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An examination of digitalized self-directed language learning practices of tertiary level EFL learners in Türkiye

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Highlights

- Self-directed language learning practices through technology-mediated tools and applications lead EFL learners for improving language skills at the higher education level.
- A variety of diverse routes are open for self-directed language learning practices for learners.
- Learners use a variety of digital language learning practices for enhancing four language skills.
- The maintenance of expository guidance and directions by language teachers on how to self-direct learners' language learning practices through digitally enhanced learning facilities is essential.

Article Info: Research Article

Keywords: *Digital practices, English learning, self-directed learning*

Abstract

Research on self-directed learning practices has ascertained various potential benefits of learner achievement. As mobile technology offers highly practical and portable usage for self-directed learning, studies on language learning practices through technology-based applications have become prevalent among adult learners. This study aimed to examine learners' digitalized self-directed language learning practices for enhancing their English language skills at the tertiary level. The study employed a mixed method design, and the data were collected from 182 EFL learners at a higher education institution in Türkiye. The data were analysed through descriptive statistics and content analyses. The results demonstrated that the majority of the participants use mobile phones besides computers and tablets. However, their level of frequency in using these digital devices in English signaled a low level. Furthermore, results in association with the self-directed practices of learners for improving language skills evinced distinct language learning practices supported by technology-mediated applications and platforms. It was also concluded that learners need a well-organised self-directed learning practice in digital platforms. The study addresses key attributes of practical implications adhering to digitalized self-directed language learning practices for more efficient outcomes in advancing language skills in EFL instruction.

1. Introduction

In this technological era, a whole range of alternatives is predisposed to remote learning facilities in education. This paved the way for the incorporation of specifically designed digital tools and resources in education both for teaching and learning practices (González -Lloret, 2017). Day by day, the orientation for digitalized teaching and learning environments increases as newer or updated programs are introduced. In this sense, computer-assisted language instruction is also met with approval in fostering learners' language competencies and motivation (Sung et al., 2015). Within this context, several interactive learning materials also address English as a foreign language (EFL) learner (Kukulska -Hulme et al., 2017). As explained by Gündüz (2005), these digitalized instruction materials and resources can advance vocabulary building and improve language skills and pronunciation during the language learning process. Providing both in-class and out-of-class practices, digitalized learning can be useful both for classroom instruction

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(Gündüz, 2005) and for individualized self-study also known as self-directed learning (Curry et al., 2017; Gan, 2004; Lai et al., 2022a).

Widely used in many educational contexts (Yang et al., 2023), mobile technology provides great opportunities for language learning at the tertiary level (Lai et al., 2022a). As the management of mobile-assisted language learning matters, the effectiveness of such learning experiences is essential to provide more data for further research (Lai et al., 2022a). Several studies focused on the self-directed learning practices of language learners through technology-enhanced applications (Botero et al., 2019; Çelik et al., 2012; Du, 2013; Lai & Gu, 2011; Viberg et al., 2020; Yang, et al., 2023). The research on this area tended to identify the relationship between self-directed language learning and learner proficiency (Curry, et al., 2017; Viberg, et al., 2020), learning strategies (Grover et al., 2014; van Lieshout & Cardoso, 2022; Thomas & Rose, 2018), and learner behaviors, attitudes, and actions (Du, 2013; Gan, 2004; Navarro & Thornton, 2011; Plews, 2017). Since it is essential to investigate specific strategies that enable L2 learning (Lai et al. 2022a), it is crucial to discover the self-directed learning process when accompanied by applications and facilities provided by computer-assisted learning. Since the significance of learner-initiated exposure and self-directed learning approaches to foreign languages increased, the discovery of the way the learning process is conducted outside the classroom context has become crucial (Lai, et al., 2022a). Hence, this study aims to gain insight into the exploration of learners' digitalized self-directed language learning practices for enhancing their English language skills at the tertiary level. Therefore, the research addresses the following research questions:

1- What is the level of EFL learners' access to the internet, technological devices, and digital English teaching applications?

2- What is the frequency level of learners' self-directed practices in using digital applications in English?

3- What are learners' digitalized self-directed practices in improving

a- listening skills,

b- speaking skills,

c- reading skills, and

d- writing skills in English?

2. Literature

2.1. Learner Autonomy

As researchers have gained a deeper understanding of the nature of autonomy and its firm tie to learner achievement, the ways to improve learner autonomy have become a focal tenet in self-directed language instruction (Little, 2007; Shapely, 2000; Viberg et al., 2020; Wenden, 1991). In its concise definition, Little (2007) described learner autonomy as "the ability to take charge of one's own learning" (Little, 2007, p. 15). Taking a similar stance, Benson (2011), defined autonomy of learners as "the capacity to control one's own learning" (p. 58). From these succinct definitions, it is evident that learners are responsible for initiating, directing, and managing their own learning (Wenden, 1991). Little (2007) in his explanation emphasized that it is natural to be autonomous in discovering the learning ambiances and to follow the predetermined agendas. From the perspective of Wenden (1991), learners who have captured how to learn are successful learners as they have mastered the best strategies for learning and accessing information, the approaches that will allow them to use these skills, and eventually, they become autonomous learners. Relatedly, autonomous learners are reported to have a positive sense of self-directed language learning in "cognitive, metacognitive, affective, and social processes that govern learning" (Curry et al., 2017, p.17). They possess a willingness and control over their learning process (Curry et al., 2017). Linked to this idea, Little (2007) proposed that L2 achievement "is governed by 3 interactive principles: learner involvement,

learner reflection, and target language use" (p. 23). Underlining that autonomous learning and self-directed learning are synonymous, Ciekanski (2007) explained that, learning by means of autonomous practices is regarded to be "emancipatory" that contributes to the overall process of learning (p. 112).
Autonomy is greatly affected by the learners' awareness and control over self-directed language learning (Benson, 2011; Curry, et al. 2017). Incorporating both awareness and control, self-directed language learning supports a language learner to become autonomous (Curry et al., 2017). It is highly accepted that learner autonomy has a mutual relationship with the language proficiency of learners (Little, 2007; Wenden, 1991). As suggested by Shapely (2000), autonomous learners need to have a high level of self-direction for achievement in online learning. Given these points, Curry et al. (2017) claimed that an intentional approach will result in automaticity and change in behaviours for more efficient learning.

2.2. Self-Directed Language Learning

Before diving into the framework of self-directed learning, it is of great importance to note that self-directed learning and self-regulated learning almost refer to the same process (Sert & Boynueğri, 2017; Thomas & Rose, 2018). Self-regulated learning deals with learners' planning, monitoring, and reflecting on their performance for achievement (Conde Gafaro, 2019; Zimmerman, 1990). Zimmerman (1989) identified self-regulated learning as "the degree to which students are metacognitively, motivationally, and behaviourally active participants in their own learning processes" (p. 329). In other words, language learners are also expected to use cognitive and metacognitive processes to govern language learning (Conde Gafaro, 2019). In this sense, Zimmerman (1989) emphasizes the significance of alignment between learners' metacognitive processes and other motivational and social factors. Later on, Zimmerman (2000) modeled a construction of self-regulated learning correlating 3 phases as 'forethought', 'performance', and 'self-reflection' through which learners are expected to predefine their learning targets, to reflect and assess the strategies systematically used for achievement. Having a set of sub-areas that define the self-regulatory processes to be assumed by learners, these phases also host self-judgment and self-reaction to direct the next step in performance and forethought, through which the cycle of self-regulation is completed. Similarly, in self-directed learning, the learning tasks are initiated by the learners (Lai et al., 2022a). Curry et al. (2017) framed that self-directed language learning should involve skills of "goal setting, planning, implementing a plan, using appropriate resources and strategies, and evaluating learning" (p. 18).
One way that signals the learner autonomy reflected by learners is their inclination toward self-directed learning (Ciekanski, 2007). Gan (2004) noted that an EFL learner with a positive view of self-control and self-sufficiency can reflect their responsibility and confidence in learning English. It was also implicated that self-directed language learning yielded promising results in learners' performance in proficiency tests, cognitive learning, and effort management strategies (Gan, 2004). Learners devote their time and effort to out-of-class and self-directed language learning to increase exposure to foreign language learning and to improve their language competencies (Lai et al., 2022b). Using mobile-accessible apps such as YouTube, Duolingo, Twitter, Facebook, etc., learners may get support from teachers for studying schedule or may direct a self-initiated process for language learning (Lai, et al., 2022b; Sharpless, 2016). Upon the same issue, it was also suggested that teachers need to be aware of learners' positive attitudes toward self-directed learning (Gan, 2004).

2.3. Mobile-Assisted Language Learning

The use of mobile technology has become prevalent among university students thanks to its easy access to resources and the facility in connecting with others for improving language skills in an authentic environment for language learning (Lai et al., 2022a). Playing a central role in education, technology is integrated into the educational context mostly using computers and the internet is the pivot around which all the axis of access to knowledge and information revolves (Nada, 2021). In this settlement, computers are used to process information and to enable interaction among users (Gündüz, 2005). Computers provide

additional practice in language learning and serve "as an aid" for both practitioners and learners (Gündüz, 2005, p. 194). Through digital innovations, portable devices have superseded the covering area of computers, and now language learning is also applicable to mobile-assisted digital tools such as mobile phones, tablets, laptops, and accessible applications on them (Lai et al., 2022b). The emergence of wireless technology has enabled new ways of learning and spontaneous access to a variety of learning contexts (Kukulska-Hulme & Shields, 2008). As outlined by Sung et al. (2015), functioning both in formal and informal contexts, mobile-assisted learning addresses both collaborative or individual learning or both teacher-centred or learner-centred learning settings. As pointed out by Kukulska-Hulme et al. (2017), these portable devices enable the autonomous use of mobile video and audio functions to promote language use. In foreign language instruction, the integration of several digital applications have been proposed for both classroom and out-of-class training (Afshari et al., 2003; González-Lloret, 2017). These practices may cover posting on social media, playing digital games (Chik, 2018), blogs, and wikis, as well as doing online assessments (Hafner et al. 2015). According to İstifçi and Doğan Uçar (2021) learners also use social media for a variety of gains in terms of language learning.

Another form of technology-enhanced learning facility is online learning that allows the 'anytime anywhere' learning experience to access the same content at any time learners desire (Plews, 2017). Also labeled as 'e-learning' online learning initially involved audio and video tape and interactive television broadcast (Ellis, 2004), and nowadays the instruction is commonly delivered through computer-based media involving the internet and the web sites (Smaldino et al., 2008), social networking, and social media (Karakaş & Manisalıgil, 2012). As illustrated by Viberg et al. (2020), mobile-assisted language learning includes mobile access to language courses, personal practice on language skills and knowledge, cooperative language activities, and exploratory learning that permits informal learning environments. Uçar and Sarıtepeci (2022) stated that distance education provide convenience for learners with limited time and space. As epitomized by Plews (2017), online learning activates the principles of constructivist learning of critical thinking, problem-solving, accommodation of different viewpoints, and engagement in authentic learning activities. Similarly, mobile-assisted language learning promotes learner engagement in informal learning beyond the classroom at the higher education level (Botero et al., 2019). Van Lieshout and Cardoso (2022) simply suggest learners follow "the process of knowing what is needed, be motivated to act on that knowledge, and use technology to achieve it" (p.2). Based on learners' own learning needs and interests, learners tend to use mobile technology to personalize and customize their learning (Lai et al., 2022a). Yet, self-regulation is needed for efficiency and development in language focus.

The research on technology-integrated language instruction offers the utilization of digital learning resources assisted by the organization of interactive content (Gündüz, 2005; Saputro et al., 2020). As addressed by Başar and Şahin (2022), the integration of technology has a positive and motivating impact on EFL learners. Çelik et al. (2012) investigated the self-initiated use of information and communication technologies of 399 language learners enrolled in an intensive English language preparatory program at a university in North Cyprus. The data were collected through a survey. The findings reported no significant relationship between the gender of the learners and their use of self-regulated language learning. Nevertheless, the findings demonstrated that learners mostly used information and communication technologies (ICT) for practicing listening, vocabulary, and writing skills. The study proposed the need for learner training, teacher support, and guidance for efficient self-designed language learning. The results showed that self-directed learning was useful as a promising learning strategy for advancing students' target language learning as the framework of self-directed learning would lead to the improvement of metacognitive skills, motivation, and knowledge. The study also suggested the consideration of individual differences in the organization of self-directed learning programs at schools.

Şahin Kızıl and Savran (2016) examined the use of ICT of 777 EFL learners at the higher education level to self-design their language learning beyond the classroom setting. The data were collected through surveys and the results displayed active engagement of EFL learners in using technological tools for self-regulated language learning. However, some variations were also reported in aspects of directing learning through computer-assisted learning tools. These variations were linked to learners' positive attitudes toward using ICT tools for goal commitment, and affective and resource regulation, yet reflected a less positive approach toward using technology for activities for social contexts and monitoring their process of language learning. Hence, the study also implicated that learners were lacking awareness of the importance of the metacognitive strategies required for L2 learning.

In a similar study, Sert and Boynueğri (2017) aimed to analyse the difference between the perceptions of secondary school students in distinct income groups on the students' and their teachers' skills of technology use. The study calculated the correlation between learners' perceptions of their behaviour of self-directed language learning and the competencies of students and teachers in using technology. The results denoted that there was no difference between learner perceptions and income level regarding their skills of technology use. Moreover, there was no correlation between learners' perceptions of self-directed learning and their learning behaviours. Hence, it was implicated that wide use of technology by students will not be noteworthy without any purpose and teachers should guide learners' progress both within and beyond the classroom. In a much more recent study, Lai et al. (2022a) examined the learners' use of mobile-assisted devices in self-directed language learning. Being collected from 676 EFL learners in different departments from universities in China, the data were analysed using a structural equation modeling approach. The majority of the participants admitted using mobile technology for language learning and revealed extrinsic motivation for learning. Moreover, it was found that most of the participants used portable devices for learning vocabulary, translation, and practicing language skills and other activities.

As outlined in the related literature, self-directed language learning shapes learners' habit of studying in an autonomous way (Curry et al., 2017). In this regard, autonomy will eventually substantiate learners' achievement and proficiency in language learning (Little, 2007; Shapely, 2000; Wenden, 1991). Based on the crucial role of self-directed language learning in remote learning practices, it is essential for teachers to trace their students' progress and guide them in effective mobile-assisted language learning practices (Çelik et al., 2012; Gan, 2004). Hence, this study is an attempt to understand tertiary-level students' personal engagement in practicing English language learning through digital tools and to guide particularly non-strategic learners (Oxford & Lin, 2011) through a language learning perspective as they benefit from digital tools and applications for language proficiency.

3. Methods

3.1. Research Design

The study has a mixed-method design employing both qualitative and quantitative research procedures. The quantitative part analyses the mean value of learners' opportunity in using digital tools for learning English, the frequency level of learners using certain computer-based self-directed language learning practices, and learners' preferences in using self-directed language learning practices through digital tools regarding four language skills of listening, speaking, reading, and writing. The qualitative part analyses learners' reflections on each language skill through content analysis.

3.2. Participants

A convenient sampling method was adopted in the study for data collection. The participants of this study were 182 EFL learners (female=139 (76%); male=43 (24%)) from diverse disciplinary backgrounds at Kırşehir Ahi Evran University in Türkiye. All of the participants consented to participate in the study. All the participants (N=182) were 1st-grade students and have been taking online English classes for two hours a week for 7 months. All the participants were native Turkish language speakers and have been learning English as a foreign language. Their age ranged between 19-25 (M=20,2).

3.3. Data Collection & Instrument

The instrument that examines learners' practices in digitalized self-directed learning was adapted from Grover et al. (2014) and was adapted to a digital learning practice based on four language skills. The original survey consisted of 16 demographic questions about learners' education level in their country, their employment status, the time span of being enrolled in the language program, and their reasons for taking English classes. The survey also involved 19 items with reference to self-directed language learning methods for enhancing their English proficiency beyond classroom context. These items were common language learning practices such as watching TV programs, educational and online videos in English, and reading newspapers and online blogs in English, and alike (Grover et al. 2014).

In the current study, an online survey form was designed as the learners were experiencing online education due to the earthquake that struck Türkiye in February 2023. The participants were sent the survey link and asked to participate in the survey. The survey totally consisted of 21 items and involved 3 sections. The first section requested the demographic information of the participants with 6 items (ie. gender, age, discipline, internet access, technological tools they use, enrolment for digital English programs), the second section investigated learners' level of frequency in using digitalized self-directed learning practices with 6 items ($\alpha = .85$). Participants were asked to rate their frequency level of use of each practice on a five-point Likert-type scale labeled as *always* (5), *often* (4), *sometimes* (3), *rarely* (2), and *never* (1). The third section involved 9 items that asked learners to opt for the alternatives in a multiple-selection fashion presented for each language skill plus requesting them to reflect on any other practices relevant to each language skill with open-ended questions under each skill. The instrument was designed in Turkish language and translated into English for data analysis. The period of data collection lasted from 17th March 2023 to 1st April 2023.

3.4. Data Analysis

To check the conformity and clarity of the items in the draft forms, two field experts and four of the participants were consulted. Based on the feedback in the piloting, the survey items were rephrased and reformatted. The quantitative data were analysed via SPSS 21. based on the frequency and descriptive values of the items. The Cronbach's Alpha value was calculated at 0.85, referring to a high inner consistency of the collected data on items 10-15 in the second section of the survey (Dörnyei, 2007). The results from the open-ended questions reflecting the qualitative data were analysed through content analyses and thematic coding (Braun & Clarke, 2006). For the analysis of the reflections, each participant was labeled with consecutive numbers. For the inter-coder reliability, the researcher and a colleague coded the themes based on the qualitative findings. The percent agreement method was used estimating 93.3% of inter-coder reliability.

4. Findings

The findings about the distribution of learners' access to the Internet show that the majority of the participants (73%) had full access and some of them (27%) had limited access.

As for the demographic findings related to the distribution of learners' use of technological devices to support their learning of English, the results revealed that almost all the participants (N=164, 90%) used smartphones. As displayed in the graphic below, some of the participants (N=48, 27%) also used their personal computers. Very few of the participants (N=12, 7%) reflected that they used tablets for dealing with English practices. Figure 1 illustrates the distribution of technological devices used for practicing English.

In association with the demographic results related to whether learners were enrolled in digital applications for language learning, 135 of the participants (74%) reflected that they were not. This means that, the majority of the participants are not directed through a regulated language instruction program, which most of the time elicits promising results as they are instigated to undertake the practices for their own learning (Botero et al., 2018).

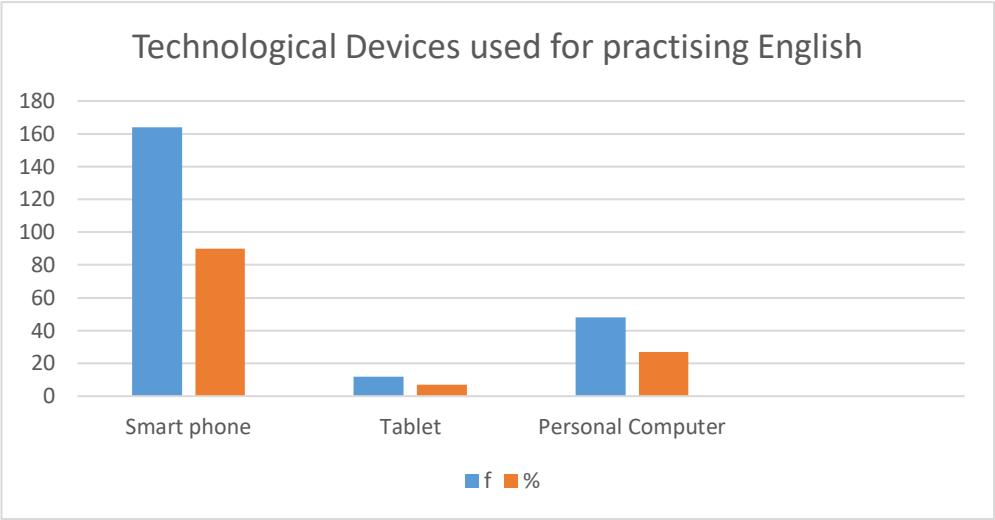

Figure 1. The distribution of technological devices used for practicing English

The frequency level of learners' self-directed practices in using digital applications in English, the results are as follows:

Table 1.

The frequency level of learners' self-directed practices in using digital applications in English

Statement			Always		Often		Sometimes		Rarely		Never	
		Mean	f	%	f	%	f	%	f	%	f	%
Q7	I use my smart phone in English.	1,95	6	3,3	12	6,6	35	19,2	43	23,6	86	47,3
Q8	I use my social media accounts in English.	1,80	7	3,8	8	4,4	33	18,1	29	15,9	105	57,7
Q9	I watch live streaming videos for teaching English.	2,61	14	7,7	28	15,4	53	29,1	48	26,4	39	21,4
Q10	I follow social networks designed for teaching English.	2,59	15	8,2	32	17,6	48	26,4	39	21,4	48	26,4
Q11	I play digital games in English to improve learning English.	2,48	11	6	23	12,6	25	28,6	53	29,1	43	23,6
Q12	I use the digital interactive application of our English course books.	2,31	5	2,7	26	14,3	41	22,5	59	32,4	51	28

Concerning learners' level of frequency in using digital applications in English, the findings indicated a low level of frequency in using smartphones (M=1.95, SD=1.10) and social media accounts (M=1.80, SD=1.11) in English. Similarly, learners' level of frequency had a similar result in playing digital games in English (M=2.48, SD=1.15) and using digital interactive applications of English course books (M=2.31, SD=1.11). Learners' level of frequency in watching live streaming videos (M=2.61, SD=1.20) and social networks (M=2.59, SD=1.27) designed for English instruction demonstrated a moderate level of frequency.

As for the learners' digitalized self-learning practices of four language skills, learners were asked to opt for their practices formed in a multiple-selection fashion. The replies are given in the horizontal bar charts below.

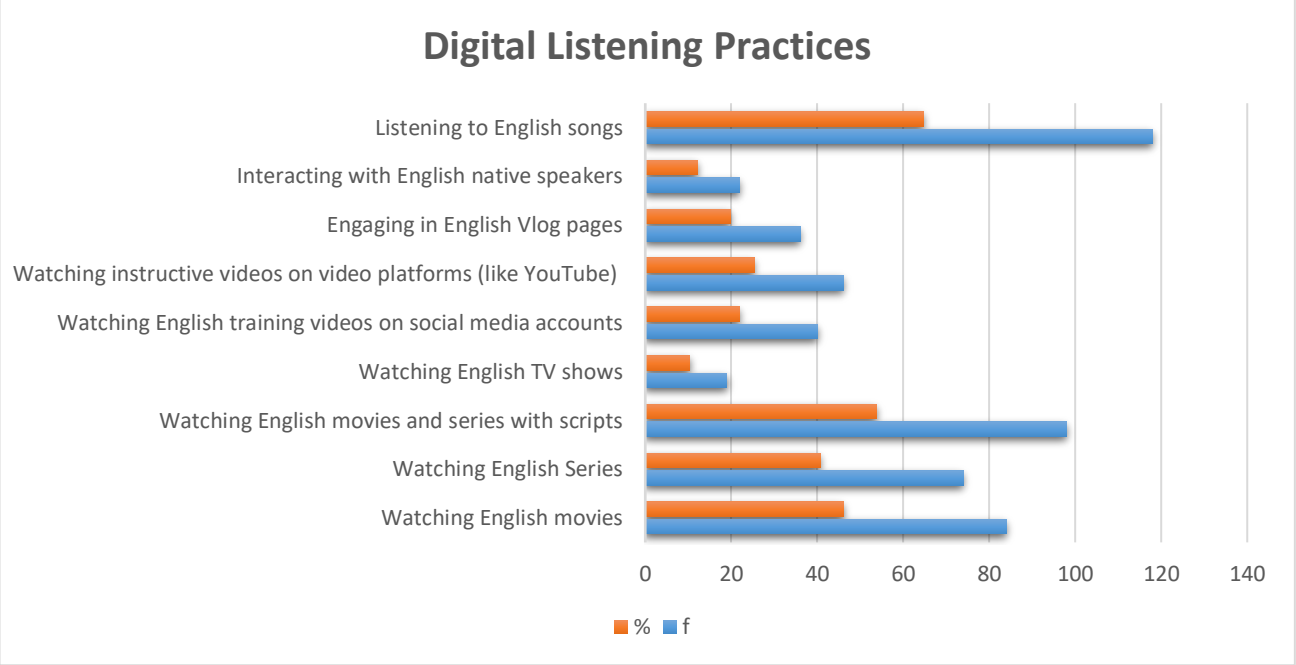

Figure 2. The distribution of participants' digital listening practices in English

As shown in the bar chart above, the majority of the learners revealed that they listen to English songs (*f*=118; 64.8%) and watch English movies and series with scripts (*f*=98; 5.,8%). Nearly half of the participants figured that they watch English movies (*f*=84; 46.2%) and watch English series (*f*=74; 40.7%). Some of the participants evinced that they watch instructive videos on video platforms (like YouTube) (*f*=46; 25.3%), watch English training videos on social media accounts (*f*=40; 22%), and engage in English vlog pages (*f*=36; 19.8%). Few of the learners revealed that they interact with native speakers (*f*=22; 12.1%) and watch English TV shows (*f*=19; 10.4%).

For the "others" option, in which participants were asked to reflect on their other digitalized self-directed practices in improving listening in English, two of the participants noted that they listen to English dialogues on Spotify (P85; P104) and listen to English songs in Spotify, do karaoke and sing along (P102). Some of the participants (*f*=3; 1.6) also reflected that they listen to podcasts in English to improve their listening skills. The thematic analysis showed that two themes and five codes emerged to describe learners' digital practices in improving listening. The emerging themes were "listening to audio tracks" and "watching videos" in English through a variety of online sources. The results are given in Table 2 below.

Table 2.
Results of the thematic analysis for learners' digital listening practices

Theme	Code	Repetition rate
Listening to audio tracks	Listening to music with scripts	5
	Listening to podcasts	3
	Listening to dialogues in Spotify	1
Watching videos	Watching short videos on Youtube	2
	Watching English TV series	2

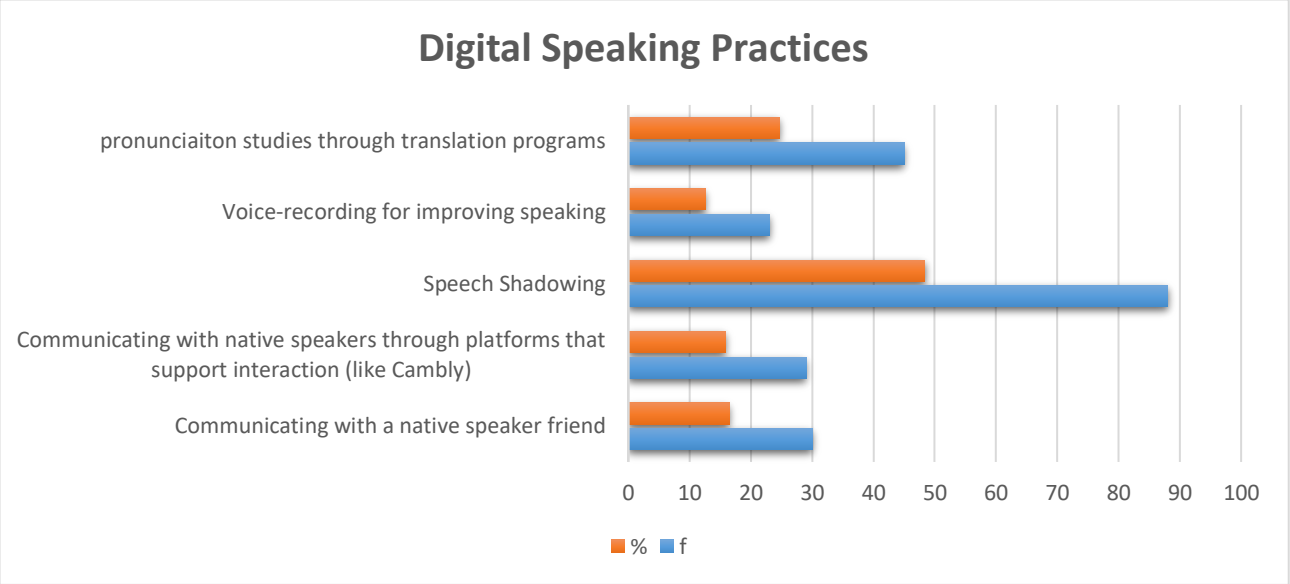

Figure 3. The distribution of participants' digital speaking practices in English

The results related to the learners' self-directed speaking practices through digital platforms evidenced that nearly half of the learners use speech shadowing (*f*=88; 48.4%). The other practices directed by learners were pronunciation studies through a translation program (*f*=45; 24.7%), communicating with a native

speaker friend (*f*=30; 16,5%), communicating with native speakers through platforms that support interaction (*f*=29; 15.9%), and recording videos for improving speaking (*f*=23; 12.6%).

For the 'others' option, in which participants were requested to write their other digitalized self-directed practices in improving speaking skills in English, four of the participants (P45; P72; P108; P126) noted that they use the Duolingo platform to improve speaking English. For the thematic results of this open-ended question, just one theme was found as "using digital platforms" with its unique code "using Duolingo" (*f*=4).

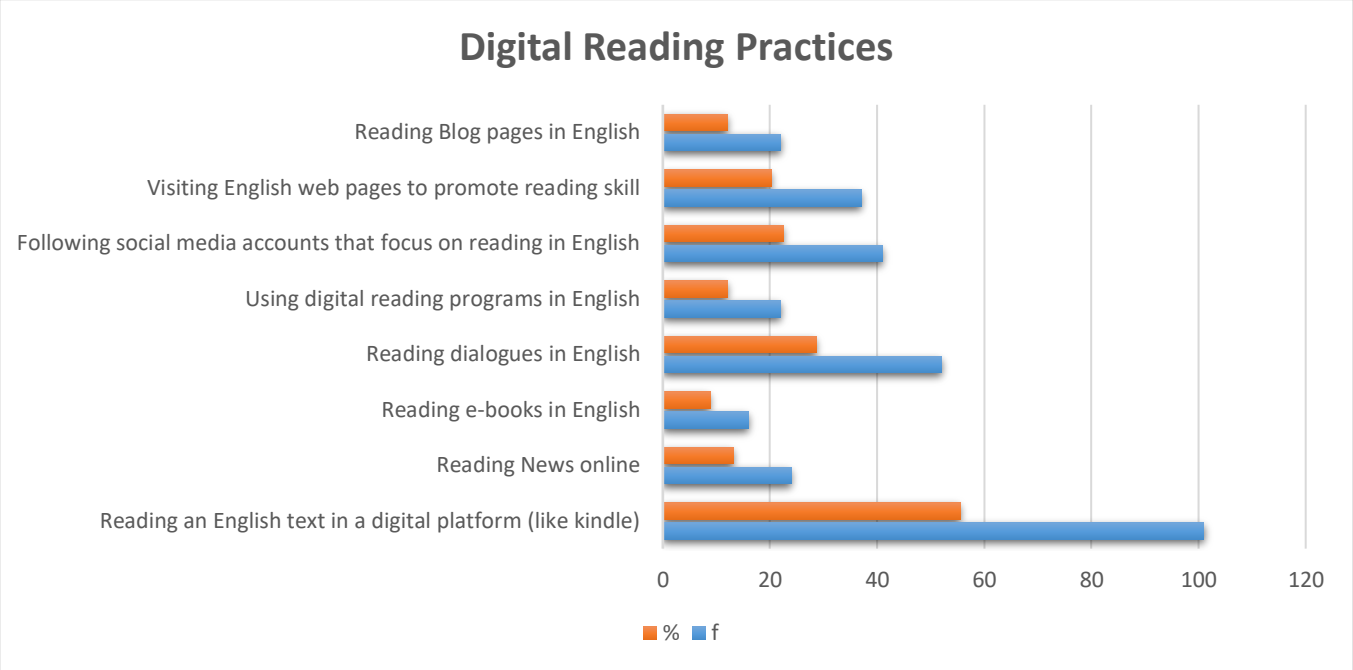

Figure 4. The distribution of participants' digital reading practices in English

With reference to learners' practices in improving English reading skills through digital platforms, the results demonstrated that the majority of the learners read an English text on a digital platform (*f*=101; 55.5%). Some of the participants stated that they read English dialogues (*f*=52; 28,6%), follow social media accounts that focus on reading in English (*f*=41; 22.5%), and visit English web pages to promote reading skills (*f*=37; 20.3). Few of the participants (*f*=22; 12.1%) clicked that they read blog pages in English, use digital reading programs in English, and read news online (*f*=24; 13.2%). A minor group of participants revealed that they read English e-books (*f*=16; 8.8%).

For the 'others' option, in which learners were asked to note their other digitalized self-directed practices in improving reading in English, P1 noted that:

"*Whatever I watch in English, I watch with subtitles and read subtitles to understand better*."

For the thematic results of this open-ended question, two themes appeared as "subtitles" with its unique code "reading subtitles in videos" (*f*=2) and "reading scripts of songs" (*f*=1).

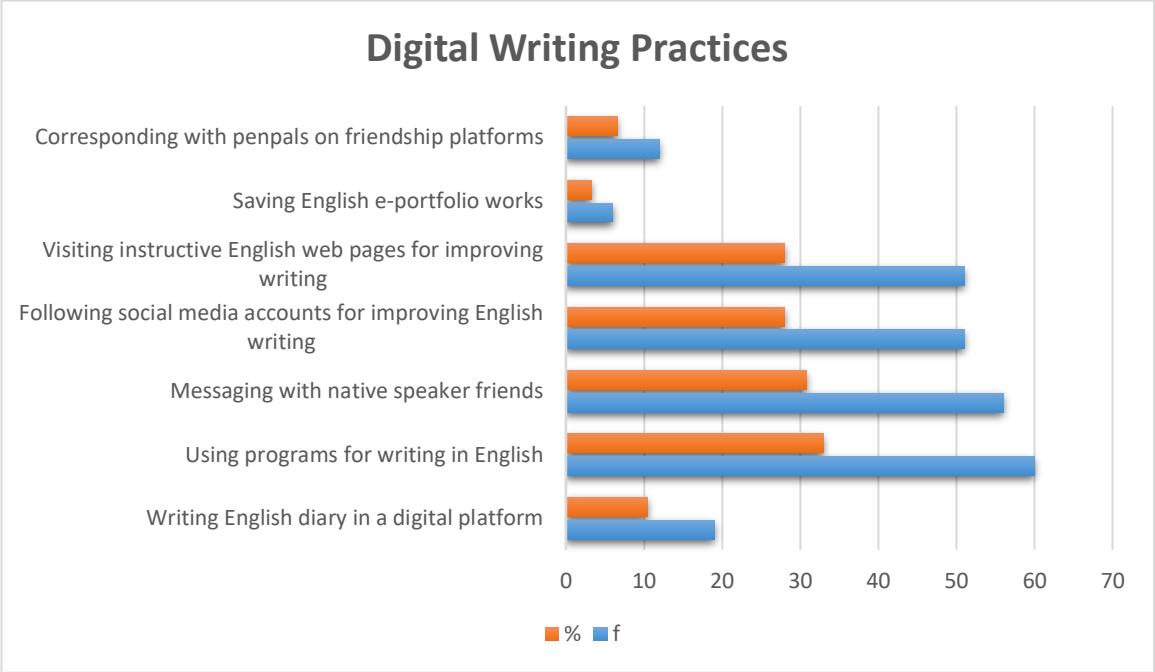

Figure 5. The distribution of participants' digital writing practices in English

Participants' preferences in digital writing practices in English displayed that nearly half of the learners used a program for writing in English (*f*=60; 33%) and text with native speaker friends (*f*=56; 30.8). Some of the participants (*f*=51; 28%) elicited that they visit instructive English web pages and follow social media accounts for improving writing in English. A minority of the participants revealed that they write English diaries in a digital platform (*f*=19; 10.4%), correspond with pen pals on friendship platforms (*f*=12; 6.6%), and save English e-portfolio works (*f*=6; 3.3).

For the 'others' option, in which they were asked to reflect on their other digitalized self-directed practices in improving writing in English, three of the learners (P45; P72; P146) noted that they use the Duolingo platform and take notes about the specific vocabulary items or expressions. One of the participants (P94) stated that

"I am enrolled on an English web page and I write recommendations on specific topics on its forum and comments under the posts."

Another participant (P48) noted that

"I use a translation program and sometimes leave English comments under the posts on social media accounts."

Two of the learners (P77; P180) reflected that they write text messages to their friends in English when texting to each other. Regarding the thematic results of this open-ended question, three themes emerged the first theme was "texting" with its code "texting with my friends in English" (*f*=5), the second theme as "translating from English to Turkish" (*f*=5), and the third theme with the following codes; "taking notes on the new words I see on videos" (*f*=5), writing daily routines on my smartphone" (*f*=3), and writing the lyrics of songs I listen" (*f*=1). The results are shown in table 3 below.

Table 3.

Results of the thematic analysis for learners' digital reading practices

Theme	Code	Repetition rate
Texting	Texting with friends in English	5
Translation	Translating from the source language to my native language	5
Taking notes	Taking notes on the new words/ expressions I see on videos	5
	Writing daily routines on my phone	3
	Writing the lyrics of the songs I listen	1

5. Discussion

5.1. RQ1: What is the level of EFL learners' access to the internet, technological devices, and digital English teaching applications?

The results showed that the majority of the learners had full access to the Internet which enable them to benefit from digitalized self-directed learning. Another finding relating to participants' access to technological devices showed that almost all of them had smartphones besides having computers and tablets that enable them to practice in English through self-directed language learning. As previously described, the Internet plays a central role in education (Nada, 2021) and as computers assist language learning (Gündüz, 2005), interactive learning materials have become prevalent in EFL learning (Kukulska- Hulme et al., 2017). As emphasized by Lai et al. (2022b), portable devices allow language learning to be applicable through mobile-assisted digital tools such as mobile phones, tablets, laptops, etc. However, most of the learners in the study revealed that they were not enrolled in a regulated language instruction program. As reflected by Botero et al. (2018), such kind of programs as Duolingo may prove to be efficient in self-directed language learning. Furthermore, mobile technology offers great opportunities for language learning and the effectiveness of these experiences also matters in terms of language achievement (Lai et al., 2022a). Moreover, several studies emphasized that technology-enhanced applications may support self-directed language learning practices (Botero et al., 2019; Çelik et al., 2012; Du, 2013; Lai & Gu, 2011; Viberg et al., 2020; Yang, et al., 2023). Hence, the prevalence of using digital applications for language learning can yield effective outcomes in terms of language achievement when regulated systematically by individuals even in out-of-class contexts.

5.2. RQ2: What is the frequency level of learners' self-directed practices in using digital applications in English?

Concerning the participants' level of frequency in using digital applications in English, the results yielded a low level of frequency in using smartphones and social media accounts in English. Similarly, their level of frequency in playing digital games in English and using interactive applications of English course books was low. On the other hand, their level of frequency in watching live-streaming videos and interacting with social networks designed for English teaching was at a moderate level. Within this context, it is of great importance that digitalized instruction materials and resources help learners improve their language skills, pronunciation, and vocabulary learning (Gündüz, 2005). As previously clarified, the reason that lies behind learners' tendency in applying to self-directed language learning is their need to increase their exposure span to foreign language learning and to foster their language competencies (Lai et al., 2022b). From this

angle, although the contribution of self-directed language learning practices is beyond argument (Lai & Gu, 2011; Viberg et al., 2020), language learners need to become autonomous learners as awareness and control of self-directed learning strategies will eventually help learners to become proficient in L2 (Little, 2007; Shapely, 2000; Wenden, 1991). Having a positive sense of self-directed language learning, autonomous learners are reported to possess a willingness and self-control over their learning strategies (Curry, et al., 2017; Gan, 2004). Within this framework, it was suggested that teachers may lead learners in a self-initiated language learning process through mobile-accessible applications such as YouTube, Duolingo, Twitter, Facebook, etc. (Lai et al., 2022b; Sharpless, 2016).

5.3. RQ3- What are learners' digitalized self-directed practices in improving a) listening, b) speaking, c) reading, and d) writing skills?

To address learners' self-directed language learning practices through technology-mediated devices, the results were examined. The results of learners' self-directed practices in improving listening skills showed that a great majority of the participants tended to listen to English songs and watch English movies and series with scripts. It was also figured that some of the learners preferred watching English movies and series, instructive videos on video platforms and social media accounts, and engaging in English vlog pages. Few of them revealed an interaction with native speakers, watching TV shows, and listening to English podcasts plus songs and dialogues on Spotify. As another form of technology-enhanced learning context, e-learning that is aided by audio and video tape and interactive television broadcasts was reported to be popular (Ellis, 2004). The instruction can also be delivered through computer-mediated facilities such as the internet and web pages (Smaldino et al., 2008), besides social media and networking (Karakaş & Manisalıgil, 2012). Several digital applications and platforms can provide alternatives for practicing and improving listening skills in English (Fitria, 2021). Vlogs are also important for improving both speaking and listening skills (Nada, 2021). Providing satisfactory content, digital stories also improve EFL learners' listening skills and help them become familiar with linguistic structures and distinct cultural figures (Çetin Köroğlu, 2020). Following these premises, a well-organised language practice can increase interest and motivation for engaging in improving exposure to the target language to foster oral language skills.

The results on learners' self-directed practices in improving speaking demonstrated that nearly half of the participants use speech shadowing. Speech shadowing enables learners to become fluent speakers as they imitate the words or sentences uttered by speech translation (Nguyen et al., 2018). Furthermore, some of the participants also elicited that they tended to practice pronunciation through translation programs, communicate with English-speaking friends through interaction platforms, record speaking videos in English, and use a language learning platform (Duolingo) for promoting their speaking skills. These learning strategies were parallel to the effective strategies that were found by Khairunnisa, et al., (2022) in improving the speaking skills of learners on digital platforms.

As to learners' self-directed practices for advancing reading and writing skills, they elicited to benefit from a plethora of practices through digital platforms and facilities as described in the findings. Within this context, the potential of digital media for learning needs to be considered for learning that is stimulated through texting, forum postings, and blogging to enhance learner engagement to boost the reading and writing skills of EFL learners (Warschauer et al., 2013).

The results show that significant differences exist in learners' preferences for practicing language skills. This may be a sign of a lack of regulated learning which can be more effective through planning, monitoring, and evaluating as proposed by Zimmerman (2000). One of the major issues highlighted in the literature points to the direct link between learner autonomy and language achievement (Little, 2007;

Shapely, 2000; Viberg et al., 2020; Wenden, 1991). As clarified by Wenden (1991), learners who are aware of the best learning strategies and access information can trace their way to perform as autonomous learners. One of the major utilities of portable devices is that they permit the use of mobile video and audio functions for improving language proficiency (Kukulska-Hulme et al., 2017). Çelik et al. (2012) demonstrated that through digital self-directed resources, learners tended to use information and communication technologies for practicing listening and writing skills and for vocabulary building. Similarly, Lai et al. (2022a) found that EFL learners used mobile technology for practicing language skills, learning vocabulary, for translation, and for other activities.

The analytical results obtained from this study also show divergent streaming of digital learning practices. This indication reflects the multi-functional scope of digital learning tools (Gündüz, 2005; Viberg et al., 2020). Allowing learning engagement beyond the classroom at the higher education level (Botero, et al., 2019), mobile-assisted language learning provides learners to have access to online language courses, individual practice on language skills and knowledge, and cooperative and exploratory learning (Viberg, et al., 2020). Referring to this situation, learner training, teacher support, and guidance are of great importance for efficient self-designed language learning (Çelik et al., 2012). Improving metacognitive skills, motivation, and knowledge (Du, 2013), positive attitudes toward using ICT tools for goal commitment, and affective and resource regulation, (Şahin Kızıl & Savran, 2016), it can be concluded that digitalized learning can be useful for self-study practices (Curry et al., 2017; Gan, 2004; Lai et al., 2022a). Based on these directions, it is important to designate a well-planned process of self-directed learning as proposed by Viberg et al. (2020) and Zimmerman (2000). To administer an efficient process, it is also essential that policy makers and teachers training programs should equip teachers with required pedagogical knowledge (Erarslan, 2021).

6. Conclusion and Suggestions

This study aimed to examine self-directed language learning practices through technology-mediated tools and applications used by EFL learners at the higher education level. The results showed that learners commonly used their mobile phones besides having personal computers and tablets for administering their online practices for language learning. Although few of the learners disclosed benefitting from digital language learning applications, based on the related research in the area, it is suggested that digital applications or programs designed for language instruction can bear profitable outcomes for language proficiency in the long run. Furthermore, learners' frequency of using their mobile phones and other pertaining social networks, interactive applications, and platforms in the English language was not at a high level. Yet, as offered by the related pedagogical implications, engaging in such kind of digital applications for language learning has the potential to contribute to L2 learning. In addition, learners self-directed practices through digital networks for improving language skills covered distinct language learning practices in promoting language skills, and this can be evaluated as a sign of the opportunity for multimodal learning strategies provided by the wide context and application forms of the digital world for education. In this technological era, utilizing efficient multifunctional and interactive applications and programs in social platforms is still promising in terms of foreign language learning via more cooperative, interactive, practical, and social implementations, particularly for self-directed language learning challenges. Last but not least, it is essential to regulate language learning practices for out-of-class context for language learning to gain better learning profits. Hence, it is strongly recommended that language teachers also maintain expository guidance and directions on how to self-direct their students' language learning practices through digitally enhanced learning facilities.

7. Limitations and Further Research

The context of this study was limited to investigating digitalized self-practices of learners for improving language skills. However, investigating learners' practices for vocabulary growth and structural skills would yield more comprehensible results in terms of learning EFL. Moreover, the number of participants was confined to 182 university students. With a larger population at distinct levels, more external results can be provided to gain an insightful understanding of learners' self-directed practices in learning EFL.

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