the experimental group responded to the first open-ended question by stating that they thought that technology could help them in learning English. The positive responses of the participants in the pre-questionnaire show that the students in the group had already had positive perceptions on the use of technology to learn English before they received the CALL treatment. The fact that they responded to the same question positively also in the post-questionnaire indicates that they continued to have positive perceptions regarding the use of technology to learn English after receiving the CALL treatment.

In their responses, the participants also stated the reasons why they thought that technology could help them in learning English. Furthermore, some students added their opinions related to the challenges of using technology with the aim of learning English. The codes that emerged from these responses were categorized as *benefits* and *challenges* of using technology to learn English, and they are presented in Table 4.11.

Table 4.11

Participants' Views on the Benefits and Challenges of Using Technology to Learn English

Category	**Code**	***f*** **(Pre-Q.)**	***f*** **(Post-Q.)**
Benefits	provides access to materials and content	13	15
	provides access to information	6	2
	improves English language skills	2	5
	facilitates self-study	2	4
	convenient to use	2	4
	enjoyable	2	2
	caters to individual needs	2	2
	provides chances to communicate in English	2	1
	TOTAL	***31***	***35***
Challenges	can offer limited help	2	-
	boring	1	-
	TOTAL	***3***	**-**

As illustrated in Table 4.11, the most frequently mentioned point by the participants both in the pre- and post-questionnaire was that technology *provides access to materials and content*. The participants indicated that technology can be helpful in learning English because it enables learners to find various materials which they can use in their studies. Besides, they can reach various kinds of content in the target language through which they can practise their language skills. Similarly, the students also mentioned that technology *provides access to information*, which was the second most frequently mentioned point. They stated that technology can help them learn English by providing all the information they need related to their studies. The following excerpts are indicative of these views collected under these two codes:

> *Of course, yes! There are lots of opportunities on the websites. Youtube, BBC Learning and other websites for educational purposes. Even if you miss your class that day, you can compensate for it very easily.* (Participant 4, pre-questionnaire)

> *Yes. There are huge amounts of educational documents and information. You can choose the suitable ones for you. Technology makes it easier to access them.* (Participant 23, pre-questionnaire)

> *Of course, yes. There are lots of apps, websites and useful tools on the Internet. They provide an easier way to practise and learn English.* (Participant 1, post-questionnaire)

> *Technology can help us in learning English. For example, when you don't know something about English, you can search it on the internet. In addition, you can practise English by using useful websites.* (Participant 2, post-questionnaire)

> *I think nowadays technology is the most helpful one. You can improve your skills by lots of tools such as mobile phones and computers. Also, they are easy to use, so you don't feel that it is a waste of time.* (Participant 9, post-questionnaire)

The third frequently mentioned benefit was the effect of technology to *improve the English language skills* of the learners. The participants who mentioned this benefit of technology acknowledged that technology provided them with opportunities to practise the target language and improve their skills in this way. This point was mentioned more frequently in the post-questionnaire than in the pre-questionnaire, which can suggest that some participants focused on the opportunities technology offers to improve their language skills more after the CALL treatment.

In addition to the benefits above, the participants also mentioned that technology *facilitates self-study* outside the class, is *convenient to use* as it is an easy-to-use and fast tool, is *enjoyable* to use, *caters to individual needs* by offering various alternatives for different learner needs, styles and preferences, and *provides chances to communicate in English* with others.

Although all of the students affirmed that technology can assist them in learning English, two of them also added some challenges related to this issue in the pre-questionnaire. Participants 6 and 10 stated that although technology can be helpful in learning English in some aspects, it *can offer limited help*. In other words, the opportunities and the kind of assistance it can provide is limited, as illustrated in the following excerpts:

> *Technology can help us in learning English but not all the time. In my opinion, the best way to learn English is to take notes and do more exercise.* (Participant 6, pre-questionnaire)

> *It can help me to make investigations and find online sources. But I do not think that technology can help more than that.* (Participant 10, pre-questionnaire)

Participant 5 stated that although using technology can help in learning English, it is not a good idea to use technology all the time since it can be *boring*:

> *Yes, technology can help us but not help us every day. Because I am bored with using computer with the aim of studying English. It can be dull for us.* (Participant 5, pre-questionnaire)

On the other hand, these two challenges were not mentioned in the post-questionnaire by any of the participants, which may suggest that the overall positive perceptions of the participants towards the use of technology to learn English were strengthened after the CALL treatment.

4.2.1.2 The perceptions of the participants on whether they felt comfortable while using technology to learn English before and after the CALL treatment

The second open-ended question in the third part of the pre- and post-questionnaire asked the participants how comfortable they felt while using technology to learn English. The analysis of the data collected from both administrations of the questionnaire revealed some differences in the responses of the participants in the pre- and post-questionnaire.

In the pre-questionnaire, while most of the participants stated that they felt comfortable while using technology to learn English, 11 participants indicated that they did not feel completely comfortable or did not feel comfortable at all when they used technology in their English studies. On the other hand, in the post-questionnaire, the number of the students who stated feeling uncomfortable while using technology to learn English decreased (n = 3). This difference in the responses of the participants can be linked to the effect of the CALL treatment and may suggest that more students started to feel comfortable while using technology to learn English after receiving the CALL

treatment. This finding is also illustrated in the responses of some of the participants, who explicitly mentioned the positive effect of their use of technology during the CALL treatment on their confidence and abilities to use technology to learn English:

> *After using different tools, I realized I wasn't using technology effectively enough to learn or improve English. But now, I feel confident.* (Participant 7, post-questionnaire)
>
> *Yes, after I practised my English skills by some technological tools, I feel improved and comfortable.* (Participant 9, post-questionnaire)
>
> *Yes, I feel comfortable. I used a lot of sites, and they helped me improve my English.* (Participant 21, post-questionnaire)

In their responses, the participants explained why they felt or did not feel comfortable while using technology to learn English. The codes emerged from the analyses of these responses were categorized as *reasons for feeling comfortable* and *reasons for feeling uncomfortable*, and they are demonstrated in Table 4.12.

Table 4.12

Participants' Views on Their Reasons for Feeling Comfortable and Uncomfortable While Using Technology to Learn English

Category	**Code**	***f*** **(Pre-Q.)**	***f*** **(Post-Q.)**
reasons for feeling comfortable	uses it efficiently	2	8
	finds reliable information and sources	3	7
	useful for learning English	4	3
	familiar with technology	1	2
	can understand the language	2	1
	TOTAL	***12***	***21***
reasons for feeling uncomfortable	finds unreliable information and sources	8	2
	cannot understand the language	1	-
	cannot use it efficiently	1	-
	prefers face-to-face learning	-	1
	TOTAL	***10***	***3***

As reported in Table 4.12, one of the most frequently mentioned reasons for feeling comfortable while using technology to learn English was being able to use technology in an efficient way. When the participants felt that they were good at using technology in an effective way, they felt comfortable about using it. The comparison of the data in the pre- and post-questionnaire showed that in the post-questionnaire, this point was mentioned more frequently. The excerpts below demonstrate the views of the participants related to this point:

> *I feel comfortable because I know how to use them efficiently. I know what sources I need to use.* (Participant 15, pre-questionnaire)

> *Yes. I love to do things about learning English. I know how to reach materials and sources.* (Participant 25, post-questionnaire)

In the *reasons for feeling uncomfortable* category, the most frequent point was finding unreliable information and sources. The participants who mentioned this stated that because there is lots of inaccurate information especially on the Internet, they thought that it can be misleading and therefore they did not feel comfortable while using technology to learn English, as indicated in the following excerpts:

> *Sometimes yes I feel comfortable, but not always because there are many websites about learning English. I can't rely on anything. One tells different thing, another one tells another thing about same subject. I am confused that time.* (Participant 5, pre-questionnaire)

> *No, I don't because they are sometimes misleading us, so I can't trust whether the information is true or false. I prefer learning from my teachers and books.* (Participant 12, pre-questionnaire)

> *In fact no, because sometimes I can find wrong information on the net.* (Participant 22, post-questionnaire)

On the other hand, some participants made a point opposing the views above and acknowledged that they felt comfortable while using technology to learn English because they were able to *find reliable information and sources*, which was one of the most frequently mentioned reasons for feeling comfortable. Specifically, some of them claimed that although there were unreliable sources on the Internet, they were able to

find accurate and reliable sources by checking different websites and in this way use technology in a beneficial way. These views are illustrated in the quotations below:

> *Yes, in my opinion, it's very useful. Whenever I couldn't find information about English lessons, I usually search it on Internet and also these are often true and reliable.* (Participant 1, pre-questionnaire)
>
> *Yes because websites that I visit are safe. They are used for educational purposes.* (Participant 11, pre-questionnaire)
>
> *Yes. I check different websites. There are websites which are really efficient and reliable.* (Participant 16, post-questionnaire)

Furthermore, while finding unreliable information and sources was mentioned less frequently in the post-questionnaire than in the pre-questionnaire, the frequency of the mentions of finding reliable information and sources increased in the post-questionnaire. These findings suggest that students started to consider the unreliable information and sources on the Internet less as a reason for feeling uncomfortable while using technology to learn English after they received the CALL treatment.

Besides the points mentioned above, the participants listed other reasons for feeling comfortable or uncomfortable with using technology to learn English. The participants who felt comfortable mentioned the usefulness of technology, being already familiar with technology from their daily lives, and being able to understand the contents in English as their reasons. The participants who felt uncomfortable listed not being able to understand the contents in English because of complex language, not being able to use technology efficiently and preferring face-to-face communication and learning as their reasons.

To sum up, the responses of the participants to the second open-ended question showed that while more participants felt comfortable with using technology to learn English in the post-questionnaire than in the pre-questionnaire, which can be linked to the effect of the CALL treatment. As for the reasons for feeling comfortable, the most frequently mentioned reasons were being able to use technology efficiently and being able to find reliable information and sources through technology, both of which were mentioned more frequently in the post-questionnaire. On feeling uncomfortable, the most

frequently mentioned reason was finding unreliable information, the frequency of which decreased in the post-questionnaire.

4.2.2 Findings on research question 2b: What are the benefits of the CALL implementation according to the participants?

One of the themes that emerged from the analysis of the data collected from the interviews was the positive aspects of the CALL treatment based on the perceptions of the participants. The codes that were used for these positive views were collected under the theme *benefits of the CALL treatment,* and they are presented in Table 4.13 below.

Table 4.13

Participants' Views on the Benefits of the CALL Implementation

Code	***f***
provides access to resources	17
provides freedom to choose	16
improves English skills	10
makes practice enjoyable	8
improves study skills	7
convenient to use	6
provides guidance	5
motivates for self-study	5
provides access to help	3
makes practice regular	1
provides access to authentic input	1
up-to-date content	1
TOTAL	***80***

The most frequently mentioned benefit of the CALL treatment in the interviews was that it *provides access to resources* according to the participants. The interviewees who mentioned this point indicated that the CALL treatment enabled them to access a wide range of materials and tools that they can use in their English studies. It was stated by some participants that although they already knew that the Internet has lots

of materials, they did not know how to find them and therefore were not aware of many of the tools and materials they learned about during the CALL treatment before the treatment started. These views of the participants are illustrated in the following excerpts:

> *What I liked most about the project is that I had the chance to improve myself and explore new things. If I hadn't used technology in this project, I wouldn't be aware that there were so many good websites and so many opportunities on the Internet.* (Participant 3, female, large increase in autonomy)

> *Thanks to these tools, I can access resources not only for grammar but for any language component such as listening and vocabulary. There are even websites where I can ask questions when I need to learn about something. That's why I loved using technology for learning English.* (Participant 7, female, decrease in autonomy)

Participant 5 also acknowledged that learning about these tools and materials inspired him to explore other useful resources and tools:

> *I became aware of the opportunities on the Internet. By learning about some very good quality websites in this project, I discovered other ones similar to them. Previously, I didn't really know about these.* (Participant 5, male, average increase in autonomy)

The second salient advantage of the CALL treatment brought up in the interviews was *providing freedom to choose*, which was mostly mentioned in relation to *providing access to resources*. The participants who mentioned this affirmed that it was a benefit of the project that it offered students freedom of choice over which tools and which materials to use. They said that they were happy about the fact that in addition to offering a wide variety of alternatives regarding the tools and materials, the CALL project allowed them to select the ones they would like to use in the ways they wanted and they also decided on the time, place and amount of usage. The quotes below are indicative of these perceptions:

> *I felt that I had more freedom compared to my previous experiences. I hadn't used technology in this way before. For example, it was different in high school. Here it was really good for me to have the chance to choose the things I wanted based on my preferences. I wasn't obliged to do anything I didn't want. That's why I was really happy.* (Participant 3, female, large increase in autonomy)

> *I think it was good for us to make choices without having any obligations. For example, about reading, I can choose whatever reading text I want. Let's say the reading texts in the course book or the ones we read in class are too easy for me. When I search for a text on the Internet, I can choose something that is suitable for me, and I can improve myself gradually. It is the same for listening. I have used the Youtube channels a lot. The listening exercises in class are usually about scientific topics. However, on the Internet, I can choose listening materials that I find interesting.* (Participant 6, female, average increase in autonomy)

> *I chose the materials that were suitable for me, so I enjoyed using all of them. If it had been obligatory, I would have had to use materials that I didn't enjoy. It was nice that we made choices.* (Participant 9, female, decrease in autonomy)

> *I enjoyed choosing them based on my interests and using them in my way. That's why it was beneficial for me.* (Participant 1, female, large increase in autonomy)

On *freedom to choose*, two participants emphasized that because students themselves know about their individual needs, preferences, and goals best, it was good for them to be allowed to make choices according to those factors:

> *In my opinion, it is really good to have alternatives to choose from. That's because I more or less know my own strengths and weaknesses. Therefore, I also know how to improve myself. That's why I chose the websites related to the areas I wanted to improve myself in. The fact that there were lots of websites led me towards my own areas of interest.* (Participant 7, female, decrease in autonomy)

> *It is nice to have freedom while studying. I know what I want to achieve. Thus, it was a comfort for me to be allowed to make choices instead of being restricted.* (Participant 8, female, decrease in autonomy)

In addition, Participant 2 pointed out that the advantage of having freedom of choice over the resources was that she was able to integrate these resources into her life and continue using them after the project ended because she chose them based on her interests:

> *It was quite good to choose which resources to use. For instance, if there had been only one website, maybe I wouldn't have liked that website or I would have used it less. Probably I wouldn't have integrated it into my daily life. Since I chose the ones I wanted, I continue to use them.* (Participant 2, female, large increase in autonomy)

Another point that the participants frequently touched on was that the CALL treatment helped them to *improve their English skills* based on their perceptions. Many of the participants stated that they felt they were able to improve their skills in English because the CALL treatment led them to practise the language in an efficient way by the help of the tools and resources they used during the intervention. The following statements illustrate these views:

> *I think it has improved especially my listening and reading skills. For example, in the past, I had difficulty in understanding the listening tracks. In this respect, I have benefited a lot from the listening websites. About writing, the word counter website was really useful for me.* (Participant 1, female, large increase in autonomy)
>
> *It definitely improved my English, and in many different aspects. I did lots of different activities on various websites, and this had a really good effect on my English.* (Participant 3, female, large increase in autonomy)
>
> *I think the project really improved my English, especially in vocabulary and listening. For example, I used Free Rice a lot because the website was really motivating. For listening, I frequently used Youtube channels. These websites improved my English.* (Participant 6, female, average increase in autonomy)
>
> *I certainly think that using those resources improved my English. Thanks to them, I got better in many skills such as speaking and reading. They were really helpful.* (Participant 7, female, decrease in autonomy)
>
> *The project was very beneficial especially for my reading and vocabulary. Therefore, I still use many of those websites.* (Participant 9, female, decrease in autonomy)

As it can be seen in the excerpts above, many participants also named the language components that they think they specifically developed in during the CALL treatment, and they mentioned different components such as reading, listening, speaking and vocabulary. This suggests that based on their use of the tools introduced during the intervention, the participants observed different results and were able to benefit from the tools in different components.

Participant 5 compared his level in listening before and after the treatment and stated that he was able to observe the improvement in his listening skills in class:

> *For instance, before you shared the listening websites with us, I was really bad at listening. During the exercises we did in class, I always missed the necessary information or the key words. After you shared those websites with us - especially the podcast sites- I improved my listening quite a lot by listening to them. I notice this difference in lessons now.* (Participant 5, male, average increase in autonomy)

Participant 2 pointed out the positive effects of her regular use of the tools and being exposed to authentic, colloquial language on her English skills, specifically mentioning reading and speaking:

> *My English has improved because it was beneficial to use them regularly. In addition, on these websites, a more colloquial language is used mostly, so it is beneficial. For example, Buzzfeed and Mashable were really good for reading. They are enjoyable, have a colloquial language use and also educational. Also, the talks on Buzzfeed were helpful for speaking.* (Participant 2, female, large increase in autonomy)

Another point the participants mentioned was that the CALL intervention enabled them to practise English in an *enjoyable* way because they were able to use various websites and tools instead of studying only through course books or worksheets, as indicated in the following excerpt:

> *When we study English on the Internet, we learn with images and videos. The websites are attention-grabbing. They don't only share information but also make learning more enjoyable and permanent through games and quizzes.* (Participant 5, male, average increase in autonomy)

In addition to the points above, the participants uttered several other benefits of the CALL treatment. To illustrate, they acknowledged that the CALL implementation *improved their study skills* because they were able to choose and utilise materials based on their learning styles and their needs. Therefore, they were able to study more efficiently. In addition, they stated it was *convenient* for them to practise English during the CALL intervention as the tools were easy-to-access and fast. Another benefit according to the participants was that it *provided them with guidance*. That is, although the students were able to choose the materials themselves and use them in their own ways, the project provided them with guidance by focusing on different skills each week, giving them a list of tools to choose from, and making them complete

certain tasks with deadlines. Related to this point, the participants expressed that the treatment motivated them for self-study and they started studying more outside the class.

The other benefits of the treatment based on student perceptions are *providing access to help* through websites where they can communicate with others, *making them practise English in a regular way*, *providing access to authentic input* and including *up-to-date content*.

4.2.3 Findings on research question 2c: What are the challenges of the CALL implementation according to the participants?

In addition to the benefits of the CALL treatment, the participants also mentioned several features that they found challenging. The codes used for these views were collected under the theme *the challenges of the CALL implementation*, and they are reported in Table 4.14 with their frequencies.

Table 4.14

Participants' Views on the Challenges of the CALL Implementation

Code	***f***
limited efficiency	5
limited time period	3
limited guidance	2
technical inconveniencies	1
getting distracted	1
limitations on choice	1
TOTAL	***18***

Among the challenges of the intervention based on student perceptions, the most frequently uttered point was *limited efficiency*. The participants who mentioned this claimed that although technology offered many opportunities for studying English, in many aspects, it would not be enough in learning English on its own without support

from school learning. These participants generally emphasized the importance of traditional in-class learning from a teacher and stated that using technology in such a way as in the CALL intervention could only support it. These perceptions are illustrated in the following excerpts:

> *[…] However, these tools cannot completely replace our lessons at school. Especially about speaking, the websites we used are tools by which we can improve ourselves only in informal and colloquial language. The activities we do in class are more useful for preparing for the exams.* (Participant 5, male, average increase in autonomy)

> *On the other hand, we also need teachers. That is because I think it is better to learn from a person. Learning a language happens by communication. That's why I think it is more effective to learn from a person.* (Participant 1, female, large increase in autonomy)

> *I don't like when technology replaces humans. I really believe that learning from a teacher is far more beneficial than learning through technology.* (Participant 4, male, average increase in autonomy)

The remark by Participant 4 above suggests that a personal dislike for technology can affect the perceptions towards the CALL treatment. That is, if learners prefer not use technology or already have some negative perceptions about it, they may also think it is limited or inefficient in facilitating learning, which is also illustrated in the statement below by the same participant:

> *I do not really favour technology as I do not use it much. That's because individuals are more important. I think it is impossible for technology to replace humans. That's why there is not much I like about technology.* (Participant 4, male, average increase in autonomy)

On the limited efficiency of technology, Participant 7 also emphasized the need for a teacher in language learning, and mentioned a specific event she experienced during the CALL treatment to illustrate her point. She stated that when she tried getting help from other people by using a website, she saw that the feedback she received was not very effective:

> *I think learning English is a task that requires a teacher. Sometimes we need to talk to someone individually or we need someone to clarify some points for us or teach us some subjects directly. In that aspect, technology can be a little*

> *inefficient. For instance, during this project, I sent a paragraph that I had written to a user on one of the websites where we can ask questions. Of course, s/he checked it and made corrections on it, but s/he couldn't explain what the exact problems were and why they were problems. She just offered some corrections without the reasons behind. That's why I need someone who can teach me on these.* (Participant 7, female, decrease in autonomy)

Another challenge according to the participants was the *limited time period* in which they had to use the tools and complete the tasks. It was explained by the participants that they had difficulty in exploring all the tools they were introduced to about a language component in just one week. They stated that although they wanted to use the websites more, they had to spend a small amount time on them as they had only one week, as illustrated in the following quotes:

> *Because we were really busy with exams and assignments, I couldn't spend as much time as I wanted on each website. I mean there was a problem about time. It was really difficult to use all the websites in a week. There are good activities on all the websites, but we were able to use each of them only a little bit in a week.* (Participant 5, male, average increase in autonomy)

> *Through this project, I can improve myself, learn about my weaknesses and make plans accordingly. However, I was able to do these only partially because of time limitations.* (Participant 8, female, decrease in autonomy)

With regard to the guidance offered during the CALL treatment, it was mentioned by some participants that they felt limited guidance was offered by the project, which was a challenge for them. In these remarks, they specifically pointed out their need to get answers to their questions or receiving guidance while using the tools. The excerpts below indicate these perceptions:

> *In class, we can directly ask questions to our teachers when there is something we do not understand. However, on the Internet, there is no one to ask our questions. There are problems in communication.* (Participant 1, female, large increase in autonomy)

> *When I use technology, sometimes I can't get the exact answers I want.* (Participant 7, female, decrease in autonomy)

Besides the aforementioned matters, some participants stated that *technical inconveniencies* related to the use of Internet and technical equipment, *getting*

distracted while using the tools by other elements on the Internet and hence wasting time on other pages instead of practicing English, and *limitations on choice* as there was a specific list of tools to be used were other challenges they faced during the CALL treatment.

4.2.4 Findings on research question 2d: What are the effects of the CALL implementation on learner autonomy according to the participants?

In the interviews, when the participants were asked if they thought the CALL implementation had any effects on their autonomy, they expressed various opinions. First of all, most of them stated that they felt more autonomous or they started to behave more autonomously in their studies. They also explained the reasons why they thought they were more autonomous or in which aspects the CALL treatment affected their autonomy. These views stated by the participants were gathered under the theme the effects of the CALL implementation on learner autonomy. Table 4.15 presents the codes and their frequencies under this theme.

Table 4.15

Participants' Views on the Effects of the CALL Implementation on Learner Autonomy

Code	***f***
promotes self-evaluation	22
promotes making choices	14
decreases dependency on teacher	12
helps to plan studies	10
helps to develop learning strategies	5
TOTAL	***63***

The most frequently mentioned effect of the CALL implementation on autonomy by the participants was *promoting self-evaluation*. The participants pointed out that the CALL treatment led them to make more evaluations about their performance, studies and progress in English. That added that, in this way, they started to notice their

strengths and weaknesses more and shape their studies according to their needs. The following excerpts are indicative of these views:

> *Since I am only in preparatory class now, I didn't really try to understand my strengths and weaknesses before this project. I just completed the homework assigned by my teachers. By the help of this project, I have found extra practice opportunities at home, and it was really beneficial for me. Thanks to the videos, I have noticed that I need to improve myself in Listening. I think the project is really useful for us to follow our progress if we practise it regularly. For instance, we can see how far we have improved in writing by using the website Future Me.* (Participant 6, female, average increase in autonomy)

> *During the project, I have realised that I needed to focus more on Speaking, and I tried to do it.* (Participant 4, male, average increase in autonomy)

> *[…] For example, I used Future Me for writing, and I noticed that I had difficulty. Therefore, I need to practise writing more and improve it.* (Participant 9, female, decrease in autonomy)

> *I saw my weaknesses by the help of this project. Therefore, I focused on those aspects more. For instance, in Listening, I saw that I was not very good at it, so I listened to Ted Talks and BBC audios.* (Participant 7, female, decrease in autonomy)

The statements above include specific areas or instances in which the students made self-evaluation actively and took action related to it. In addition to those, there were also some statements which indicated that the participants thought the project has the potential to make them evaluate themselves without necessarily including evidence that they actually did it during the treatment. Nevertheless, these statements still suggest that the participants considered the project was good for promoting self-evaluation, as illustrated in the excerpts below:

> *It can help us in self-evaluation. If we notice that we are better at completing the tasks in class, such as reading faster, after using those websites, it means the sites have benefits for us.* (Participant 5, male, average increase in autonomy)

> *We can evaluate our study performance. For example, maybe we have fewer errors, or we have completed a task more successfully. We can evaluate ourselves.* (Participant 3, female, large increase in autonomy)

> *Some websites have levels for their content. When we continue completing those levels, we can see that we have improved ourselves. Similarly, we can complete the quizzes some websites offer.* (Participant 7, female, decrease in autonomy)

A possible reason why the participants above acknowledge the potential of the project for self-evaluation without mentioning specific experiences about the project may be that they did not have enough time to experience the actual effects and evaluate themselves during the intervention because of the limited time they had, which was a point also mentioned among the challenges of the intervention. A statement by Participant 8 supports this finding as it indicates that she did not have enough time to see her weaknesses although she thought that the project has the potential for it:

> *Through this project, I can […] learn about my weaknesses and make plans accordingly. However, I was able to do these only partially because of time limitations.* (Participant 8, female, decrease in autonomy)

Participant 2 emphasized the benefit of the study schedule the CALL implementation provided them with, especially the usefulness of focusing on a specific component each week:

> *We focused on a certain skill each week. In this way, I was able to notice my weaknesses and needs each week and identify my learning goals. For instance, I noticed this in vocabulary.* (Participant 2, female, large increase in autonomy)

Some participants pointed out the effect of the reflection form on self-evaluation. They suggested that the reflection form helped them to monitor and evaluate their performance, as illustrated in the following excerpts:

> *The reflection forms we have completed were really appropriate because they included all the necessary details. They were really helpful in evaluating the websites and ourselves.* (Participant 4, male, average increase in autonomy)

> *[…] The reflection forms that you have provided affected this a lot, I think. That's because we evaluated both the website and ourselves. We were able to learn about our strong and weak skills. I think they guided us really well.* (Participant 7, female, decrease in autonomy)

The second most frequently uttered effect of the CALL implementation on learner autonomy by the participants was *promoting making choices*. In this regard, the interviewees pointed out that it was beneficial that the CALL implementation offered them choice over what and how to study. They stated that, in this way, they started to make more choices over their own learning and feel more independent in addition to learning how to choose materials that were suitable for their own needs and preferences. The excerpts below demonstrate these perceptions:

> *The fact that we were able to choose the tools makes us autonomous in a way. We make our own choices, and you accept them. We were also free to make choices while evaluating the tools.* (Participant 2, female, large increase in autonomy)

> *Before you shared those materials with us, I didn't really search for materials or choose materials on my own. Now I am more informed about what websites I can use or which ones can benefit me more.* (Participant 5, male, average increase in autonomy)

> *I learnt how to choose materials on my own. Before this project, we would be given specific worksheets or pages from a course book to study from, but in this project, it was different. That's because there are so many alternatives, and we make choices over them, such as considering which ones can be more beneficial or which ones are more suitable for us. That's why it was new and different, and it involved our choices.* (Participant 3, female, large increase in autonomy)

> *Students know about their preferences more than teachers do, and technology facilitates learning based on this. There are lots of websites, and we can make choices over them. That's why we become more autonomous in this way.* (Participant 7, female, decrease in autonomy)

Another perceived effect of the CALL treatment on learner autonomy which was named by the participants frequently was *decreasing dependency on teacher*. This point was frequently linked with the feature of *promoting making choices* by the participants. They stated that the CALL implementation helped them to depend less on teachers because it provided them with materials and tools that they can use in their studies as well as guiding them in how to make use of those tools such as choosing the suitable ones and making evaluations. In this way, they did not have to depend only

on the materials and guidance provided by the teachers. These views are indicated in the excerpts below:

> *In the past, we were only depending on the teachers. I mean, we only used the materials that our teachers gave us. Even if we searched for materials and found some somewhere else, we did not know if they had accurate information or if they would be beneficial for us.* (Participant 1, female, large increase in autonomy)

> *I started to do some activities on weekends or when the teacher did not assign anything. I know about those websites and I can study on my own now. In this respect, the effects of teachers on us have decreased a little bit.* (Participant 3, female, large increase in autonomy)

> *We became more independent. In the past, I used to ask about all my questions to teachers. Now I can reach the answers by using technology.* (Participant 7, female, decrease in autonomy)

In addition to the effects mentioned above, the participants also stated that the CALL implementation affected their autonomy by helping them to plan their studies more effectively. They pointed out that because they were able to access lots of materials and make choices over them, evaluate their performances and notice their needs, they were able to organise their self-studies outside class accordingly. In relation to this, helping to develop learning strategies was another point mentioned by the interviewees as an effect of the CALL treatment on learner autonomy.

4.2.5 Findings on research question 2e: What are the suggestions of the participants to improve the CALL implementation?

In the interviews, when the participants were asked about their opinions related to how the CALL implementation period can be improved, they stated several suggestions. These opinions were collected under the theme *the suggestions of the participants to improve the CALL implementation*, and they are presented in Table 4.16 below with their frequencies.

Table 4.16

The Suggestions of the Participants to Improve the CALL Implementation

Code	***f***
including in-class practice	3
increasing the time limit	2
integrating it into the curriculum	2
including websites where students can ask about their questions	2
making the tasks more obligatory	1
having more teacher control	1
including more tools	1
TOTAL	***13***

One of the suggestions made by the participants was *including in-class practice* in the treatment. Some participants suggested that it can make the treatment period more effective to include some activities related to the tools in lessons such as choosing a material from one of the tools together with the other class members and do its activities together in class. These views suggest that the students felt the need to use some of the tools in communication and collaboration with others such as to have more guidance, feedback or ideas on how to use the tools. These suggestions of the participants are indicated in the excerpts below:

> *The project was good for individual study, but it might have been more effective if we had done it together in class. For instance, we could have done a listening activity as a whole class. However, I am not sure if we would have been using technology in that case. It could have been more effective if we had done the activities in the presence of others. Another alternative is we could have used the tools on our own first, and then use them again in as a whole class in lessons.* (Participant 6, female, average increase in autonomy)

> *Maybe, we could have chosen one website as a whole class and used it in class together. For example, we could have listened to a BBC talk and complete its activities in class. We should still have a wide range of alternatives, but we could use one of them in class.* (Participant 7, female, decrease in autonomy)

Another suggestion by the participants was *increasing the time limit*. Mentioning this point also among the challenges of the intervention, the participants stated that because

they had only one week to use the tools in a component and complete the weekly tasks, they were not able to explore all the tools they were interested in. They added that they had to use the tools they chose in a limited way. Therefore, they suggested having more than one week for each language component. The following excerpts indicate these views:

> *The time period could be increased. More than one week could be allocated for each category. That's because it was really difficult to use all the websites in a week. There are good activities on each website, but we can use them in a limited way in just one week.* (Participant 5, male, average increase in autonomy)

> *The time given was not enough for us in some points. Since we had limited time, we used the websites briefly.* (Participant 8, female, decrease in autonomy)

The interviewees also suggested integrating the implementation into the curriculum in school. This point was mentioned by the participants who had positive overall perceptions towards the CALL treatment. They stated that it would be beneficial to integrate the project into the regular school curriculum instead of using it only for a limited period of time. They added that it could be shared with other schools, teachers and students. Participant 2 also pointed out that it may be used not only in English lessons but also in many other school subjects. These views of the participants are indicated in the following quotes:

> *Something can be done to make us use it in our whole life. Teachers could be told to follow this program instead of using it as a project only for a couple of weeks. That's because if every teacher applied this program in English lessons, everyone would like it. Also, I think everyone should make use of it, not just the students in one field. It could be used for other courses besides English.* (Participant 2, female, large increase in autonomy)

> *I think we should share this with lots of other students because it could have benefits for everyone. More people should learn about it. It should be in the regular school curricula.* (Participant 3, female, large increase in autonomy)

Another suggestion mentioned in the interviews was *including websites where students can ask about their questions*. The participants stated that a tool which

students can use to communicate with others to get answers to their questions related to their studies could be introduced, as illustrated in the following excerpts:

> *Especially for speaking, a website where we can directly communicate with others, for instance where we can directly ask our questions to a native speaker, could have been included.* (Participant 7, female, decrease in autonomy)

> *A website where we can communicate with others to ask our questions could have been recommended.* (Participant 1, female, large increase in autonomy)

In addition, the participants also suggested *making the tasks more obligatory*, *having more teacher control*, and *including more tools* to improve the CALL treatment.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

5.0 Introduction

In this chapter, following a brief summary of the purpose and the design of the present study and an overview of the major findings, the findings related to each of the research questions are discussed by making references to the relevant literature. Next, the pedagogical implications related to the findings of the study are reviewed. Following these discussions, the conclusions from the study are presented. Finally, the limitations of the study and recommendations for further research are shared.

5.1 Summary of the purpose and the design of the study

The present study aimed to investigate the application of CALL to promote learner autonomy. Specifically, it was guided by two research questions. The first research question was "How does the CALL implementation affect the self-perceived autonomy levels of EFL learners studying in higher education?", and it had two sub-questions. The second research question of the study was "What are the perceptions of EFL learners studying in higher education on the CALL implementation?", and it had five sub-questions which aimed to focus on the perceptions of the students about CALL implementation to foster autonomy from different aspects.

With the aim of exploring the answers to the research questions stated above, a quasi-experimental study was designed which included an experimental group and a control group. The groups included 50 EFL learners studying in the preparatory school of a state university in Ankara, Turkey, which was the context of the study. Each of the two groups included 25 participants.

In order to investigate the use of CALL to enhance learner autonomy, a CALL treatment was applied in the experimental group for seven weeks, and the self-perceived autonomy levels of the two groups were compared through the use of a learner autonomy questionnaire before and after the CALL treatment. During the seven-week treatment, each week, a different language component was focused on, namely Vocabulary, Reading, Listening, Speaking and Pronunciation, Writing, Culture and Integrated Skills. Although a different language component was studied each week, the procedure that was followed and the tasks that were completed were the same in all the weeks. That is, at the beginning of each week, a 50-minute in-class session was held with the experimental group in one of the class hours of the day. During the session, a number of online tools, which were usually websites related to the language component, were presented to the students under sub-categories related to their purposes or contents. At the end of the session, the tasks the learners needed to complete during the week were assigned, which were the same throughout the treatment. The first task for the participants was to explore the tools during the week and choose one of them to complete the reflection form about it. The second task was to post a recommendation about one of the tools on *Edmodo* to share their ideas with their classmates.

Both quantitative and qualitative data were collected for the study through a questionnaire and semi-structured interviews. The questionnaire included three parts, which were demographic information part, learner autonomy questionnaire part, and an open-ended questions part. The learner autonomy questionnaire part, which included 15 Likert-scale items, was administered with the aim of exploring the self-perceived autonomy levels of the participants. The open-ended questions part was used in order to explore the changes in the perceptions of the participants in the experimental group related to the use of technology in language learning before and after the CALL implementation. The semi-structured interviews were conducted with 9 participants from the experimental group with the aim of exploring the perceptions of the learners towards the CALL treatment. The quantitative data were analysed by using SPSS, version 22.0. The qualitative data were analysed by using constant comparative method (Glaser & Strauss, 1967).

5.2 Overview of the major findings of the study

The major findings revealed by the study related to the effects of the CALL treatment are presented below:

- The results of the independent-samples t-tests that analysed the between-groups differences in the second part of the questionnaire showed that the post-questionnaire score of the experimental group was significantly higher than that of the control group, although there was no significant difference between the pre-questionnaire scores of the two groups.
- The paired-samples t-test results revealed that there was a significant difference within the experimental group, while there was no significant difference within the control group in terms of their mean scores in Part II of the questionnaire. That is, the self-perceived autonomy level of the experimental group increased significantly during the 7-week CALL treatment, while the control group did not undergo any significant changes in this respect.
- The independent-samples t-test that analysed the between-groups differences in terms of the gain scores of the groups (the mean difference between the pre- and post-questionnaire scores of each group) indicated that there was no significant difference between the gain scores of the groups, although the gain score of the experimental group was descriptively higher than that of the control group.
- The independent-samples t-tests that compared the groups in terms of the individual questionnaire items showed that the greatest differences were in the items related to awareness of learning strategies, self-study skills, and self-evaluation skills. In all of these items, the experimental group had significantly higher scores than the control group in the post-questionnaire, while no significant differences were found in the pre-questionnaire.
- The paired-samples t-tests conducted on the individual questionnaire items revealed that there were significant differences within the experimental group in the items related to vocabulary learning games and abilities to identify and

select study materials, while no significant differences were found within the control group.

As an overview of the quantitative findings of the study, Figure 5.1 demonstrates the within-group and between-groups differences in Part II of the questionnaire.

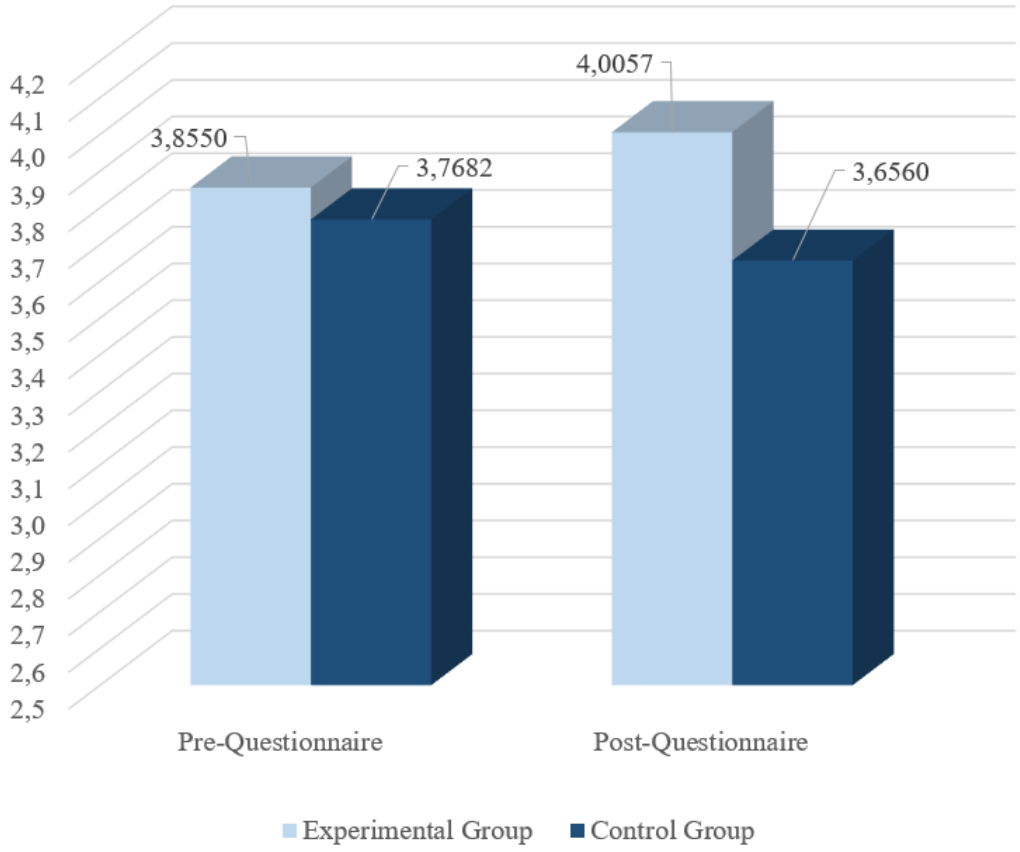

Figure 5.1 Within-group and between-group differences in Part II of the questionnaire.

- The analysis of the qualitative data collected through the open-ended questions showed that, in both pre- and post-questionnaire, all the participants in the experimental group thought that technology could be used to learn English. The most frequently mentioned benefits by the participants were *provides*

access to materials and content, provides access to information and *improves English language skills*.

- The data from the open-ended questions revealed that the number of the participants who felt comfortable while using technology to learn English was higher in the post-questionnaire (n = 22) than in the pre-questionnaire (n = 14). The most frequently mentioned reasons for feeling comfortable were *using it efficiently*, *finding reliable information and sources*, and its' being *useful for learning English*.
- In the semi-structured interviews, the participants mentioned the benefits of the CALL treatment, the most frequently mentioned of which were *provides access to resources* (*f* = 17), *provides freedom to choose* (*f* = 16) and *improves English skills* (*f* = 10).
- Among the challenges of the CALL treatment mentioned by the participants, the three codes with the highest frequencies were *limited efficiency* (*f* = 5), *limited time period* (*f* = 3) and *limited guidance* (*f* = 2).
- The effects of the CALL treatment on learner autonomy that were most frequently stated by the participants were *promotes self-evaluation* (*f* = 22), *promotes making choices* (*f* = 14) and *decreases dependency on the teacher* (*f* = 12).
- The interview participants also offered several suggestions on how to improve the CALL treatment. The most frequent of those were *including in-class practice* (*f* = 3), *increasing the time limit* (*f* = 2), *integrating it into the curriculum* (*f* = 2) and *including websites where students can ask about their questions* (*f* = 2).

The overall qualitative findings of the study are illustrated in Figure 5.2 and Figure 5.3 below. Figure 5.2 presents the themes and their code frequencies that emerged from the open-ended questionnaire data. Figure 5.3 demonstrates the themes and their code frequencies that emerged from the data collected in the semi-structured interviews.

Following the figures, the discussion related to the findings of the study is presented in the subsequent sections based on the research questions.

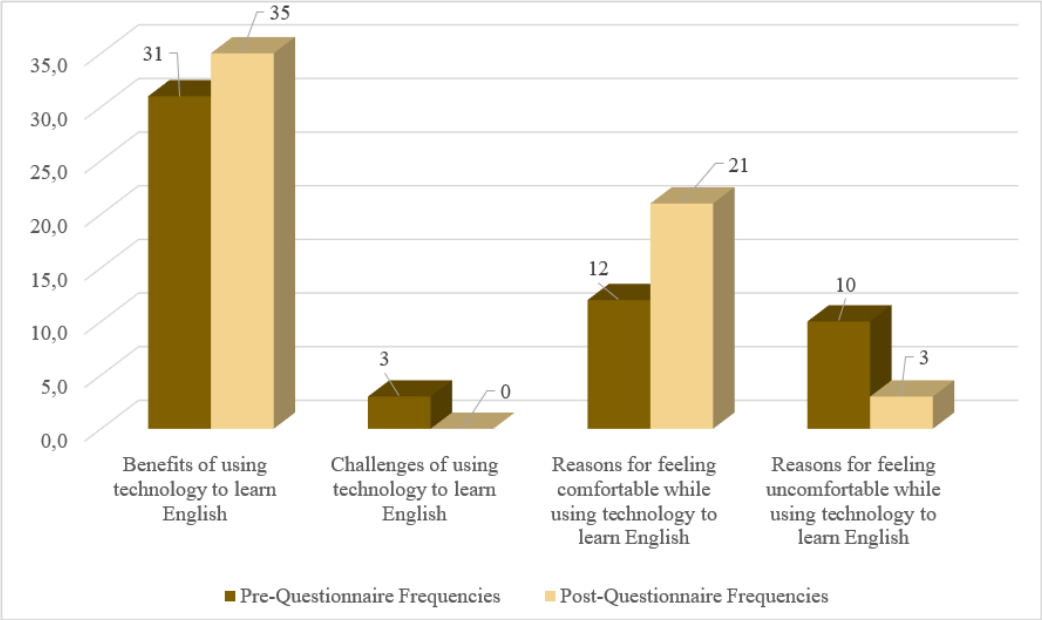

Figure 5.2 The perceptions of the participants towards the use of technology to learn English before and after the CALL treatment.

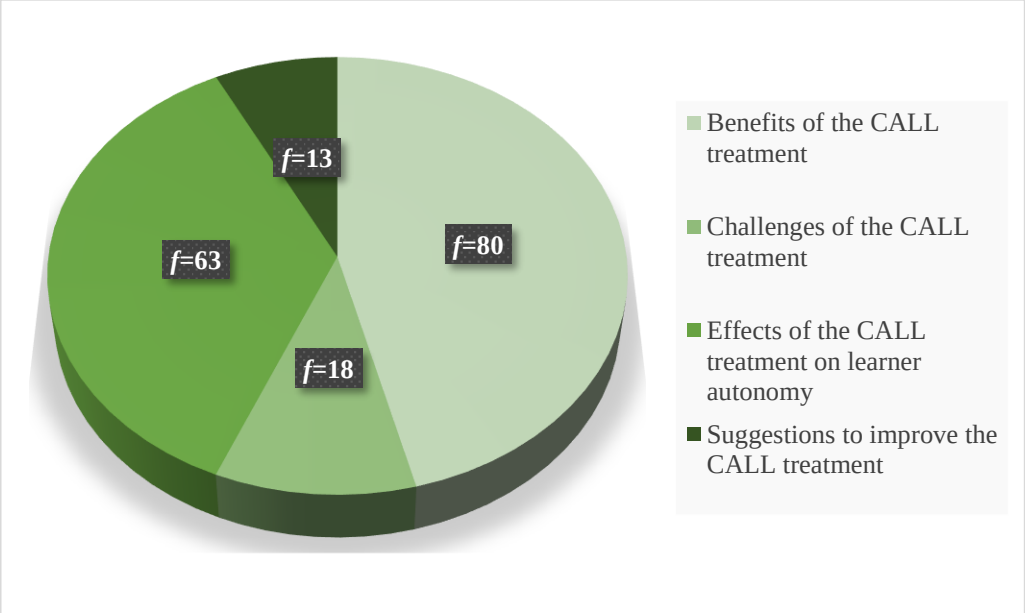

Figure 5.3 Themes from the analysis of the perceptions of the participants on the CALL treatment.

5.3 Discussion on the findings related to the effects of the CALL treatment on learner autonomy

In order to investigate the answer to the first research question, quantitative data were collected through the use of a questionnaire prior to and following the CALL treatment. Based on the data analysis, it was found through the use of an independent-samples t-test that there was not a significant between-groups difference in Part II of the pre-questionnaire, which indicated that the groups were similar to each other in terms of their self-perceived autonomy levels before the CALL implementation started. On the other hand, when another independent-samples t-test was performed on the mean post-questionnaire scores of the two groups, it was found that the mean post-questionnaire score of the experimental group was significantly higher than that of the control group. These findings from the two t-tests suggest that, although the two groups' self-perceived autonomy levels were similar to each other before the CALL treatment, they were significantly different from each other at the end of the treatment with that of the experimental group being higher, which suggests that the CALL treatment had an effect on promoting the autonomy level of the experimental group.

In addition, a comparison was made within the groups through the use of paired-samples t-test. According to the results, there was no significant difference within the control group. On the other hand, the mean post-questionnaire score of the experimental group was significantly higher than its pre-questionnaire score. These findings indicate that while the self-perceived autonomy level of the control group did not change during the seven weeks, the experimental group's self-perceived autonomy level increased significantly from the pre-questionnaire to the post-questionnaire, which points to the effect of the CALL treatment it received.

A final between-groups comparison was through the use of an independent-samples t-test. The mean gain score of each group, which is the difference between the pre-questionnaire and the post-questionnaire scores, was calculated, and these two gain scores were compared by running an independent-samples t-test. Although the descriptive statistics showed that the gain score of the experimental group was higher than that of the control group, the results of the t-test showed no significant difference

between the two gain scores. However, the descriptive difference between the gain scores supports the aforementioned findings of the analyses with other independent-samples t-tests and paired-samples t-tests. A reason for the lack of a significant difference between the gain scores may be related to the duration of the CALL treatment. The seven weeks during which the CALL treatment took place may have not been long enough for the improvement of learner autonomy that would result in a significant gain score difference. Since the gain score of the experimental group was descriptively higher than the gain score of the control group, a longer time period for the CALL treatment might have resulted in a significant difference. Alternatively, a longer duration between the administration of the pre-questionnaire and the post-questionnaire might have had an effect on the significance of the difference.

Because significant differences were in all the comparisons above except for the comparison of the gain scores, the findings from the analysis of the quantitative data demonstrate that the experimental group became more autonomous at the end of the CALL treatment compared to its autonomy level in the pre-questionnaire and to the control group, based on the perceptions of the participants. This improvement in the self-perceived autonomy of the experimental group suggests that the CALL treatment was effective in promoting the autonomy of the participants. This finding is in line with various previous studies that found a positive effect of CALL on learner autonomy (Albadry, 2018; Ardi, 2017; Bitlis, 2011; Kim, 2014; Mutlu, 2008; Öğmen, 2011; Pospíšilová, 2018). Specifically, among the studies conducted in the context of Turkey, Bitlis (2011) found that the practice of blended learning through the use of a language learning software helped to foster the autonomy of preparatory school students. Similarly, Mutlu (2008) concluded in her experimental study that strategy-training provided for the learners through CALL enhanced the autonomy levels of preparatory school students. Likewise, the study by Öğmen (2011) demonstrated that the use of e-portfolios contributed to the development of learner autonomy in high school students.

The analysis of the individual questionnaire items also suggested improvements in learner autonomy in specific aspects based on student perceptions. According to the

results of the paired-samples t-test that was run to analyse the difference within the experimental group, the CALL treatment helped to increase the amount of vocabulary games learners have to remember new words. This feature is related to the learning strategies learners make use of in the learning process, which is an element of learner autonomy (Dickinson, 1993). In this aspect, the result corroborates the findings of Öğmen (2011) and Albadry (2018). In the current study, an explanation for this significant increase may be that through the use of the vocabulary tools, which presented different ways to learn and revise vocabulary, the learners became aware of various alternative ways to study vocabulary and may also have been inspired to develop their own strategies to learn and revise new words.

Another significant increase was in the self-perceived abilities of the learners to identify and select additional materials to support their studies. This finding is consistent with the results of Ardi (2017). The promotion of learner autonomy often entails providing learners with opportunities to select learning materials, activities and strategies so that they discover their own learning styles, express themselves clearly in the learning process and eventually take the control and responsibility of the learning process (Hasan, 2011; Katz & Assor, 2007). In the present study, through the CALL treatment, the students in the experimental group were introduced to various online tools in a systematic way. The introduction to the tools included informing students about the tools and also about their functions. In this way, it was aimed that the students would be aware of the content and the purpose of the tools and incorporate them into their studies according to their learning goals and needs. Similarly, while using the tools to complete the weekly tasks, the students were provided with freedom to choose the tools and the materials. That is, as long as they were able to complete the weekly tasks, they were free to decide which tools and materials to use, and when and how to use them. This feature of the treatment may have helped learners to improve themselves in choosing suitable materials for themselves, which is a key component of learner autonomy (Dam, 1995; Little, 1991).

The comparison between the groups for the individual questionnaire items also pointed to specific differences in certain items. The independent-samples t-test results showed

that the greatest between-groups difference was related to the awareness of learning strategies. Although there was no significant difference between the groups in the pre-questionnaire in relation to awareness of learning strategies, the experimental group had a significantly higher score than the control group in the post-questionnaire. Furthermore, the largest difference between the gain scores of the groups was also found to be in the same area. These findings suggest that the CALL treatment had a positive effect on the awareness of the learning strategies in the experimental group, and they are in agreement with the findings of Mutlu (2008), Öğmen (2011) and Albadry (2018). Employing strategies in an effective way in their learning is a common characteristic of autonomous learners, and promotion of these strategies is one of the major approaches to developing learner autonomy (Dickinson, 1993; Opalka, 2001 as cited in Balçıkanlı, 2006). The improvement in relation to learning strategies found in the present study could be attributed to the fact that during the CALL treatment, the students were encouraged to engage in out-of-class study by choosing their own study materials. Research shows that autonomous learners frequently exercise out-of-class learning as they are are willing to continue their education outside the formal learning contexts without depending on external factors such as the teacher or formal learning programs (Benson, 2006; Gao, 2008). Therefore, teachers who aim to promote learner autonomy are recommended to encourage learners to continue their learning outside the class, which can result in improving metacognitive strategies and intrinsic motivation (Sharp, Pocklington & Weindling, 2002), and develop learning strategies (Benson, 2006). In the present study, the CALL implementation, which encouraged learners to continue learning outside the class may have helped them to make use of learning strategies in order to be able to study in an efficient way on their own.

According to the comparison between the groups, the experimental group also had significantly higher perceptions about their self-study skills than the control group in the post-questionnaire although they were similar to each other in this respect in the pre-questionnaire, which suggests that the CALL treatment helped to improve the self-perceived skills of the learners for self-study. This result also acknowledges the findings from the studies by Mutlu (2008) and Kim (2014). In the current study, the presentation of the online tools to the learners provided them with resources which

they could use in their out-of-class studies according to their own needs. This meant that instead of being forced to depend only on the course materials provided by teachers, the learners had the freedom to find and use materials and, in this way, depend less on external factors such as the teacher or the school. In learner autonomy, one of the major elements is the independency of the learner, but in order to achieve this, the learner needs to own the necessary resources to learn with (Dickinson, 1992, as cited in Balçıkanlı, 2006). In that respect, the CALL treatment in the present study may have helped learners to improve in self-study by decreasing their dependency on the teacher and by providing them with a variety of learning resources.

The analysis of the between-groups differences also showed that the CALL treatment had an effect on the self-evaluation skills of the learners because the experimental group had a significantly higher score than the control group in the post questionnaire for the item related to self-evaluation. This finding is in consonance with the findings of Pospíšilová (2018). Self-evaluation is claimed to be a key element of learner autonomy, and therefore, it is important to encourage students to practise self-evaluation and guide them in doing it (Breen & Mann, 1997; Scharle & Szabo, 2000). In the present study, one of the weekly tasks the participants in the experimental group were required to complete was to fill out a reflection form. In order to do this, the students were required to choose one of the tools they used during the week and complete the reflection form about it. The form included evaluation questions related to the tool itself and also to the performance of the learners in using the tool. These questions were aimed to encourage the students to evaluate the learning process. In that regard, the application of the reflection form may have led the participants to self-evaluation.

On the other hand, the analysis of the quantitative data also showed that the experimental group did not demonstrate an improvement in strategies to learn grammar based on the within-group differences. The post-questionnaire score of the group in this item was slightly lower than the pre-questionnaire score. This finding can be a result of the fact that grammar was not one of the language components that were covered during the CALL treatment; therefore, it was not focused on explicitly during

the implementation period. This may be a possible explanation for not observing an increase in the score of the item related to this component, although the findings showed improvement in general learning-strategy awareness of the learners. Therefore, in order to improve the effectiveness of the CALL implementation, a feature that may address strategies for grammar learning could be integrated to the implementation such as adding a week for the introduction of online tools for learning grammar.

Overall, the results from the analysis of the quantitative data and the discussion related to these results suggest that the CALL implementation was effective in fostering the self-perceived autonomy levels of the learners. What needs to be emphasised here is that these findings do not necessarily claim that the mere practice of CALL is enough to foster learner autonomy. Instead, the study suggests that the particular way CALL was implemented in the present study during the seven-week experimental treatment was the determining factor in achieving these results, as it is revealed in discussion related to these findings above. This conclusion is parallel to and evident in several previous studies that focused on the effects of CALL on learner autonomy and emphasised the importance of the practices included in the implementation of CALL (Ceylan, 2019; Mete, 2010; Zonturlu, 2014). Benson (2001) states that CALL has the potential to supply the required skills linked to autonomy for the learners, but at the same time he emphasises that "a great deal depends on the ways in which technologies are made available to learners and the kind of interaction that takes place around them" (p. 140). Similarly, Reinders and White (2011) warn that CALL or simply integrating technology into the learning process does not necessarily entail an improved sense of responsibility or better learning management skills in learners. In the present study, several major components of learner autonomy were included in the experimental treatment such as learner choice over learning materials and activities, self-evaluation, interaction and out-of-class learning. Therefore, the whole experimental treatment should be viewed as a complete package that brought about the improvement in the self-perceived autonomy levels of the learners.

Finally, it should also be noted that the sample in the present study comprised of learners who were students enrolled in ELT and ELL departments. That is, they were all students majoring in the English language. This implies that their motivation to study English may have been stronger than and different from other EFL learners who do not major in language-related departments. Motivation is frequently linked to the concept of learner autonomy (Reinders, 2010), and autonomous learners are often viewed as learners with a genuine interest and motivation to learn (Sinclair, 2000). Therefore, in the present study, the participants may already have had high motivation to practise English and may have adopted the activities included in the CALL implementation more readily and effectively compared to the general population of EFL learners, which may have affected the findings revealed by the study.

5.4 Discussion on the findings related to learner perceptions towards the implementation of CALL to foster learner autonomy

In order to explore the answer to the second research question, qualitative data were collected through open-ended questions and semi-structured interviews. The findings from these data demonstrated that the learners had positive overall perceptions towards the use of technology in language learning in general and also towards the CALL treatment implemented in the study specifically. Through the analysis of the data, several themes emerged under which the perceptions of the learners were gathered. These themes were parallel to the sub-questions of the second research question. The discussion on the findings related to each of these themes is presented in the following sections.

5.4.1 Discussion on the findings related to the changes in learner perceptions on the use of technology to learn English before and after the CALL implementation

The analysis of the data from the open-ended questions in the pre-questionnaire showed that all the learners in the experimental group had positive perceptions towards the use of technology in learning English before the CALL treatment started. Similarly, the analysis of the data from the post-questionnaire showed that the learners continued to have these positive perceptions. These findings suggest that the learners were open

to using technology in their foreign language studies, and in that regard, it was suitable to involve them in the CALL treatment of the present study. In addition, the fact that the learners had positive opinions related to the use of technology to learn English is in agreement with the previous studies by Zonturlu (2014) and Ceylan (2019), who also found that the learners had positive perceptions towards the use of technology in learning English.

To explain the reasons for their positive perceptions, the participants also stated the benefits of using technology in learning English. These benefits included providing access to materials and information, improving English language skills, facilitating self-study, and convenient and enjoyable use. The findings showed that the perceptions of the learners were in line with the benefits of CALL that are suggested in the literature (Reinders & Hubbard, 2013; Yuan & Kim, 2017). In addition to the benefits, two challenges were also mentioned by the learners in the pre-questionnaire, which were offering limited help and being boring. However, the fact that these challenges were not mentioned in the post-questionnaire may suggest that the CALL treatment helped the learners to stop viewing these points as challenges.

Another finding from the analysis of the qualitative data was that the CALL treatment helped learners to feel more comfortable with using technology to learn English. This was demonstrated by the fact that there were more participants in the post-questionnaire who expressed feeling comfortable while using technology to learn English than in the pre-questionnaire. This finding may be attributed to the fact that during the CALL treatment, the students not only learnt about various tools available to them on the Internet but also were provided guidance about how to integrate them into their studies. They were informed about the use of the tools and provided with suggestions on how to make use of them to learn English. In addition, the learners were encouraged to use the tools in their out-of-class studies to complete weekly tasks. Through the use of the reflection form, they were guided in how to evaluate the tools. Furthermore, they were provided with opportunities to communicate and collaborate about the use of the tools with their classmates via an online platform, *Edmodo*. All these features may have helped the learners to try using technology in new ways in a

guided environment, and as a consequence to feel more comfortable while using technology to learn English. Some of the statements in the responses of the learners to the open-ended question, which made explicit references to the positive effect of the CALL treatment in making them feel more comfortable support this argument.

5.4.2 Discussion on the findings related to learner perceptions on the benefits of the CALL implementation

In the interviews, the participants mentioned several benefits of the CALL treatment. As the most frequently mentioned of these benefits, the participants stated that the CALL implementation provided them with access to learning resources. Chik (2017) suggests that one of the major affordances of CALL is enabling learners to have control over learning through access to various learning materials and content. Reinders and Hubbard (2013) state that "CALL materials can be accessed flexibly by students when and where they need to, and be provided with varying levels of support" (p. 366). In the current study, providing learners with access to a wide range of learning tools was one of the main focuses of the CALL treatment so that the learners would be able to find materials relevant to their learning needs. The acknowledgement by the learners suggests that the treatment succeeded in doing this.

Another commonly mentioned benefit of the CALL treatment by the learners was the freedom to make choices, which is at the same time related to access to resources (Chik, 2017). In addition to introducing a variety of learning tools to the students, the CALL treatment also allowed the learners to choose the tools and materials they wished to use in their studies. This finding emphasizes the appreciation of being allowed to make choices by learners, and corroborates the findings of the studies by Mete (2010) and Ceylan (2019). These two previous studies explored the reasons for the inefficiency of two different CALL programs. In both of the studies, it was stated that the language learning software did not provide the learners with alternatives for materials and activities which the learners could select according to their individual interests, which may partly explain their inefficiency. In the current study, the learners were provided with the opportunity to make choices, and they appreciated it.

The participants also frequently pointed out that the CALL treatment helped them to improve their English skills, which is in line with the findings by Noel (2015) and Parmaxi and Zaphiris (2017). The reason for this perception of the learners may be the fact that the CALL treatment provided the learners with a weekly plan for out-of-class studies and encouraged them to study outside the class by using the online tools. This may have increased the amount of out-of-class study students engaged in and helped them to improve their language skills. Similarly, the students may have improved the efficiency of their self-study practices by finding resources relevant to their needs and by using more learning strategies, which were among the findings from the quantitative data.

5.4.3 Discussion on the findings related to learner perceptions on the challenges of the CALL implementation

During the interviews, the participants touched on several aspects of the CALL treatment which they found challenging in addition to mentioning its benefits. As the most frequently mentioned challenge, some participants stated that, although technology has many affordances for language learning, it is not as efficient as learning languages in a classroom directly from a teacher. They pointed out that they would like to use it to support their classroom studies rather than as their main language learning practice. This finding is in line with the findings of Mokhtari (2013), who concluded that although EFL learners had positive attitudes towards the use of CALL, they did not want technology to replace teachers and classroom learning. In the current study, this view of the learners may partly be related to the fact that they were language learners enrolled in a formal language learning program. As a result of this, they may have been inclined to compare their online learnings with their in-class studies. In this regard, it may be useful to explicitly inform students that the CALL treatment is intended to facilitate and support classroom learning rather than be used on its own. On the other hand, the students may also be made aware of the opportunities CALL offers for their out-of-class studies so that they can continue using it independently of their formal studies.

The participants also mentioned limited time period as a challenge of the CALL implementation. They stated that, since one week was allocated for each of the language components in the CALL treatment, they had difficulty in using the tools adequately and then complete the tasks in only one week. This view of the learners suggests that the schedule of the CALL treatment could be revised in terms of the amount of time allocated for each language component. In that way, the challenge mentioned by the participants could be handled by providing them with more time.

Another challenge uttered during the interviews was limited guidance provided during the treatment. The participants pointed out that they felt the need to ask about the difficulties or questions they had while using the tools to someone who would be able to clarify those points for them. This finding is consistent with the findings of Kim (2014), who emphasized the importance of guidance and feedback in out-of-class CALL activities. In the present study, this view of the learners is also related to the first challenge mentioned above about the limited efficiency of the CALL treatment. They stated that they prefer the immediate feedback or communication they have in class. This finding may point to the need for several minor revisions on the implementation to improve its efficiency. Firstly, the teacher guidance provided during the treatment via e-mail, *Edmodo* and face-to-face communication could be highlighted so that learners may be encouraged more to ask their questions. Secondly, the learners could be encouraged to make efficient use of the online out-of-class communication platform, which was provided through *Edmodo* in this study, in order to communicate and collaborate with their classmates. Thirdly, more online tools that learners can use to ask about their questions could be integrated into the study to introduce to learners.

5.4.4 Discussion on the findings related to learner perceptions on the effects of the CALL implementation on learner autonomy

The analysis of the data from the interviews demonstrated that most of the participants thought the CALL treatment had positive effects on their autonomy levels. The most frequently mentioned of these effects was promoting self-evaluation. This view of the participants supports the findings from the quantitative data, and as mentioned

previously, it is also consistent with the findings from the studies by Kim (2014) and Pospíšilová (2018). In the interviews in the present study, the contribution of the reflection form in this regard was specifically emphasized by some participants. This suggests that the reflection form, which made the students regularly evaluate both the tools and their performance in using them helped the participants to engage in more self-evaluation.

As another effect of the CALL treatment on learner autonomy, the participants stated that it helped them to make choices over their learning by providing them with alternatives for tools and materials to choose from. This perception of the participants also supports the findings from the quantitative data, which suggest that the CALL treatment helped the learners improve in selecting learning materials. It also acknowledges the findings of Ardi (2017). A common characteristic of autonomous learners is to be able to make decisions related to their studies by considering their individual goals, preferences and needs, and therefore, learners should be provided with opportunities for making choices over their studies in order to promote learner autonomy (Dörnyei, 2001; Katz & Assor, 2007). CALL could support learner choice and help learners improve their abilities in this area by providing them with alternatives in terms of learning materials and activities (Rankin & Edwards, 2017; Yuan & Kim, 2017). In the present study, the learners were allowed and encouraged to make choices over their learning in a guided and systematic way. As a result of this, the students' perceptions as well as the findings from the analysis of the quantitative data suggest that the treatment was able to help learners in improving themselves in making choices over their learning.

The participants also stated that the CALL treatment improved their autonomy by decreasing their dependency on the teacher. This view of the learners is in agreement with the findings from the quantitative data that suggest that the learners improved their self-study skills during the CALL intervention. Being able to study and learn in an independent way is one of the common characteristics of autonomous learners (Dickinson, 1992, as cited in Balçıkanlı, 2006), and CALL has the potential to offer this independency to learners (Reinder & Hubbard, 2013). In the present study, the

CALL treatment aimed to improve the learners' independency by providing them with online tools and resources which they could integrate into their studies outside the class in a way that matched their learning styles and needs. The learner perceptions from the interviews as well as the findings from the quantitative data indicate that it succeeded in fulfilling this aim.

5.4.5 Discussion on the findings related to the suggestions of the learners to improve the CALL implementation

In the interviews, the participants mentioned several suggestions to improve the CALL treatment. These views of the learners, who directly experienced the implementation, are important because they can shed light on how to increase the efficiency of the implementation.

One of the suggestions by the participants was to include in-class practice elements in the implementation. That is, the learners suggested that, in addition to using the tools outside the class, some of the tools or materials could be used in class when together with their classmates and the teacher. Some may argue that this view of the learners shows their dependency on the teacher or their lack of autonomy. However, literature on learner autonomy suggests that learners need guidance during the process of fostering learner autonomy; therefore, guidance and feedback provided by the teacher and the peers play a major role in this regard (Benson, 2001). In the present study, although the learners were provided with some guidance through interaction with the teacher and their peers, the views of the students suggest that they needed to have an additional form of guidance through in-class practice. The implementation of CALL was a new form of learning for most of the learners in the study as they were more familiar with traditional in-class language learning. The integration of some of the tools to lessons could have helped them to get familiar with CALL more easily.

The fact that the participants also suggested including websites where they can ask about their questions and receive immediate answers further supports the finding that they needed to be provided with more forms of guidance during the treatment. This point was also mentioned as a challenge of the CALL treatment by some of the

participants. As a potential solution, informing the learners on how to use the online tools to interact with other speakers and learners to get help and guidance about their studies can improve the efficiency of the implementation. Similarly, more websites which offer help and guidance to learners in the learning process could be added to the list of online tools covered in the CALL treatment.

Another suggestion of the participants was to increase the amount of time that was allocated for each language component. This point was also mentioned among the challenges of the implementation. Providing learners with more than a week for each language component could allow them to use the tools in a more efficient way and make more in-depth evaluations about the learning progress. Increasing the time limit could also affect the autonomy improvement positively by allowing a longer time period for the development of the skills and capacities related to learner autonomy.

Finally, the suggestion by the participants about integrating the CALL implementation into the regular school curriculum corroborates the finding that the participants had positive overall perceptions on the implementation. They stated that since they found the CALL treatment beneficial and effective, they thought it would be good to integrate it into the school curriculum permanently in their school as well as in other institutions so that more students would benefit from it.

5.5 Pedagogical implications

This study aimed to make a contribution to the current state of research and practice on learner autonomy and CALL by exploring the implementation of CALL in order to foster learner autonomy. To this end, it involved the design and application of a CALL treatment. The findings carry several implications related to the use of CALL to foster learner autonomy which could be considered by stakeholders such as foreign language teachers, curriculum and program designers, teacher educators, policy makers and researchers interested in the field.

First of all, it was found in the present study that the CALL implementation helped to increase the self-perceived autonomy levels of the EFL learners. Furthermore, the participants had positive overall perceptions on the use of technology in language

learning and on the CALL treatment specifically applied in the current study. Moreover, the suggestions made by the participants to integrate the CALL treatment into school curricula indicate that language learners are open to applications of CALL in their education as well as to pedagogical practices that promote learner autonomy. Therefore, as the findings imply, CALL could be used by language educators to foster the autonomy levels of language learners. In this regard, the CALL treatment designed and used in the present study demonstrates a specific way to apply CALL with the aim of fostering learner autonomy. Language educators and curriculum and program designers could utilise the CALL treatment offered by the present study to integrate CALL and the promotion of learner autonomy into their language instruction programs.

The present study found that there were certain areas in which the CALL treatment specifically contributed to the improvement of learner autonomy. That is, it was found that the learners improved in terms of their awareness of learning strategies, abilities to choose learning materials, self-study abilities and making self-evaluation. Therefore, the language educators who specifically observe a need for an improvement in the skills and capacities of their learners in these areas might make use of the CALL implementation in this study. Considering the findings of the study, the implementation of the CALL treatment could offer valuable support to the learners in the aforementioned areas. On the other hand, the results of the study also suggested that, during the CALL treatment, there was not an improvement in the use or awareness of the strategies related to learning grammar. Therefore, an implication for the educators who wish to focus on the learning strategies related to grammar could be to cover grammar as one of the language components in the CALL treatment.

A further implication of the study arises from the challenges and suggestions mentioned by the participants related to the CALL implementation. The language education professionals who decide to implement the CALL treatment in the study may be guided by the specific views of the learners in the present study. Besides acknowledging the benefits of the implementation, the learners named several challenges and suggested several ways to improve the efficiency of the

implementation. Based on these, one major suggestion could be to increase the amount of time allocated for each language component in the implementation. To illustrate, instead of one week, two weeks could be allocated for each language component so that learners can use the tools and complete the tasks in a more effective way. Another revision that could be made, based on the participants' perceptions, is to integrate some tools or materials from the CALL implementation into in-class practice. The learners in the present study expressed their wishes to use some of the tools in lessons with the guidance of the teacher and in collaboration with their peers. Therefore, a way to integrate the tools into lessons can be identified based on the specific learning context. For instance, in the in-class sessions, after the presentation of the tools, one of the tools can be used in the lesson. Alternatively, at the end of the time period allocated for a language component, the students can vote for the tool they would like to use in class, and the most popular tool can be integrated into the lessons.

A further implication of the findings is that, as in every pedagogical application, a carefully-organised and detailed preparation process is required before the actual implementation. In the present study, the needs and preferences of the learners, their readiness for the implementation as well as their opportunities and skills related to technology use were considered before the design and implementation of the CALL treatment; as a result, the implementation was able to be carried out without any major problems. A similar investigation is necessary in any learning context before the implementation of the CALL treatment. CALL practices require learners to have specific skills related to technology. Therefore, the technical skills and the facilities they have access to need to be explored. Similarly, administrators who decide to employ the CALL implementation in their institutions should investigate the technical skills and affordances the teachers they work with have, and any required training should be provided for the teachers. All these steps are important for an effective implementation of CALL in any educational institution.

5.6 Conclusions

The present study was conducted with the aim of exploring the effects of CALL on learner autonomy. To this end, it employed a quasi-experimental design with an

experimental and a control group. There were 25 participants in each group, who were EFL learners studying in a preparatory school of a Turkish state university. To explore the use of CALL to foster learner autonomy, a CALL treatment was implemented in the experimental group for seven weeks during which the participants used various online tools in their out-of-class English studies. With the aim of investigating the effect of the treatment on the experimental group, the self-perceived autonomy levels of the two groups were compared through a Learner Autonomy Questionnaire, which was administered before and after the CALL treatment. In addition, qualitative data were collected through semi-structured interviews conducted with 9 participants with the aim of exploring student perceptions on the use of CALL to foster learner autonomy.

The findings from the analysis of the quantitative data showed that the CALL treatment helped to increase the self-perceived autonomy levels of the learners. This finding was suggested due to the fact that the post-questionnaire score of the experimental group was significantly higher compared to both its pre-questionnaire score and to the post-questionnaire score of the control group. This result highlighted the contribution of the CALL treatment to the increase in the autonomy levels of the participants. Furthermore, the analysis of the data demonstrated that there were meaningful increases specifically in the learners' abilities to choose materials, awareness of learning strategies, self-study abilities and self-evaluation skills. This suggested that the CALL treatment had significant effects on these areas in addition to the overall autonomy level of the group. On the other hand, the results showed that there was not a significant difference between the gain scores of the experimental and the control groups. That is, the difference between the pre- and post-questionnaire scores of the experimental group was not significantly higher than that of the control group. However, the descriptive difference between the scores suggested that a longer time period for the implementation of the CALL treatment could have resulted in a significant difference. Similarly, it was found that there was a slight decrease in the self-perceived use of grammar learning strategies of the experimental group. Therefore, including grammar as one of the language components in the CALL treatment was recommended with the aim of improving the efficiency of the treatment.

The analysis of the qualitative data demonstrated that the learners had positive perceptions towards the use of technology in language learning both before and after the CALL treatment. Furthermore, the findings showed that the CALL treatment helped learners to feel more comfortable with using technology to learn English based on the statements of the students. With regard to the CALL treatment used in the study, the findings indicated that learners had positive overall perceptions towards the treatment. These findings suggest that EFL learners in the context of Turkey are open to the implementation of CALL to facilitate their language learning experiences. The benefits of the CALL treatment mentioned by the students further support this conclusion. Among the benefits of the treatment, the students named providing access to resources, providing freedom to make choices and improving the English skills of the learners. The challenges of the treatment according to the participants were also investigated with the aim of improving the treatment. In this respect, the participants mentioned limited efficiency of learning with technology, limited time period and limited guidance offered by technology as the major challenges. The views of the participants on the effects of the CALL implementation on their autonomy levels supported the results of the quantitative data analysis. That is, most participants acknowledged that the implementation had positive effects on their learner autonomy by specifically mentioning the effects on certain skills such as self-evaluation, making choices over learning and decreasing their dependency on the teacher. As for the suggestions to improve the project, the participants recommended including in-class practice by using some of the tools in lessons, increasing the amount of time allocated for each language component, integrating the implementation into school curricula as a permanent element and including some websites where learners can ask their questions to other speakers.

Based on the findings of the study, several implications were highlighted to be considered by stakeholders in the field of foreign language education. The use of CALL was suggested especially to create a learning environment that promotes learner autonomy. In this regard, the CALL treatment applied in the current study was offered as a feasible alternative for the implementation of CALL. In order to improve the efficiency of the implementation, the challenges and suggestions of the learners as well

as certain points that need to be considered in the implementation process were emphasized.

5.7 Limitations to the study and suggestions for further research

There were several limitations to the present study in terms of its design and application. It could be beneficial to consider these limitations while evaluating the findings of the study. In addition, the limitations could highlight the areas that are open to further research.

The first limitation is about the generalisability of the findings. The participants for the quantitative part of the study were identified through convenience sampling, which is a non-probability sampling strategy. Therefore, the findings of the study are limited in terms of their representativeness and generalisability. Based on this, further studies could work with a sample that is identified through a probability sampling strategy in order to obtain more generalisable results.

Another limitation could be related to the participants of the study. The participants were EFL learners who were enrolled in ELT or ELL departments. In other words, the major study area of the participants were language, and specifically the English language. As a result, their motivation levels and willingness to study may have been different compared to the students of other fields which are not related to language learning. This could influence the generalisability of the findings of the study. Therefore, further studies are recommended to include participants from other fields of study to explore the effects of the CALL implementation from different perspectives.

In addition, both quantitative and qualitative findings point to the need for a longer time period for the implementation of the CALL treatment. The current study investigated the effects of a CALL treatment that was implemented within a time limit of seven weeks. Therefore, the allocated time might have been inadequate for the development of learner skills and capacities related to autonomous learning. Hence, further studies could lengthen the duration of the CALL treatment such as by allocating more than one week for each language component. In this way, a more comprehensive

comparison could be conducted between the experimental and the control group. Similarly, the perceptions of the students related to the effectiveness of the treatment could be investigated in a more detailed way.

There were also some limitations related to the formation of the groups in the study. Firstly, the study had a quasi-experimental design. That is, the experimental and the control groups were already formed when the study was planned because each group comprised of two classes in the preparatory school that were arranged at the beginning of the semester by the school administration. Therefore, it was not possible to assign individual participants to the two groups randomly. Although the four classes were assigned to the experimental and the control groups randomly, a true experimental design instead of a quasi-experimental one could contribute to the findings of the study by allowing for a more accurate investigation. Similarly, the two groups in the study were taught by different instructors. Although the instructors did not have direct effects on the procedure of the study as the same language instruction program was followed in all classes in the institution, their teaching styles and the additional activities they implemented in class might have had effects on the findings of the study.

Besides the aforementioned suggestions, further research could be carried out by expanding the data collection procedures or investigating the issue from different perspectives. In the current study, the effects of the CALL treatment were explored by focusing on learner perceptions. Future studies could investigate the implementation of the CALL treatment from the perspectives of instructors in order to gain a deeper understanding of the issue. Another potential area to be explored is the effects of the CALL treatment on language proficiency. It was beyond the scope of the current study to explore if the CALL treatment had any effects on the language skills of the learners. However, since it was stated by the participants that they thought there were improvements in their language skills as a result of the CALL treatment, future studies could focus on this point.

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APPENDICES

A. APPROVAL OF METU HUMAN SUBJECTS ETHICS COMMITTEE

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
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02 OCAK 2017

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Doç. Dr. Perihan SAVAŞ;

Danışmanlığını yaptığınız yüksek lisans öğrencisi Zülal KIZMAZ' ın ***"İngilizceyi yabancı dil olarak öğrenen öğrencilerin özerkliğini geliştirmede teknolojinin kullanımı"*** başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay **2016-EGT-150** protokol numarası ile **02.01.2017 – 05.06.2017** tarihleri arasında geçerli olmak üzere verilmiştir.

Bilgilerinize saygılarımla sunarım.

Prof. Dr. Canan SÜMER
İnsan Araştırmaları Etik Kurulu Başkanı

Prof. Dr. Mehmet UTKU
İAEK Üyesi

Prof. Dr. Ayhan SOL
İAEK Üyesi

Prof. Dr. Ayhan Gürbüz DEMİR
İAEK Üyesi

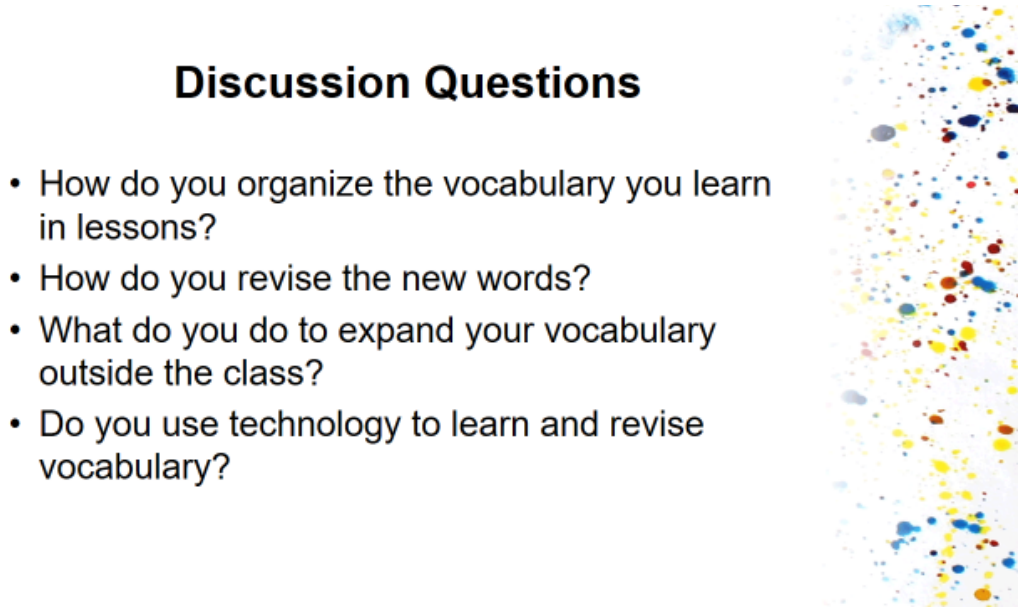
Doç. Dr. Yaşar KONDAKÇI
İAEK Üyesi

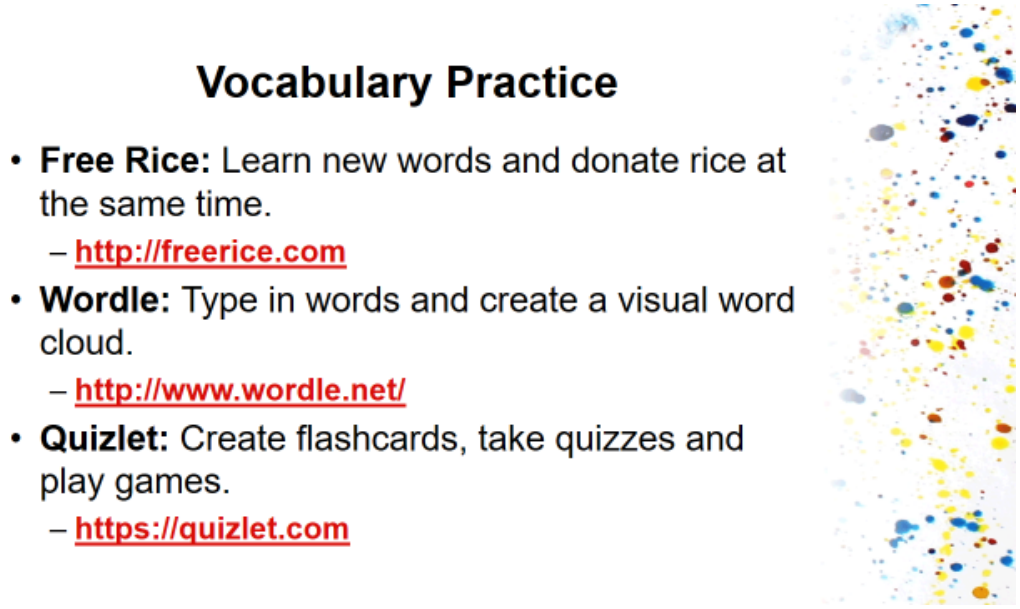
Yrd. Doç. Dr. Pınar KAYGAN
İAEK Üyesi

Yrd. Doç. Dr. Emre SELÇUK
İAEK Üyesi

B. SAMPLE SLIDES FROM THE SLIDESHOWS USED BY THE RESEARCHER IN THE WEEKLY SESSIONS

Slides from Week 1 (Vocabulary Session):

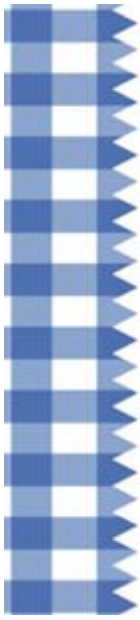




Slides from Week 2 (Reading Session):

Fiction

- Storybird: Short stories created by users
  - http://storybird.com/
- Wattpad: Social story-telling platform
  - https://www.wattpad.com/
- Mysterynet: Mystery stories and games
  - http://www.mysterynet.com/
- Project Gutenberg: Legally-shared free e-books
  - https://www.gutenberg.org/



Your tasks to complete:

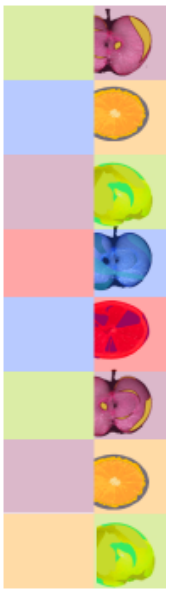
- complete the 'Reflection Form' and submit it to Edmodo ('Assignments' section).
- share your favorite tool and your suggestions on how to make use of it on Edmodo (Comment on my related post on Edmodo).

Slides from Week 3 (Listening Session):

Slides from Week 4 (Speaking Session):

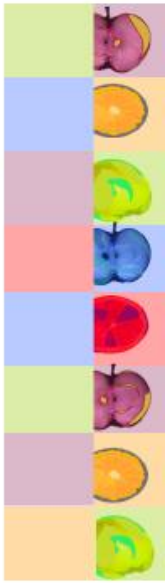
Conversation and Language Exchange

- Conversation Exchange
  - https://www.conversationexchange.com/
- Speak Talk Chat
  - http://speaktalkchat.com/
- Italki
  - https://www.italki.com/partners
- Speaky
  - https://www.speaky.com/



Conversation and Language Exchange: Tips

- Find a native speaker of English who is learning Turkish.
- Make sure that you are at the same level in your target languages.
- Ask questions. Keep the conversation going. You can think of some conversation topics beforehand.
- Ask your partner to correct your mistakes and give you feedback. Do the same for him/her.



Slides from Week 5 (Writing Session):

Creative Writing

- **One Word:** You are given a word and 60 seconds to write about it.
  - http://www.oneword.com/
- **Creative Writing Prompts**
  - http://www.creativewritingprompts.com/#
- **Future Me:** Write a letter for your future self.
  - https://www.futureme.org/
- **Storybird:** Create stories about nice illustrations.
  - https://storybird.com/create/

Creative Writing: Tips

- Use your creativity and have fun!
- Use a dictionary.
- Proofread and edit.
- Write regularly, not occasionally.
- Share your writing with your friends and other users.
- Your ideas?

Slides from Week 6 (Culture Session):

World Cultures

- Life around the World
  - http://learnenglishteens.britishcouncil.org/magazine/life-around-world
- Culture Crossing Guide
  - http://guide.culturecrossing.net/index.php
- Internations
  - https://www.internations.org/
- The Culturist
  - http://www.thecultureist.com/

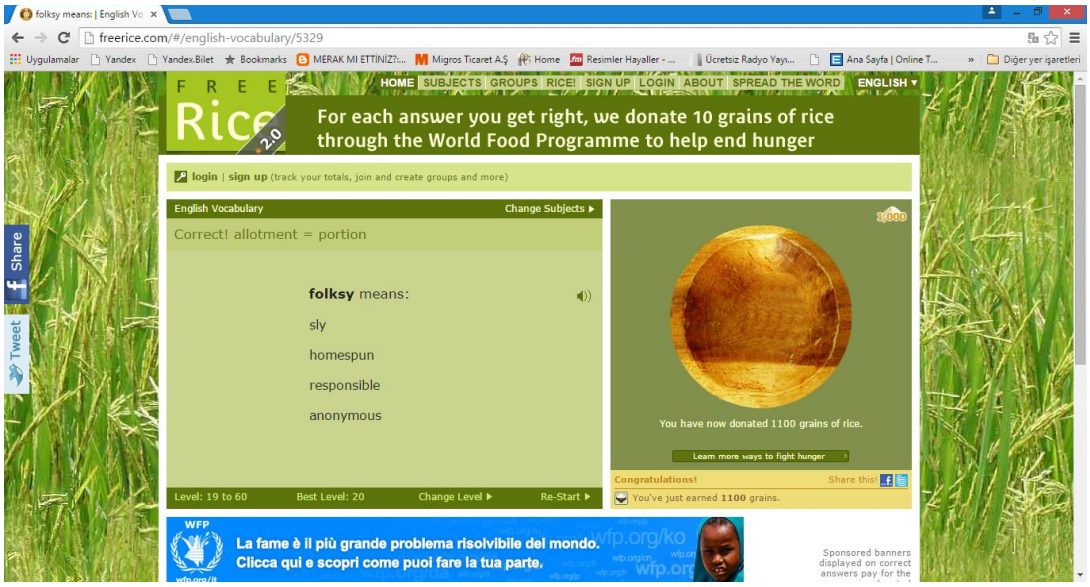
World Cultures: Tips

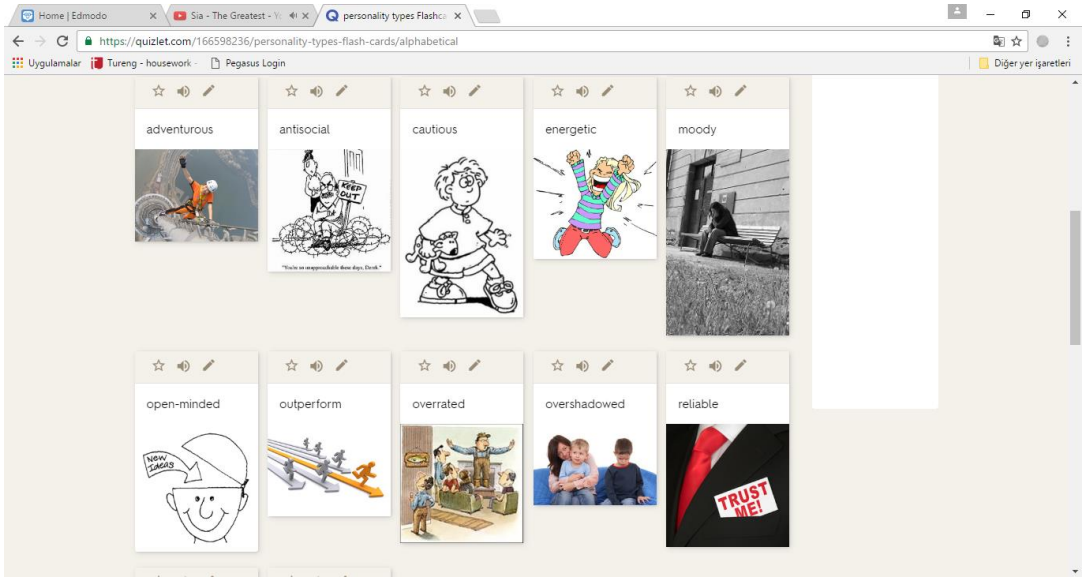
- Learn about different cultures around the world.
- Compare the cultures with your own. What are the similarities and what are the differences?
- Make a list of the countries you would like to visit and explore their cultures.
- List the tips for a traveler visiting those countries.
- Contribute by sharing about your own culture.

Slides from Week 7 (Integrated Skills Session):

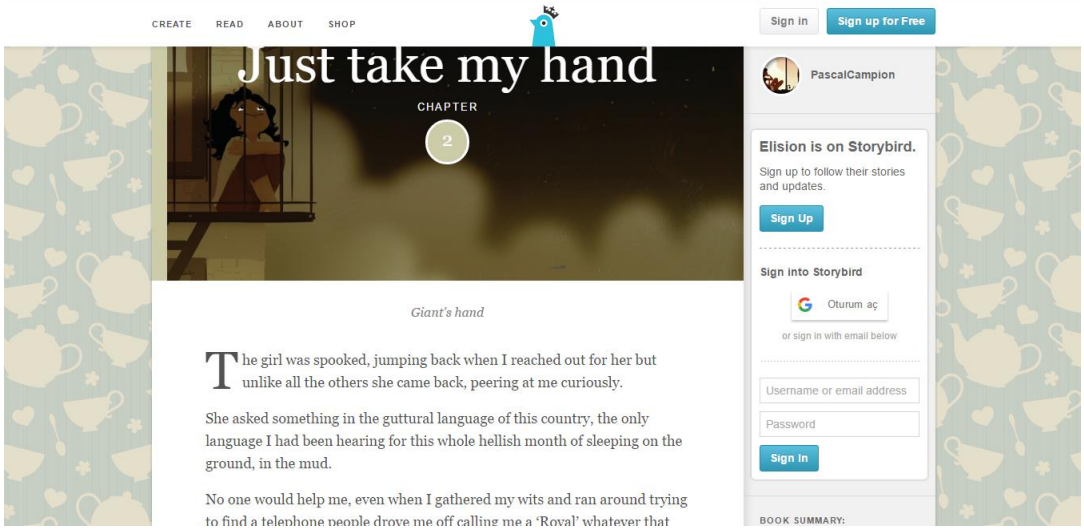
C. SAMPLE SCREENSHOTS OF STUDENT WORK IN THE REFLECTION FORMS SENT BY THE STUDENTS

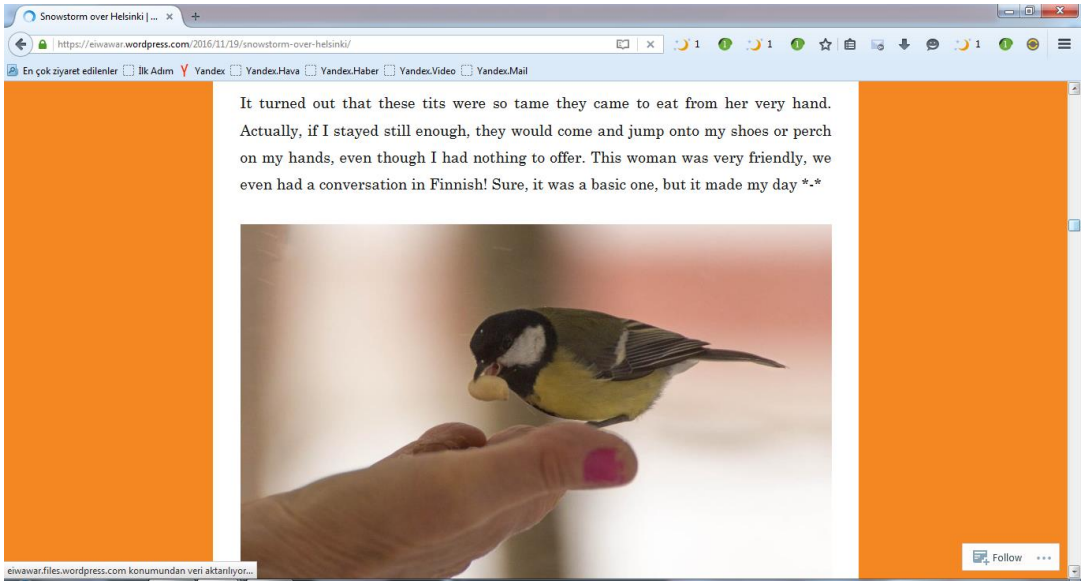
Screenshots from the Reflection Forms in Week 1 (Vocabulary Tools):



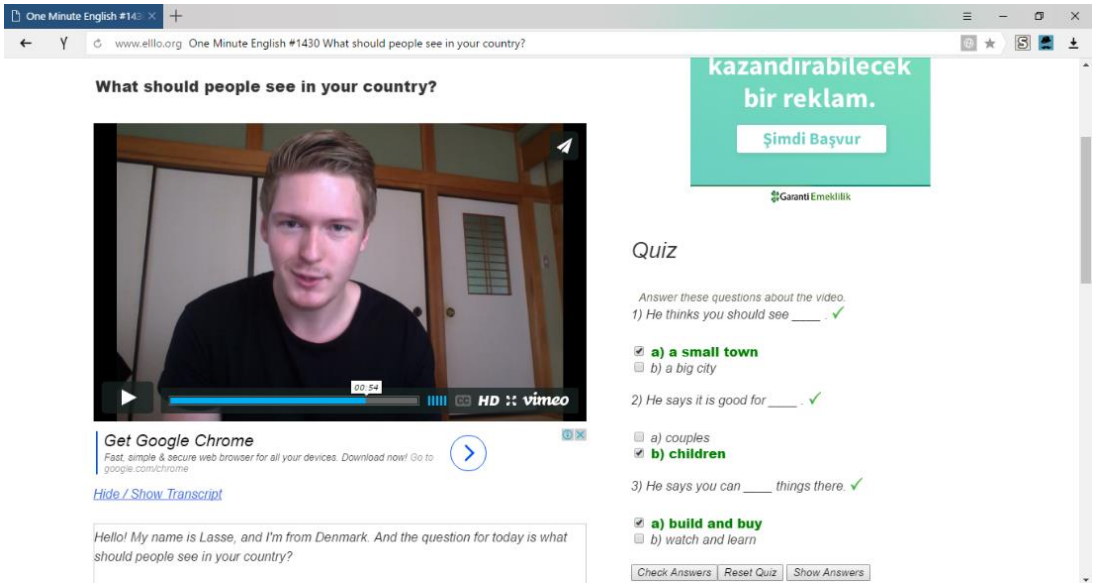


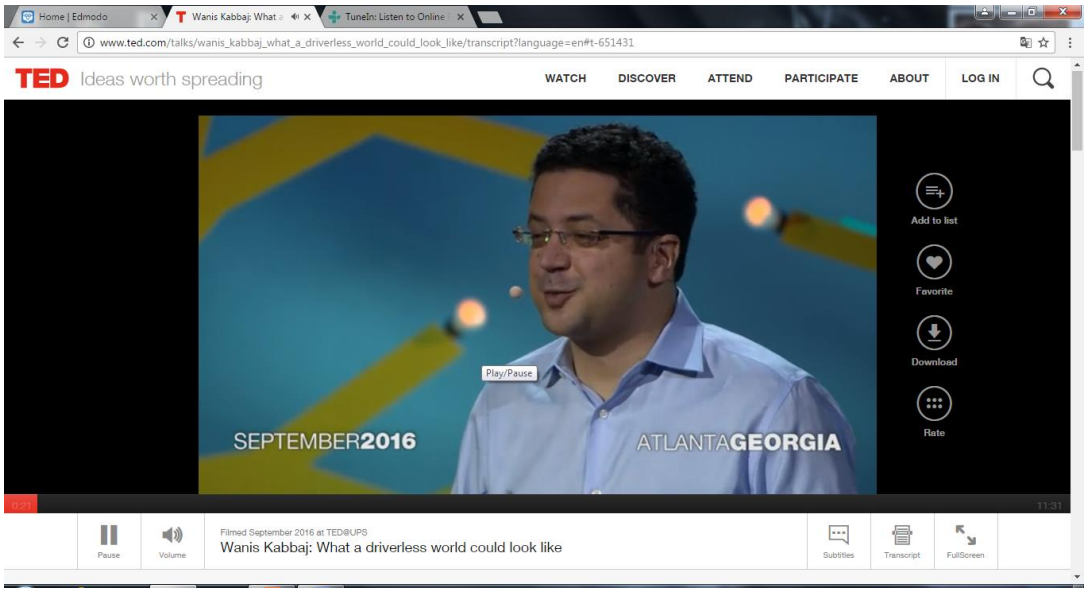
Screenshots from the Reflection Forms in Week 2 (Reading Tools):



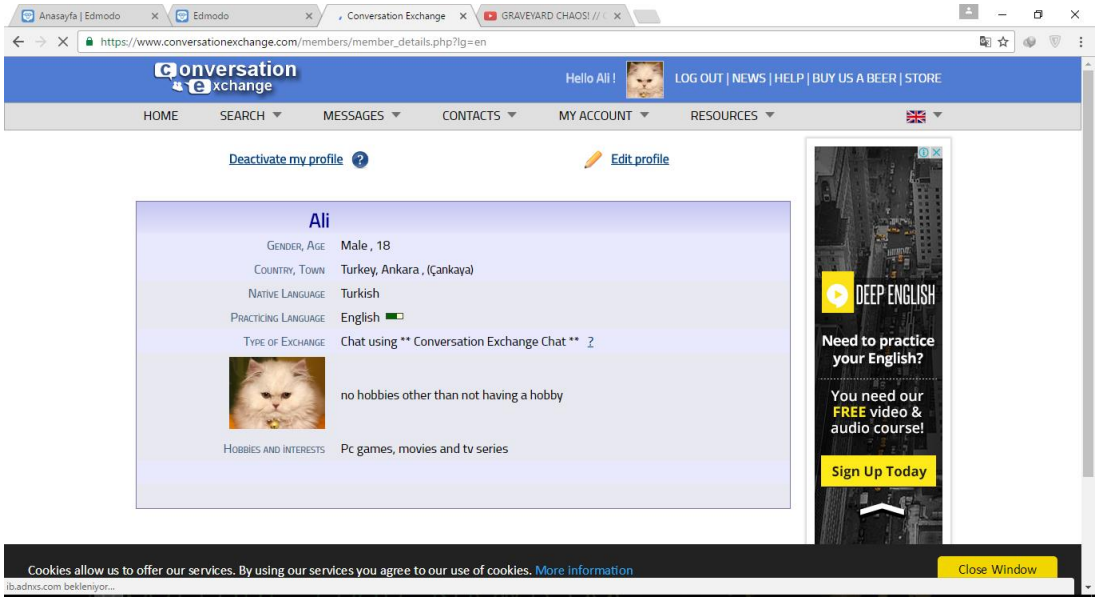


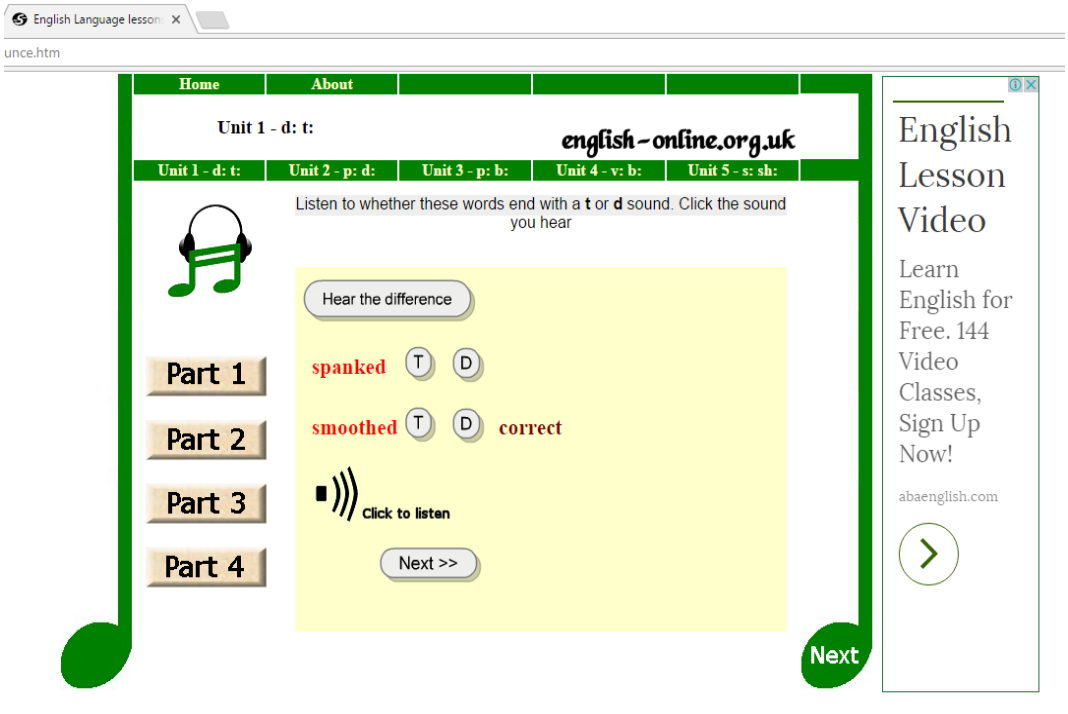
Screenshots from the Reflection Forms in Week 3 (Listening Tools):



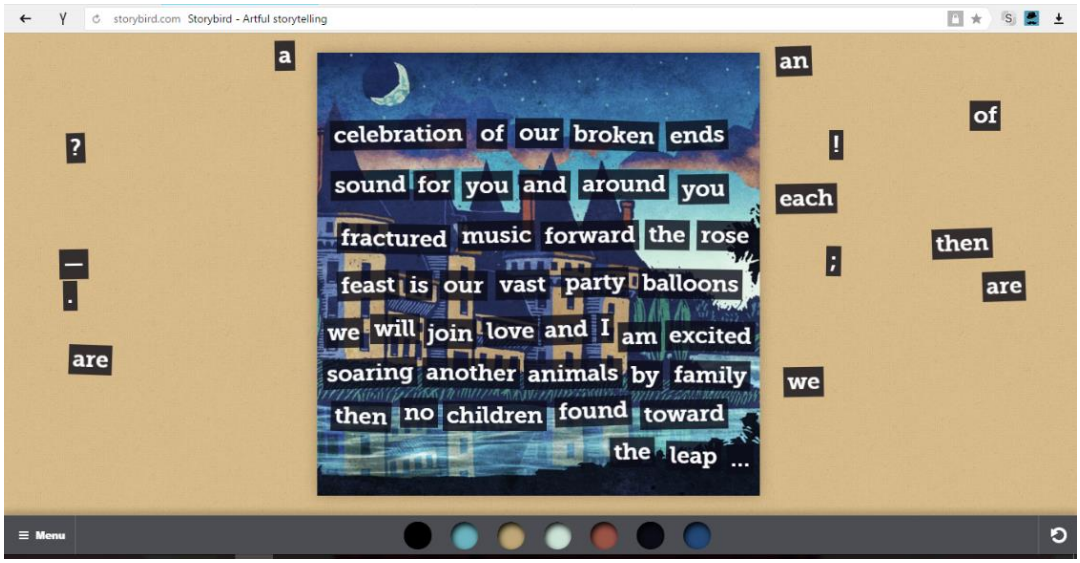


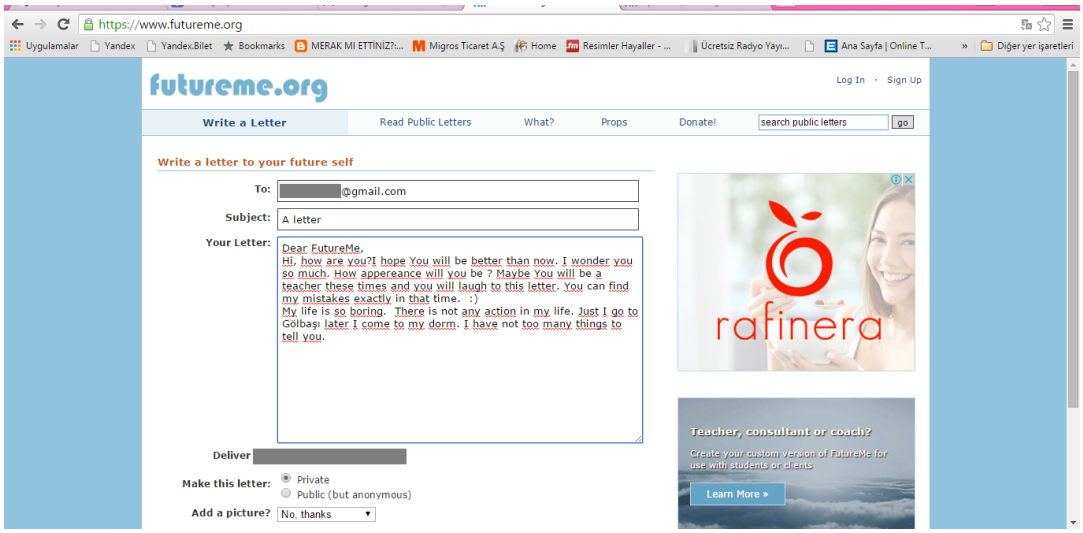
Screenshots from the Reflection Forms in Week 4 (Speaking Tools):



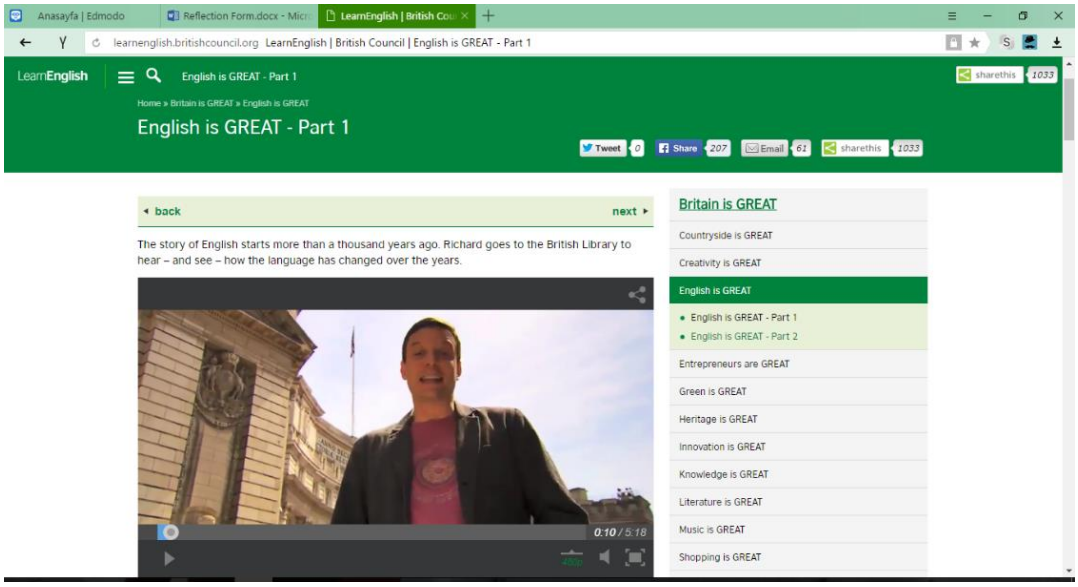


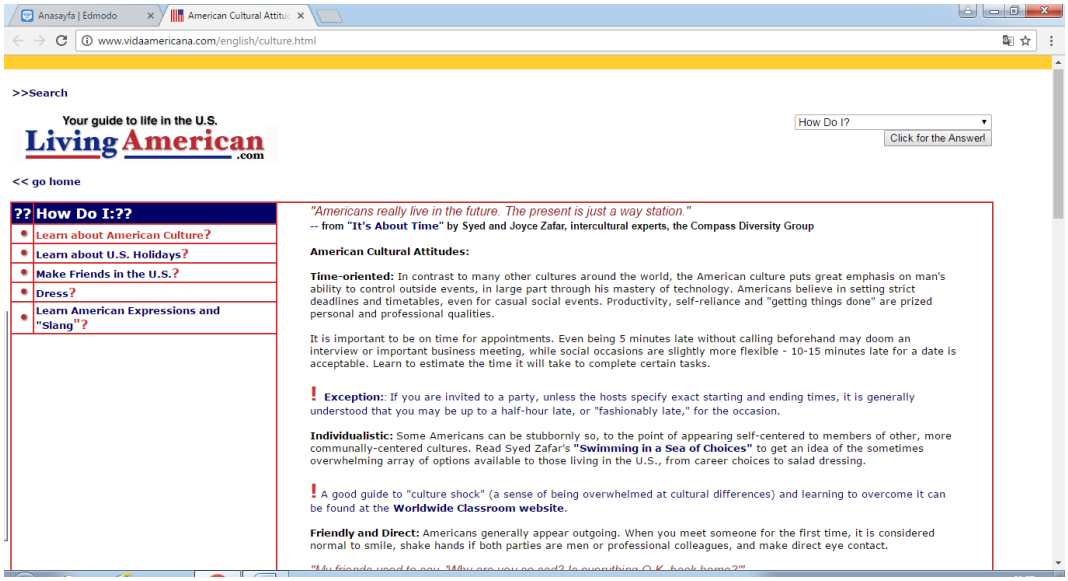
Screenshots from the Reflection Forms in Week 5 (Writing Tools):



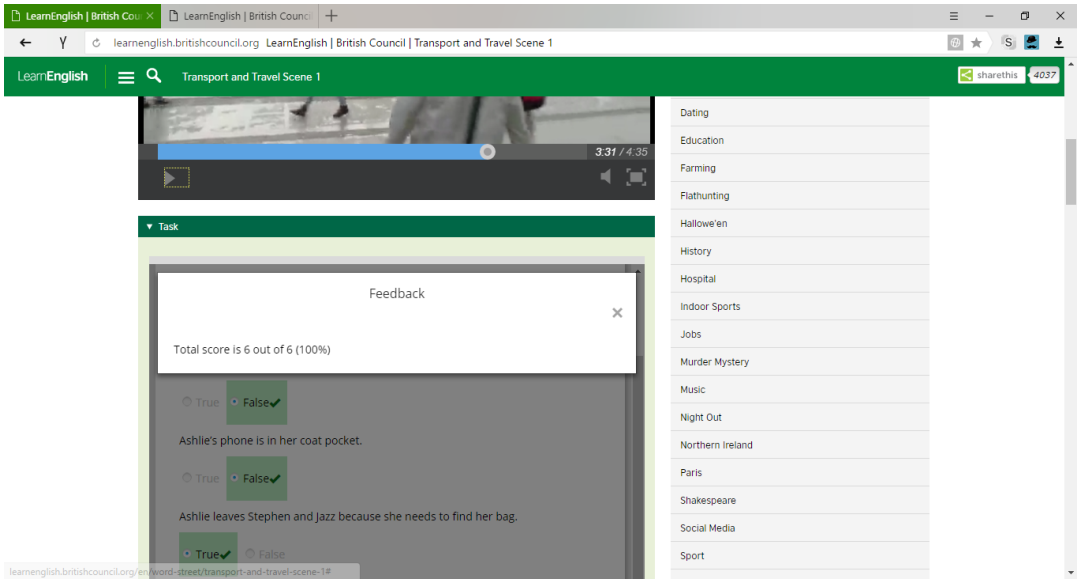


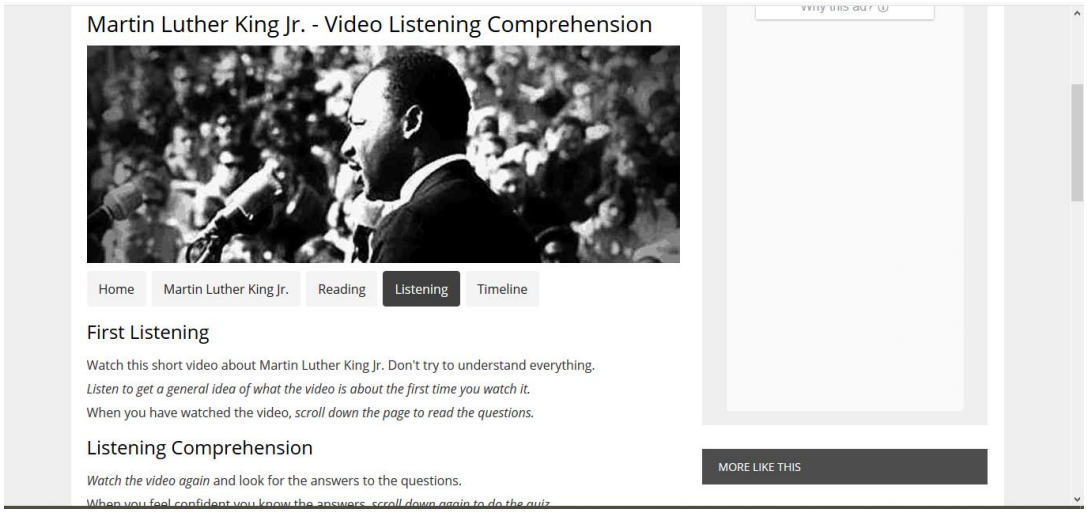
Screenshots from the Reflection Forms in Week 6 (Culture Tools):





Screenshots from the Reflection Forms in Week 7 (Integrated Skills Tools):





Part I

1. Name Surname	
2. Date	
3. Learning focus of the week	
4. The tool you want to evaluate	
5. How did you use this tool to practise English?	
6. How much time did you spend using this tool?	
7. A material that you found by using this tool (Please specify the link of the material as well as your description of it.)	

Part II

Answer the questions below by choosing YES or NO for each (For each question, put an X in the relevant box). You can add your additional comments for each part.

The tool…	**YES**	**NO**	**Comments**
1. is easy to use.			
2. is enjoyable to use.			
3. matches my personal learning style.			
4. can help me improve my English			

My performance:	**YES**	**NO**	**Comments**
5. I used this tool effectively to practise English.			
6. I have noticed my strengths and weaknesses in English while using this tool.			
7. I found materials that match my language level via this tool.			
8. I found materials that match my personal interests via this tool.			
9. I need more language input to use this tool.			
10. I need more technical assistance to use this tool.			
11. I can use this tool for my English studies by myself.			

My final evaluation:	YES	NO	Comments
12. I am going to continue using this tool for my English studies.			

My additional comments/suggestions on using this tool in learning English:

Screenshot(s):

E. QUESTIONNAIRE

PART I: BACKGROUND INFORMATION QUESTIONS

1. **Age: _____**
2. **Gender:** a. Male b. Female
3. **Department:**

   a. English Language Teaching b. English Language and Literature

4. **Type of the high school you graduated from:**
   a. Regular high school
   b. Anatolian high school
   c. Anatolian teacher training high school
   d. Technical/Vocational high school
   e. Private high school
   f. Other (Please specify): _____
5. **How long have you been learning English?**

   a. Less than 3 years b. 3-6 years c. 7-10 years d. more than 10 years

6. **How much time do you spend studying English outside the class per day in general?**

   a. Not at all b. Less than 2 hours c. 2-4 hours d. more than 4 hours

7. **Do you have a personal computer?**

   a. Yes b. No

8. What do you use to connect to the Internet? (You can choose more than one.)

a. my personal computer
b. my mobile phone
c. the computers at school
d. my friend's computer
e. Internet cafes
f. Other (Please specify): _____

9. How much time do you spend on the Internet in your daily life?

a. Not at all b. Less than 2 hours c. 2-4 hours
d. 5-7 hours e. more than 7 hours

10. For what purposes do you use the Internet? Choose from the list below (You can choose more than one). Then rank the purposes you have chosen in order of frequency by using the grid below (1= most frequent).

a. communicating with other people
b. entertainment
c. improving my English
d. learning new things
e. doing schoolwork
f. Other (Please specify): _____

_____

11. Have you ever used the Internet as part of your English class before?

a. Yes b. No

If yes, how did you use it?

_____

_____

12. How many of the websites you visit on the Internet are in English?

a. Not at all b. Less than 30% c. 30% to 60% d. more than 60%

PART II: LEARNER AUTONOMY QUESTIONNAIRE

Please read the statements below carefully, and for each of them, choose the option that is most suitable for you.

1: Strongly Disagree
2: Disagree
3: Neutral
4: Agree
5: Strongly Agree

		1	**2**	**3**	**4**	**5**
1	I want to learn more than I am required with my all efforts.					
2	I track my progress while learning English.					
3	I like projects and activities where I can work on my own.					
4	I can learn English grammar on my own/without needing a teacher.					
5	I deduce the meaning of a word by identifying the prefix and suffix of the word.					
6	I can identify and select the additional materials to support the subjects I study.					
7	I can evaluate myself in terms of my assignments and projects.					
8	I like to actively participate in the course.					
9	I have several strategies to understand and remember English grammar.					
10	I can learn a topic by studying on my own if I cannot learn it in the classroom.					
11	I am aware of my learning strategies.					
12	I have some games to keep the words I learn in my mind.					
13	I am responsible for my own learning.					
14	I like my way of studying English.					
15	I know how to study English by myself.					

PART III: OPEN-ENDED QUESTIONS

Please answer the questions below by giving details and examples for each.

1. Do you think technology can help you in learning English? Why/Why not?

_____

_____

_____

_____

_____

2. Do you feel comfortable while using technology to learn English? Why/Why not?

_____

_____

_____

_____

_____

3. Which websites/software/online tools would you like to use as part of your English study in preparatory school?

_____

_____

_____

_____

_____

4. Any other comments, questions and/or suggestions?

_____

_____

_____

_____

_____

F. SEMI-STRUCTURED INTERVIEW GUIDE

Part I: The effects of the CALL treatment on learning English

1. What did you most like about using technology to practise English? Why? Please state your reasons with specific examples.
2. What did you most dislike about using technology to practise English? Why? Please state your reasons with specific examples.
3. Do you think this project has helped you to improve your English? If yes, how? Please give specific examples. If no, why not?
4. Do you think this project has helped you to study English more effectively? If yes, how? Please give specific examples. If no, why not?

Part II: The effects of the CALL treatment on learner autonomy

5. When you compare your learning before and after this project, has using technology helped you become a more independent learner? Why / Why not? If yes, state at least two ways it helped you.
6. Has technology helped you in doing the following? Why / Why not? If yes, state at least two ways it helped you.
    a. depending less on the teacher
    b. identifying your learning goals
    c. choosing learning materials and activities
    d. evaluating your learning performance
    e. planning your English studies
    f. using learning strategies

Part III: Suggestions and final comments

7. What are your suggestions to improve this project?
8. Are you going to continue using technology to practise English? Why / Why not? If yes, how?
9. Are there any other points you would like to add related to using technology in English language learning?

G. INFORMED CONSENT FORM FOR THE EXPERIMENTAL GROUP

INFORMED CONSENT FORM

This is a study conducted by Zülal Kızmaz, a Master of Arts student in English Language Teaching at Middle East Technical University, under the supervision of Assoc. Prof. Dr. Perihan Savaş. The aim of the study is to collect data about the use of technology to promote learner autonomy.

If you accept to participate in the study, for seven weeks, you will be asked to take part in a weekly 50-minute workshop in which various technological tools will be introduced, then to use those tools out of the class, and complete a reflection form at the end of each week. The workshops will last about 50 minutes. In addition, you will be asked to complete two questionnaires at the beginning and at the end of the seven-week period. At the end of the study, you may be invited to take part in a semi-structured oral interview related to the study.

Participation in the study is on a voluntary basis. No personal identification information is required during the process of data collection. Your answers will be kept strictly confidential and evaluated only by the researcher; the obtained data will be used for scientific purposes.

The data collection tools do not contain questions that may cause discomfort in the participants. However, during participation, for any reason, if you feel uncomfortable, you are free to quit at any time. In such a case, it will be sufficient to tell the person conducting the study that you would like to quit the study.

After the data collection process is completed, your questions related to the study will be answered. We would like to thank you in advance for your participation in this study.

Zülal Kızmaz
zulal.kizmaz@metu.edu.tr
Middle East Technical University

I am participating in this study totally on my own will and am aware that I can quit participating at any time I want. I give my consent for the use of the information I provide for scientific purposes.

Name Surname Date Signature

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H. INFORMED CONSENT FORM FOR THE CONTROL GROUP

INFORMED CONSENT FORM

This is a study conducted by Zülal Kızmaz, a Master of Arts student in English Language Teaching at Middle East Technical University (METU), under the supervision of Assoc. Prof. Dr. Perihan Savaş. The aim of the study is to collect data about the use of technology to promote learner autonomy.

If you accept to participate in the study, you will be asked to complete a questionnaire which will take about 15 minutes to complete. Participation in the study is on a voluntary basis. Your answers will be kept strictly confidential and evaluated only by the researcher; the obtained data will be used for scientific purposes.

The questionnaires do not contain questions that may cause discomfort in the participants. However, during participation, for any reason, if you feel uncomfortable, you are free to quit at any time. In such a case, it will be sufficient to tell the person conducting the survey that you will not complete the questionnaire.

After the data collection process is completed, your questions related to the study will be answered. We would like to thank you in advance for your participation in this study.

Zülal Kızmaz
zulal.kizmaz@metu.edu.tr
Middle East Technical University

I am participating in this study totally on my own will and am aware that I can quit participating at any time I want. I give my consent for the use of the information I provide for scientific purposes.

Name Surname Date Signature

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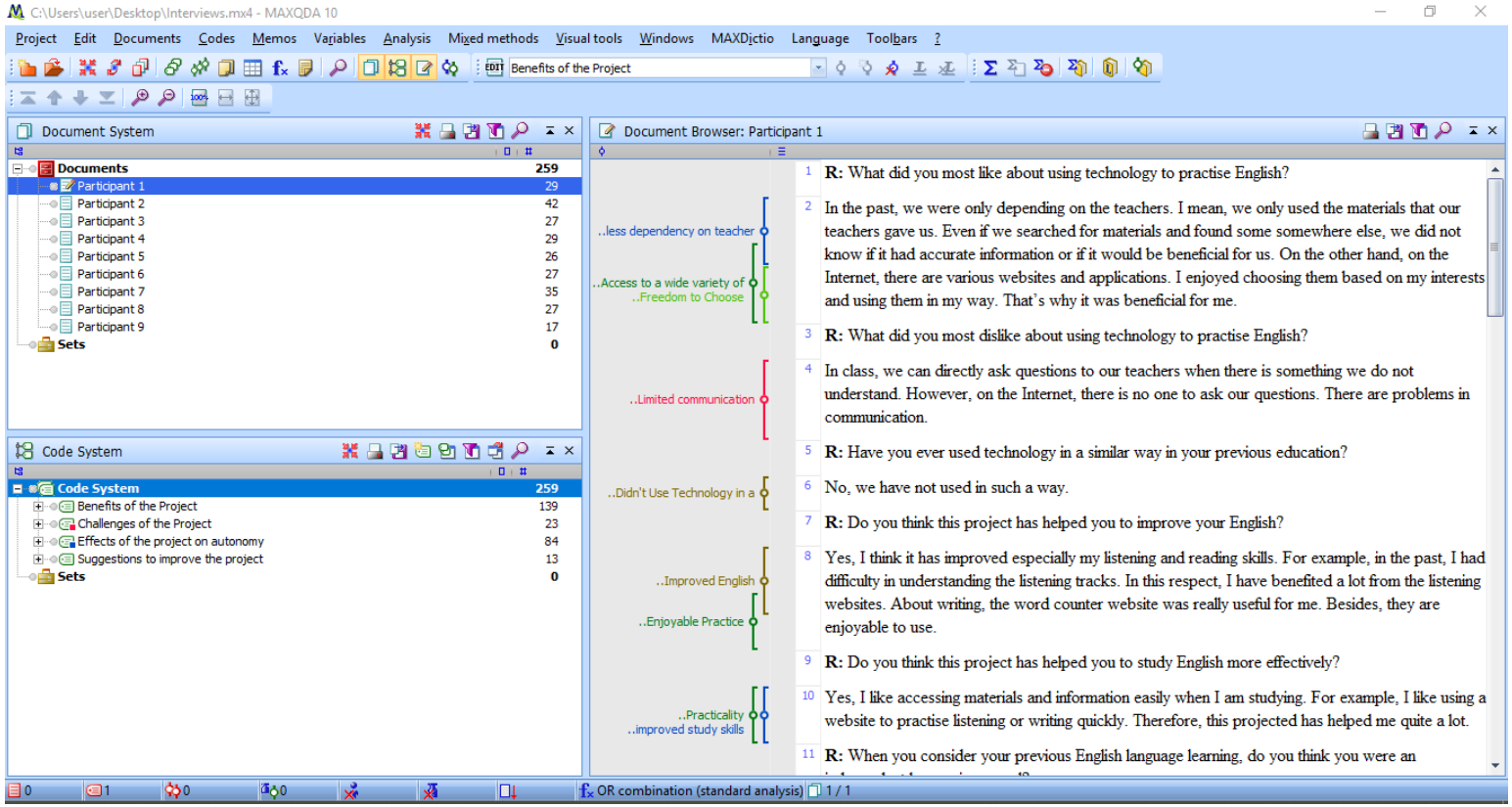
C:\Users\user\Desktop\Interviews.mx4 - MAXQDA 10
Project Edit Documents Codes Memos Variables Analysis Mixed methods Visual tools Windows MAXDictio Language Toolbars ?
Benefits of the Project
Document System
Documents 259
Participant 1 29
Participant 2 42
Participant 3 27
Participant 4 29
Participant 5 26
Participant 6 27
Participant 7 35
Participant 8 27
Participant 9 17
Sets 0
Code System
Code System 259
Benefits of the Project 139
Challenges of the Project 23
Effects of the project on autonomy 84
Suggestions to improve the project 13
Sets 0
Document Browser: Participant 1
..less dependency on teacher
..Access to a wide variety of
..Freedom to Choose
..Limited communication
..Didn't Use Technology in a
..Improved English
..Enjoyable Practice
..Practicality
..improved study skills
1 R: What did you most like about using technology to practise English?
2 In the past, we were only depending on the teachers. I mean, we only used the materials that our teachers gave us. Even if we searched for materials and found some somewhere else, we did not know if it had accurate information or if it would be beneficial for us. On the other hand, on the Internet, there are various websites and applications. I enjoyed choosing them based on my interests and using them in my way. That's why it was beneficial for me.
3 R: What did you most dislike about using technology to practise English?
4 In class, we can directly ask questions to our teachers when there is something we do not understand. However, on the Internet, there is no one to ask our questions. There are problems in communication.
5 R: Have you ever used technology in a similar way in your previous education?
6 No, we have not used in such a way.
7 R: Do you think this project has helped you to improve your English?
8 Yes, I think it has improved especially my listening and reading skills. For example, in the past, I had difficulty in understanding the listening tracks. In this respect, I have benefited a lot from the listening websites. About writing, the word counter website was really useful for me. Besides, they are enjoyable to use.
9 R: Do you think this project has helped you to study English more effectively?
10 Yes, I like accessing materials and information easily when I am studying. For example, I like using a website to practise listening or writing quickly. Therefore, this projected has helped me quite a lot.
11 R: When you consider your previous English language learning, do you think you were an
OR combination (standard analysis) 1 / 1

J. TURKISH SUMMARY / TÜRKÇE ÖZET

Öğrenen özerkliği alan yazında pek çok farklı tanıma sahip olsa da, temel olarak öğrencinin kendi öğrenmesini kontrol altına alma kapasitesi olarak tanımlanabilir (Benson, 2001). Bu kavram, yabancı dil öğretimi alanında sıklıkla kullanılan ve araştırılan bir kavramdır. Dil eğitiminde, davranışçı yaklaşımlardan uzaklaşılarak daha iletişimsel yaklaşımlara yönelinmesi, öğrenci merkezlilik kavramına önem verilmesine neden olmuştur (Benson, 2001). Bu yaklaşım ile birlikte, öğrenme ve öğretme sürecinin merkezinde öğretmenden çok öğrenci yer almaya başlamıştır ve öğrenciler, hedef dilde iletişim kurmayı, iş birliği yapmayı ve problem çözme uygulamalarında yer almayı gerektiren bir öğrenme sürecinin aktif katılımcıları olarak görülmüştür (Nunan, 1988). Ayrıca eğitimciler öğrencilerin bireysel ihtiyaçlarına, niteliklerine, amaçlarına ve tercihlerine daha çok odaklanmışlardır. Dil eğitimindeki bu yenilikler ile birlikte, öğrenen özerkliği kavramı da yabancı dil öğretimi alanına girmiş ve yoğun ilgi görmüştür (Schwienhorst , 2008).

Öğrenen özerkliğinin dil öğrenimi için sunduğu, daha etkili öğrenme (Dam, 1995), öğrencilerin öğrenme sürecine daha etkin bir biçimde katılmaları ve öğrenme stratejileri geliştirmeleri (Opalka, 2001, aktaran Balçıkanlı, 2006) gibi birçok faydasının olduğu bilinmektedir. Bu nedenle, öğrenen özerkliğinin yaygınlaştırılması bir eğitim amacı olarak kabul edilmektedir. Öğrenen özerkliğini desteklemek için pek çok farklı yaklaşım önerilmiştir ve teknoloji-temelli yaklaşımlar bunlardan biridir (Benson, 2001).

Bununla birlikte, pek çok bağlamda, öğrenen özerkliğinin uygulamada etkili bir şekilde desteklenemediği görülmüştür. Birçok öğretmen, müfredat ve zaman kısıtlamaları, sınav temelli eğitim sistemleri, sosyo-kültürel engeller ve öğrencilerin isteksizliği gibi çeşitli nedenlerden dolayı yabancı dil öğretimi ortamlarında öğrenen özerkliğini geliştirme fırsatları bulamamaktadır (Borg & Al-Busaidi, 2012; Darsih, 2018; Salimi & Ansari, 2015; Shahsavari, 2014; Tayjasanant & Suraratdecha, 2016). Yapılan araştırmalar, benzer sorunların Türkiye'deki eğitim kurumlarında da var

olduğunu göstermektedir (Boyno, 2011; Üstünoğlu, 2009). Öğrencilerin özerklik düzeylerini ve özerkliğe yönelik görüşlerini araştıran çalışmaların birçoğu (örneğin, Barlas, 2012; Baylan, 2007; Dokuz, 2009; Tursun, 2010; Ünal, 2015; Yapıörer, 2013; Yıldırım, 2005) öğrencilerin öğrenmelerinde sınırlı sorumluluk aldıklarını ve çoğunlukla öğretmenin yetki ve yönlendirmesini kabul ettiklerini bildirmiştir.

Öğrenen özerkliğinin desteklenmesi ile ilgili uygulamalardaki bu sorunlar dikkate alınarak, bu çalışmada, teknolojinin ve özellikle bilgisayar destekli dil öğreniminin yabancı dil olarak İngilizce eğitimi bağlamında öğrenen özerkliğini teşvik etmek için kullanımını araştırmak amaçlanmıştır. Buna dayanarak, çalışma aşağıdaki soruların cevaplarını araştırmayı hedeflemiştir:

1. Bilgisayar destekli dil öğrenimi uygulaması, yükseköğretim seviyesindeki İngilizce öğrencilerinin kendi algıladıkları özerklik seviyelerini nasıl etkiler?

   a) Bilgisayar destekli dil öğrenimi uygulaması, katılımcıların kendi algıladıkları özerklik seviyelerini gruplar arası düzeyde etkiler mi?

   b) Bilgisayar destekli dil öğrenimi uygulaması, katılımcıların kendi algıladıkları özerklik seviyelerini grup içi düzeyde etkiler mi?

2. Yükseköğretim seviyesindeki İngilizce öğrencilerinin bilgisayar destekli dil öğrenimi uygulaması konusundaki görüşleri nelerdir?

   a) Katılımcıların, bilgisayar destekli dil öğrenimi uygulamasından önce ve sonra, İngilizce öğreniminde teknolojiyi kullanma konusundaki görüşlerindeki değişimler nelerdir?

   b) Katılımcılara göre bilgisayar destekli dil öğrenimi uygulamasının olumlu yanları nelerdir?

   c) Katılımcılara göre bilgisayar destekli dil öğrenimi uygulamasının olumsuz yanları nelerdir?

   d) Katılımcılara göre bilgisayar destekli dil öğrenimi uygulamasının öğrenen özerkliği üzerindeki etkileri nelerdir?

e) Katılımcıların bilgisayar destekli dil öğrenimi uygulamasını geliştirmeye yönelik önerileri nelerdir?

Bu soruları ele almak amacıyla, yarı deneysel bir çalışma tasarlanmıştır. Toplam 50 hazırlık sınıfı öğrencisiyle yürütülen çalışmada, deney ve kontrol grupları dört farklı sınıfta öğrenim gören 25'er öğrenciden oluşmuştur. Deney grubunda, yedi hafta boyunca bilgisayar destekli dil öğrenimini temel alan deneysel bir uygulama gerçekleştirilmiştir. Bu süreçte, kontrol grubu özel bir müdahaleye maruz kalmadan hazırlık sınıfı derslerine devam etmiştir. İki grubun kendi algıladıkları özerklik seviyelerini karşılaştırmak amacıyla, müdahale öncesi ve sonrasında her iki gruba bir öğrenen özerkliği anketi uygulanmıştır. Ayrıca, öğrencilerin bilgisayar destekli dil öğrenimi uygulaması hakkındaki görüşlerini araştırmak amacıyla, uygulama sonunda deney grubundan 9 katılımcı ile yarı yapılandırılmış görüşmeler gerçekleştirilmiştir.

Çalışmanın yarı deneysel olmasının nedeni, deney ve kontrol gruplarının, okulda halihazırda bulunan dört sınıftan yararlanılarak oluşturulmuş olmasıdır. Bu nedenle, başlangıçta gruplar arasında bulunan farklılıkların üstesinden gelmek amacıyla, Creswell (2009) ve Dörnyei (2007) tarafından önerildiği gibi, öğrencilerin yer alacakları grubu (deney veya kontrol grubu) seçmelerine izin verilmemiştir. Bunun yerine, sınıflar kontrol veya deney grubunda olmak üzere araştırmacı tarafından tayin edilmiştir. Ayrıca, iki grup çalışma bulguları üzerinde etkisi olabilecek değişkenler açısından birbirine benzemektedir. Katılımcıların tamamı orta düzey İngilizce bilgisine sahip hazırlık okulu öğrencileridir. Ayrıca, deney ve kontrol grubundaki katılımcılar farklı öğretmenlere sahip olsalar da okuldaki tüm öğretmenler tarafından takip edilmesi gereken standart bir öğretim ve değerlendirme yöntemi ile eğitim görmüşlerdir.

Çalışma, Türkiye'nin Ankara ilinde bulunan bir devlet üniversitesinin hazırlık okulunda gerçekleştirilmiştir. Okuldaki tüm sınıflarda, aynı müfredatı takip eden haftalık 24 saatlik bir İngilizce eğitimi verilmektedir. Okulun Program ve Materyal Geliştirme Birimi tarafından tasarlanan müfredatı ve haftalık programı izleyen dersler, öğretim görevlileri tarafından aynı şekilde öğretilmektedir. Dersler, programda kullanılan ders kitaplarına dayalı olarak, önceden birim tarafından belirlenen günlerde

okuma, yazma, konuşma, dilbilgisi ve kelime bilgisi becerilerinin öğretilmesini içermektedir. Derslerde kullanılan tüm ek materyaller ve aktiviteler de aynı birim tarafından belirlenmektedir. Her iki gruptaki öğrenciler, okulun Ölçme ve Değerlendirme Biriminin hazırladığı araç ve yöntemler kullanılarak, birimin belirlediği tarihlerde öğretim görevlileri tarafından aynı şekilde değerlendirilmektedir.

Çalışmanın anket katılımcıları, çalışmanın yürütüldüğü hazırlık okulundaki dört farklı sınıfta okuyan İngilizce öğrencileridir ve uygun örnekleme yöntemi kullanılarak seçilmişlerdir. Deney grubunda, 22 katılımcı 18-20 yaş arasındayken, 2 katılımcı 21-24 yaşları arasında ve 1 katılımcı 25-27 yaşları arasındadır. Katılımcıların 21'i kadın, 4'ü erkektir. Katılımcıların 19'u İngilizce Öğretmenliği bölümüne kayıtlı iken, 6 katılımcı İngiliz Dili ve Edebiyatı öğrencisidir. Okudukları lise türü bakımından, 14 katılımcı Anadolu liselerinden, 6 katılımcı Anadolu öğretmen liselerinden, 3 katılımcı özel okullardan, 1 katılımcı normal liseden ve 1 katılımcı imam hatip lisesinden mezun olmuştur. İngilizce öğrenme süreleri ile ilgili olarak, katılımcıların 18'i 7-10 yıl, 4'ü 3-6 yıl, 3'ü ise 10 yıldan daha uzun süredir İngilizce eğitimi gördüğünü belirtmiştir. Gruptaki 12 öğrenci günde 2 saatten az, diğer 12 öğrenci 2-4 saat ve 1 öğrenci 4 saatten fazla süre sınıf dışında İngilizce çalıştığını belirtmiştir.

Kontrol grubunda, yaşları 18-20 arasında değişen 23 katılımcı, 21-24 arasında değişen 1 katılımcı ve 25-27 arasında olan 1 katılımcı vardır. Katılımcıların 19'u kadın, 6'sı erkektir. Grupta, 20 öğrenci İngilizce Öğretmenliği ve 5 öğrenci İngiliz Dili ve Edebiyatı bölümüne kayıtlıdır. Katılımcıların 14'ü Anadolu lisesi mezunu, 3'ü Anadolu öğretmen lisesi mezunu ve 3'ü normal lise mezunudur. İngilizce öğrenim süreleri hakkında, 14 katılımcı 7-10 senedir, 8 katılımcı 10 yıldan fazla, 3'ü 3-6 senedir İngilizce eğitimi aldığını belirtmiştir. Sınıf dışında İngilizce çalışma süreleri ile ilgili olarak, 12 katılımcı günde 2 saatten az, 8 katılımcı günde 2-4 saat, 4 katılımcı 4 saatten fazla çalıştıklarını belirtirken, 1 katılımcı hiç çalışmadığını belirtti.

Yukarıdaki veriler, iki grubun demografik özellikleri açısından benzer olduğunu göstermektedir. Anket verileri, iki grubun bilgisayar ve internet kullanımı açısından da yakın olduklarını göstermiştir. Deney grubunda 14 katılımcı, kontrol grubunda ise 15 katılımcı kişisel bir bilgisayara sahip olduklarını belirtmiştir. İnternet erişimi için

her iki gruptaki katılımcılar tarafından en çok kullanılan araçlar cep telefonu ve kişisel bilgisayar olmuştur. Deney grubu katılımcılarının internette geçirdikleri süreler 7 katılımcı tarafından günde 2 saatten az, 11 katılımcı tarafından 2-4 saat, 5 katılımcı tarafından 5-7 saat ve 2 katılımcı tarafından 7 saatten fazla olarak belirtilmiştir. Kontrol grubunda ise, 12 katılımcı internette günde 2-4 saat, 7 katılımcı 5-7 saat ve 6 katılımcı 2 saatten az zaman geçirdiklerini belirtmiştir. Anket verileri, her iki gruptaki katılımcıların interneti eğlence, iletişim, okul çalışması, İngilizce öğrenimi ve yeni şeyler öğrenmek için kullandığını göstermiştir. Deney grubunda 15 katılımcı, kontrol grubunda ise 12 katılımcı hazırlık okuluna gelmeden önce interneti İngilizce çalışmaları için kullandıklarını ifade etmiştir. Son olarak, deney grubundaki katılımcıların 14'ü internette ziyaret ettikleri web sitelerinin %30'undan daha azının İngilizce olduğunu, 9 katılımcı %30 ila %60'ının İngilizce olduğunu, bir katılımcı %60'ından fazlasının İngilizce olduğunu belirtmiştir ve başka bir katılımcı da ziyaret ettiği web sitelerinin hiçbirinin İngilizce olmadığını belirtmiştir. Kontrol grubunda ise, 14 katılımcı ziyaret ettikleri web sitelerinin %30'undan daha azının, 6 katılımcı %30 ila %60'ının ve 5 katılımcı %60'ından fazlasının İngilizce olduğunu belirtmiştir.

Yarı yapılandırılmış görüşmeler için katılımcılar amaçlı örnekleme yoluyla seçilmiş ve örnekleme stratejisi olarak maksimum varyasyon örneklemesi kullanılmıştır. Buna göre, katılımcılar anketin ikinci bölümünden aldıkları puanlara göre, bir başka deyişle, kendi algıladıkları özerklik seviyelerindeki değişimlere göre seçilmiştir. Deney grubundaki her katılımcı için anket öncesi ve sonrası puanlar arasındaki fark hesaplandıktan sonra, anket puanlarında en yüksek artış gösteren üç katılımcı, ortalama artış gösteren üç katılımcı ve düşüş gösteren üç katılımcı belirlenmiş ve görüşme katılımcıları olarak seçilmiştir.

Çalışmada, bilgisayar destekli dil öğreniminin öğrenen özerkliği üzerindeki etkilerini araştırmak için deneysel bir uygulama yürütülmüştür. Yedi hafta süren uygulama kapsamında, her hafta deney grubundaki katılımcılara belirli bir dil bileşeni ile ilgili çeşitli çevrimiçi araçlar tanıtılmıştır. Bu dil bileşenleri haftalara göre sırasıyla kelime bilgisi, okuma, dinleme, konuşma ile telaffuz, yazma, kültür ve entegre beceriler idi. Çevrimiçi araçlar araştırmacı tarafından bir dizi kritere dayanarak seçilmiştir. İlk

olarak, öğrencilere seçenekler sunabilmek amacıyla, farklı öğrenme stilleri, tercihleri, ihtiyaçları ve ilgi alanlarına hitap edebilecek çeşitlilikte araçlar uygulamaya dahil edilmeye çalışılmıştır. İkinci olarak, öğrencilerin hedef dili gerçekçi bağlamlarda öğrenmelerini teşvik etmek için, gerçek dil içeriği içeren iletişimsel araçlar seçilmiştir. Araçların seçiminde dikkate alınan bir başka kriter kullanıcı dostu olmalarıydı. Öğrencilerin araçları kullanmaları için daha cesaretlendirici olacağı düşünüldüğünden, kullanımı kolay olan araçlar seçilmiştir. Son olarak, tüm öğrencilerin finansal sorunlar yaşamadan araçlara erişebilmesi için tüm araçların ücretsiz olmasına dikkat edilmiştir.

Yukarıdaki kriterlere göre belirlenen web siteleri ve uygulamalar, her hafta 50 dakikalık bir ders saatinde gerçekleştirilen bir sunum ile, deney grubundaki katılımcılara tanıtılmıştır. Her sunumda, araştırmacı tarafından hazırlanan bir PowerPoint slayt gösterisi kullanılmıştır. Her sunum, öğrencilere haftanın dil bileşeni ile ilgili birkaç sorunun sorulduğu bir bölüm ile başlamıştır. Bu sorular, öğrencilerin bu dil bileşeninde kendilerini geliştirmek için nasıl çalıştıkları ve çalışmalarında teknolojiyi kullanıp kullanmadıkları ile ilgilidir. Daha sonra, araştırmacı slayt gösterisini kullanarak çevrimiçi araçları öğrencilere tanıtmıştır. Her aracın adı ve bağlantı adresi paylaşılmış, kullanımı açıklanmış, bu araçların İngilizce pratiği için nasıl kullanılabileceğine dair fikirler verilmiş ve öğrencilere bu konudaki fikirleri ve önerileri sorulmuştur. Araçların sunumunun ardından araştırmacı, öğrencilerin sunumda belirtilen araçları bir hafta boyunca sınıf dışı çalışmalarında kullanmaları ve ardından proje boyunca her hafta için aynı olan iki görevi tamamlamaları gerektiğini açıklamıştır.

İlk görev olarak, öğrencilerden hafta boyunca en çok kullandıkları araç hakkında, araştırmacı tarafından verilen değerlendirme formunu doldurmaları ve *Edmodo* (https://www.edmodo.com/) isimli internet sitesine yüklemeleri beklenmiştir. Değerlendirme formu, katılımcıların seçtikleri aracı ve kendi performanslarını değerlendirmelerini isteyen açık uçlu sorulardan ve evet/hayır maddelerinden oluşmaktadır. Katılımcılara her hafta, üzerinde herhangi bir değişiklik yapılmadan aynı form verilmiştir. Değerlendirme formunun temel amacı, öğrenenlere öğrenme sürecinde rehberlik etmek, öğrenmelerini değerlendirmelerini teşvik etmek ve bu

şekilde öğrenen özerkliğini desteklemektir. Öğrencilerin ikinci görevi ise hafta boyunca kullandıkları araçlardan birini seçip bunu *Edmodo*'da sınıf arkadaşlarına önermektir. Bu görevin amacı, katılımcıları birbirleriyle etkileşime girmeye ve uygulama sırasında iş birlikçi bir şekilde öğrenmeye teşvik etmektir. Verilen haftalık görevler, çalışma sırasında katılımcıların çevrimiçi araçları kullanıp kullanmadıklarını takip etme amacına da hizmet etmiştir. Uygulama sırasında araştırmacı *Edmodo* aracılığıyla verilen görevlerin düzenli olarak yapılıp yapılmadığını kontrol etmiştir.

Deneysel müdahalenin öncesi ve sonrasında, her iki gruba bir anket uygulanmıştır. Bu anket üç bölümden oluşmuştur. Birinci bölüm araştırmacı tarafından tasarlanmıştır ve katılımcılar hakkında demografik veri toplamayı amaçlayan 12 soruyu içermektedir. "Öğrenen Özerkliği Anketi" olarak adlandırılan ikinci bölüm, öğrencilerin özerklik düzeylerini belirlemek için tasarlanmış 15 maddelik Likert tipi bir ölçekten oluşmaktadır. Ölçek, aslen Demirel (2002, aktaran Balçıkanlı, 2006) tarafından tasarlanmış ve daha sonra Balçıkanlı (2006) tarafından uyarlanmıştır. Kişisel farkındalığa sahip olma, sorumluluk sahibi olma, bağımsız çalışma yöntemleri ve bağımsız dil öğrenme yöntemleri ile ilgili maddeler içermektedir. Anketin üçüncü kısmı, 2a numaralı araştırma sorusunu cevaplamak amacıyla araştırmacı tarafından tasarlanmıştır. Sadece deney grubuna verilen bu bölüm, İngilizce öğreniminde teknoloji kullanımı ile ilgili açık uçlu sorulardan oluşmaktadır. Anketin tüm bölümleri İngilizce olarak uygulanmıştır. Katılımcılar orta düzeyde İngilizce bilgisine sahip olduğundan, anketi zorluk çekmeden tamamlayabilecekleri düşünülmüştür.

Ankete ek olarak, deneysel müdahaleden sonra deney grubundan 9 katılımcı ile yarı yapılandırılmış sözlü görüşmeler de yapılmıştır. Görüşmelerde, katılımcıların bilgisayar destekli dil öğrenimi uygulaması ile ilgili görüşlerini gösteren nitel veri toplanması amaçlanmıştır. Görüşmeler için, araştırmacı tarafından hazırlanan 9 soruluk bir görüşme rehberi kullanılmıştır. Tüm görüşmeler deneysel müdahale sonrası uygulanan anketi izleyen haftada yüz yüze ve Türkçe olarak yapılmış ve ses kaydına alınmıştır.

Çalışma süresince, geçerlik ve güvenilirlik ilkelerine bağlı kalınmaya dikkat edilmiştir. Balçıkanlı (2006) tarafından, kendi çalışmasında anketin ikinci bölümünün

Cronbach alfa güvenilirlik katsayısının 0.87 olduğu rapor edilmiştir. Bu, anketin güvenilirlik düzeyinin yüksek olduğunu göstermektedir. Ayrıca, anketin içeriği veya dili ile ilgili olabilecek herhangi bir problemi belirlemek amacıyla, bir pilot çalışma yürütülmüştür. Bu amaçla, anket gerçek katılımcılarla uygulanmadan önce, deney veya kontrol grubunda bulunmayan beş öğrenciye verilmiştir. Bu öğrenciler, katılımcılarla aynı okuldaki bir hazırlık sınıfında öğrenim gören ve katılıcılarla aynı düzeyde İngilizce bilgisine sahip 5 İngilizce öğrencisiydi. Pilot uygulama sırasında, öğrencilerden anketi doldurmaları ve anlama veya tamamlama konusunda zorluk yaşadıkları bölümleri not almaları istenmiştir. Bu aşamanın ardından, öğrenciler yorumlarını araştırmacı ile paylaşmıştır. Öğrencilerin geri bildirimlerine göre, üçüncü kısımdaki açık uçlu soruların ifadelerinde küçük değişiklikler yapılmıştır. Öğrenciler anketin birinci ve ikinci bölümlerindeki tüm soruları anlayabildiklerini ifade ettikleri için, bu bölümlerde herhangi bir değişiklik yapılmamıştır. Ayrıca, çalışmada güvenilirliği sağlamak amacıyla, veri üçlemesi yöntemi kullanılmıştır. Buna göre, bir anket ve yarı yapılandırılmış görüşmeler aracılığıyla hem nicel hem de nitel veri toplanmıştır. Son olarak, veri analizi sürecinde araştırmanın geçerliliğini ve güvenilirliğini desteklemek amacıyla, nitel verilerin %10'u yabancı dil eğitimi alanında çalışan bir başka araştırmacı tarafından daha analiz edilmiş ve bu çalışmanın araştırmacısı tarafından yapılan analiz ile karşılaştırılmıştır.

Anketin ikinci bölümünden elde edilen nicel veri, SPSS programının 22.0 sürümü kullanılarak analiz edilmiştir. Shapiro-Wilk normallik testi ile verinin normal dağılıma sahip olduğunun saptanmasının ardından, ortalama puanlar ve standart sapmalar hesaplanmıştır. Grupları uygulama öncesi anket puanları, uygulama sonrası anket puanları ve bunlar arasındaki farklar açısından karşılaştırmak amacıyla, bağımsız örneklem t testleri yapılmıştır. Ek olarak, her bir grubun kendi içindeki özerklik seviyelerindeki değişimi araştırmak için, uygulama öncesi ve sonrası anket puanları eşleştirilmiş örneklem t testleri kullanılarak karşılaştırılmıştır. Nitel verinin analizinde MAXQDA programı, sürüm 10 kullanılmıştır. Öncelikle, görüşmeler yoluyla toplanan veriler yazıya dökülmüş ve İngilizceye çevrilmiştir. Ardından, hem açık uçlu sorulardan hem de görüşmelerden elde edilen veriler, sürekli karşılaştırmalı yöntem (Glaser ve Strauss, 1967) kullanılarak analiz edilmiştir.

Anketin ikinci bölümündeki gruplar arası farklılıkları analiz eden bağımsız örneklem t testlerinin sonuçlarına göre, deney ve kontrol gruplarının deneysel uygulama öncesi anket puanlarının arasında anlamlı bir fark yoktur; $t(48) = 0.670$, $p = 0.506 > 0.05$. Diğer taraftan, deney grubunun uygulama sonrası anket puanı kontrol grubununkinden anlamlı olarak daha yüksektir; $t(37.545) = 2.831$, $p = 0.007 < 0.05$.

Ayrıca, anketin ikinci bölümündeki grup içi değişimleri analiz eden eşleştirilmiş örneklem t testleri sonuçları, deney grubunun uygulama öncesi ve sonrası anket puanlarının arasında anlamlı bir fark olduğunu ortaya koyarken; $t(24) = -2.626$, $p = 0.015 < 0.05$, kontrol grubunda böyle bir farkın olmadığını göstermiştir; $t(48) = 0.670$, $p = 0.506 > 0.05$. Diğer bir deyişle, deney grubunun kendi algıladığı özerklik düzeyi, 7 haftalık deneysel uygulama sırasında anlamlı düzeyde artmış, kontrol grubunda ise bu yönden önemli bir değişiklik yaşanmamıştır.

Öte yandan, grupların kazanç puanlarını (her grubun uygulama öncesi ve sonrası ortalama puanları arasındaki fark) karşılaştıran bağımsız örneklem t testi, iki grubun kazanç puanları arasında anlamlı bir fark olmadığını göstermiştir; $t(34.616) = 1.992$, $p = 0.054$. Buna rağmen, deney grubunun kazanç puanının kontrol grubundan daha yüksek olması yukarıda belirtilen analiz sonuçlarını destekler niteliktedir. İstatiksel olarak anlamlı bir farkın elde edilememesi, çalışmanın kısıtlı bir zaman içinde gerçekleştirilmiş olması ile ilişkilendirebilir. Deneysel uygulamanın yedi hafta ile sınırlı olması, gruplar arasındaki kazanç puan farkının anlamlı bir düzeye gelmesine olanak tanımamış olabilir.

Grupların her bir anket maddesi için aldıkları ortalama puanları ayrı ayrı karşılaştıran bağımsız örneklem t testleri, gruplar arasındaki en büyük farklılıkların öğrenme stratejileri farkındalığı, bireysel çalışma becerileri ve öz değerlendirme becerileri ile ilgili maddelerde olduğunu göstermiştir. Bu maddelerin hepsinde, deney grubu, uygulama sonrasındaki ankette kontrol grubundan anlamlı olarak daha yüksek puan alırken, uygulama öncesindeki ankette anlamlı bir fark bulunmamıştır.

Anket maddelerini ayrı ayrı karşılaştıran eşleştirilmiş örneklem t testleri sonuçlarına göre ise, kullandıkları kelime öğrenme oyunları ve ders materyalleri seçme becerileri

açısından, deney grubu uygulama sonrasında, uygulama öncesine göre anlamlı ölçüde gelişmiştir. Kontrol grubunda ise böyle bir fark saptanmamıştır.

Genel olarak, gruplar arası ve grup içi ortalama puan farklarının analizi, deney grubunun uygulama sonunda, kontrol grubuna göre, daha özerk olduğunu göstermektedir. Bu bulgu, uygulanan bilgisayar destekli dil öğrenimi müdahalesinin, öğrencilerin kendi algıladıkları özerklik seviyesini artırmada rol oynadığına işaret etmektedir. Bu sonuçlar, daha önce gerçekleştirilmiş ve bilgisayar destekli dil öğreniminin öğrenen özerkliğini desteklediğini ortaya çıkarmış birçok çalışma ile paralellik göstermektedir (Albadry, 2018; Ardi, 2017; Bitlis, 2011; Kim, 2014; Mutlu, 2008; Öğmen, 2011; Pospíšilová, 2018). Bununla birlikte, bu çalışmanın sonuçlarının bilgisayar destekli dil öğreniminin tek başına öğrenen özerkliğini artırdığı anlamına gelmediği vurgulanmalıdır. Bu çalışmada bilgisayar destekli dil öğrenimi, öğrenen özerkliğini destekleyebilecek öz değerlendirme, seçim yapma hakkı, iş birlikçi öğrenme gibi başka faktörlerle birlikte kullanılmıştır. Bu nedenle, bu uygulamanın bir bütün halinde kullanımının, söz konusu sonuçlara ulaşmayı sağladığı göz önünde bulundurulmalıdır.

Vurgulanması gereken bir diğer nokta, çalışmada yer alan katılımcıların kayıtlı oldukları bölümlerin sonuçları etkilemiş olabileceğidir. Katılımcıların tümü İngilizce Öğretmenliği veya İngiliz Dili ve Edebiyatı bölümlerine kayıtlı öğrencilerdir. Bu nedenle, katılımcılar uygulamaya diğer bölümlerin öğrencilerine kıyasla daha yüksek motivasyonla katılmış ve daha fazla ilgi göstermiş olabilir. Motivasyonun öğrenen özerkliği ile olan ilgisi düşünüldüğünde (Sinclair, 2000), katılımcıların bu özelliğinin çalışmanın bulguları üzerindeki olası etkisi göz önüne alınmalıdır.

Çalışmanın araştırdığı ikinci soru, katılımcıların bilgisayar destekli dil öğrenimi ile ilgili görüşlerini ortaya çıkarmaya yöneliktir ve bu soruyu cevaplamak için toplanan nitel veri kullanılmıştır. Anketteki açık uçlu sorularla toplanan veri, deney grubundaki tüm katılımcıların hem deneysel uygulama öncesi hem de sonrasında, teknolojinin İngilizce öğrenmek için kullanılabileceğini düşündüğünü göstermiştir. Bu sonuç, katılımcıların dil öğreniminde teknolojinin kullanımı konusunda olumlu düşüncelerinin olduğunu göstermekte ve Zonturlu (2014) ve Ceylan (2019) tarafından

elde edilen sonuçları desteklemektedir. Bu noktada, teknolojinin faydaları arasında, katılımcıların en sık bahsettikleri teknolojinin öğrenme materyallerine erişim sağlama, bilgiye erişim sağlama ve İngilizce dil becerilerini geliştirme konularında faydalı olduğudur. Buna ek olarak, açık uçlu sorulardan elde edilen veriler, İngilizce öğrenmek için teknolojiyi kullanırken kendilerini rahat hisseden katılımcıların sayısının, deneysel uygulama sonrasında, öncesine göre daha fazla olduğunu ortaya koymuştur. Teknolojiyi kullanırken neden rahat hissettikleri konusunda katılımcıların en sık bahsettiği sebepler teknolojiyi verimli kullanabilmeleri, güvenilir bilgi ve kaynaklara ulaşabilmeleri ve İngilizce öğrenmek için teknolojiden yararlanabilmeleridir.

Yarı yapılandırılmış görüşmelerde katılımcılar, yedi haftalık bilgisayar destekli dil öğrenimi uygulamasının olumlu yönlerinden bahsetmiştir. Bu konuda en sık bahsedilen yararlar, uygulamanın öğrenme kaynaklarına erişim sağlaması, öğrencilere seçme özgürlüğü sunması ve İngilizce becerilerini geliştirmesi olmuştur. Bahsedilen bu özellikler, bilgisayar destekli dil öğreniminin alan yazında önerilen faydaları arasındadır (Chik, 2017).

Katılımcılar, ayrıca uygulamanın zorluklarından da bahsetmişlerdir. En sık belirtilen zorluk uygulamanın sınırlı verimlilik sunması olmuştur. Bu noktada katılımcılar her ne kadar uygulama faydalı olsa da dil öğreniminde böyle bir uygulamanın tek başına yeterli olamayacağını ve ancak sınıfta gerçekleştirilen dil öğrenimini destekleyebileceğini belirtmiştir. Öğrencilerin bu görüşü, Mokhtari (2013) tarafından elde edilen sonuçlar ile paralellik göstermektedir. Katılımcılar tarafından bahsedilen bir diğer zorluk, uygulama için verilen sınırlı zaman süresidir. Katılımcılar, haftalık olarak tanıtılan çevrimiçi araçların tümünü bir hafta içinde yeterince kullanamadıklarını ve daha fazla zamana ihtiyaç duyduklarını belirtmiştir. Ayrıca, çevrimiçi araçları sınıf dışında kullanırken sınırlı rehberlik aldıklarını hissetmeleri, katılımcılar tarafından bahsedilen bir başka zorluk olmuştur.

Görüşmelerden elde edilen veriler, katılımcıların deneysel uygulamanın özerklikleri üzerinde olumlu etkilerinin olduğunu düşündüklerini göstermiştir. Bu konuda,

katılımcılar uygulamanın özellikle öz değerlendirme, seçim yapma ve öğretmene bağımlılığı azaltma yönlerinden faydalı olduğunu belirtmişlerdir.

Son olarak, görüşme katılımcıları bilgisayar destekli dil öğrenimi uygulamasının geliştirilmesine yönelik bazı önerilerde bulunmuştur. Bunlardan en sıklıkla bahsedilenleri, uygulamaya sınıf içi aktiviteler dahil etmek, uygulamanın zaman sınırını artırmak, uygulamayı okulların müfredatına dahil etmek ve uygulama içeriğine öğrencilerin sorularını sorabilecekleri web siteleri eklemek şeklindedir.

Çalışmanın bulguları, yabancı dil öğretmenleri, müfredat ve program tasarımcıları, öğretmen eğitimcileri ve araştırmacıların göz önüne alabileceği bazı sonuçlara işaret etmektedir. Öncelikle bu çalışmada, tasarlanan bilgisayar destekli dil öğrenimi uygulamasının İngilizce öğrencilerinin kendi algıladıkları özerklik seviyelerini artırmaya yardımcı olduğu bulunmuştur. Ayrıca, katılımcıların dil öğreniminde teknolojinin kullanımı ve bu çalışmada yer alan uygulama hakkında olumlu görüşlere sahip oldukları ortaya çıkmıştır. Bu bulgular, bilgisayar destekli dil öğreniminin öğrenen özerkliğini artırmak için eğitimciler tarafından kullanılabileceğini göstermektedir. Bu bağlamda, çalışmada tasarlanan uygulama bu amaçla kullanılabilecek bir yöntem olarak sunulmaktadır. Ayrıca, çalışmadaki bilgisayar destekli dil öğrenimi uygulaması kullanılırken, çalışmadaki katılımcılar tarafından bahsedilen zorluklar ve uygulamayı geliştirmeye yönelik yapılan öneriler, etkili sonuçlara ulaşmada yol gösterici olabilir. Çalışmanın işaret ettiği bir başka sonuç, her pedagojik uygulamada olduğu gibi, fiili uygulamadan önce dikkatlice organize edilmiş ve ayrıntılı bir hazırlık sürecinin gerekli olduğudur. Bu çalışmada, söz konusu uygulamanın planlanması ve gerçekleştirilmesinden önce, öğrencilerin ihtiyaçları ve tercihleri, uygulamaya hazır olmaları, teknoloji kullanımına ilişkin imkân ve becerileri dikkate alınmıştır; sonuç olarak, uygulama sorunsuz bir şekilde gerçekleştirilebilmiştir. Benzer hazırlık süreçleri, diğer eğitim bağlamlarında da bilgisayar destekli dil öğrenimi uygulamalarının etkili bir şekilde gerçekleştirilmesi için gereklidir.

Son olarak, çalışmanın tasarım ve uygulaması ile ilgili kısıtlamalar, elde edilen bulguları değerlendirirken göz önüne alınmalıdır. Ayrıca, bu kısıtlamaların

vurgulanması, gelecekte yapılacak olan araştırmaları yönlendirme açısından faydalı olacaktır. Öncelikle, araştırmanın nicel kısmı için katılımcılar uygun örnekleme ile belirlenmiştir. Bu nedenle, çalışmanın bulguları genellenebilme açısından sınırlıdır. Buna dayanarak, gelecekteki çalışmalar rastlantısal örnekleme yöntemini kullanabilir. Ayrıca, çalışmanın katılımcıları, İngilizce Öğretmenliği veya İngiliz Dili ve Edebiyatı bölümlerine kayıtlı olan öğrencilerdir. Bu nedenle, katılımcıların motivasyon düzeyleri ve çalışmaya olan ilgileri, dil öğrenimi ile ilgili olmayan diğer alanlardaki öğrencilere göre farklı olabilir. Uygulamanın etkilerini farklı açılardan araştırmak için, gelecekte yapılacak çalışmaların diğer alanlardan katılımcılarla gerçekleştirilmesi önerilmektedir.

Bir diğer kısıtlama olarak, çalışmadaki deneysel müdahalenin uygulandığı yedi haftalık zaman dilimi, öğrenen becerilerinin ve özerk öğrenmeyle ilgili kapasitelerin geliştirilmesinde yetersiz kalmış olabilir. Bu nedenle, gelecekteki çalışmalar uygulamanın süresini uzatabilir ve bu şekilde, deney grubu ile kontrol grubu arasında daha kapsamlı bir karşılaştırma yapılabilir.

Çalışma ile ilgili bir diğer kısıtlama ise grupların oluşturulması konusundadır. Katılımcılar iki gruptan birine rastlantısal olarak atanmadığı için, çalışma yarı deneysel bir tasarıma sahiptir. Yarı deneysel yerine gerçek bir deneysel tasarım çalışmanın bulgularına katkıda bulunabilir. Benzer şekilde, çalışmadaki iki gruba hazırlık derslerinde farklı öğretmenler tarafından ders verilmiştir. Her ne kadar kurumun tüm sınıflarında aynı dil öğretim programı takip edilse de bu öğretmenlerin öğretim yöntemleri ve sınıfta uyguladıkları ek aktiviteler çalışmanın bulgularını etkilemiş olabilir.

Yukarıda belirtilen önerilerin yanı sıra, gelecekteki çalışmalar bilgisayar destekli dil öğrenimi uygulamasını farklı yönlerden ele alabilir. Örneğin, uygulama hakkında eğitmenlerin görüşleri araştırılabilir. Ayrıca, uygulamanın öğrencilerin dil becerileri üzerinde herhangi bir etkisinin olup olmadığı incelenebilir.

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