



EFL Students' Perceptions of Self-Regulated Language Learning Through Information and Communication Technologies at a University Context

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ABSTRACT

This study aimed to investigate learners' self-regulated language learning (SRLL) with Information and Communication Technologies (ICT) using a mixed-method research design. The study also aimed to explore gender, high-school type, and department differences in participants' SRLL with ICT. The data was collected from 133 participants in the Foreign Languages School at a state university in Turkey. Descriptive analysis, independent t-test, and ANOVA were used to analyze the quantitative data, while semi-structured interview questions were used to collect qualitative data. The results of the study revealed that gender did not have a significant effect on participants' SRLL with ICT, but there was a significant difference in the use of ICT tools across departments and school type. The study also highlighted the potential benefits of using ICT devices in language learning, such as improving learners' attitudes and success in language learning. The findings suggest that language instructors can use ICT devices to enhance learners' self-regulated language learning practices and tailor their teaching strategies to meet the specific needs of learners in different departments. This study also sheds light on the significance of incorporating ICT tools in language learning and the importance of considering departmental differences when designing language courses.

INTRODUCTION

In today's modern world, there has been a significant rise in demand for technological devices. Developing infrastructure for technology enables people to reach information and resources when they need it. In the light of rapid advancements in technology, the increasing amount of information and the number of resources have impacted all parts of life (Deb, 2014, Thomas et al., 2014). In addition to other areas, utilizing Information and Communication Technology (ICT) in education as a medium for learning has become more prevalent (Golonka et al., 2012). Especially, as the main members of the educational cycle, learners, instructors, and the strategies of learning and teaching have all been directly affected by the growing body of knowledge and resources as well. There is no doubt that through the medium of technological developments, the increasing number of resources has inclined to some adjustments in language learning methods and strategies (Gil-Flores et al., 2017). Accordingly, utilizing technology has

also become prevalent within the realm of language learning (Shadieff & Yang, 2020). Accordingly, as Mooij et al. (2004) state, technological tools, devices, and materials support the process of language learning, which helps learners self-regulate their language learning. In other words, technological advancements, especially ICT tools, foster individuals to be masters of their own language learning process. Considering the various resources of ICT, it is critical to understand language learners' use of technology. However, current studies about self-regulated language learning with the help of technology are still limited. To be more precise, self-regulated learning strategies, with the help of technology, require to be investigated in detail (An et al., 2021). Bandura (1991, p. 248), one of the most prominent figures of Social Cognitive Theory, clarifies self-regulatory strategies as “casual methods” in which self-regulatory mechanisms operate through three principal sub-functions. He clarifies these sub-functions as self-monitoring of one's behavior, its drivers, and effects, appraisal of one's behavior in regard to personal standards and contextual factors, and affective self-reaction. In other words, individuals learn by means of observation, imitation, and modeling, which is the basis of Social Cognitive Theory (Bandura, 1986). This theory also emphasizes the importance of learning through contact with others and refers to learning as social participation (McCormick & Martinko, 2004). In fact, the historical roots of Social Cognitive Theory date back to Albert Bandura (1986) as cited in Pajares (2003), he introduces a concept that is related to human nature, and this theory focuses on the self-beliefs of individuals. However, Bandura (1989) asserts that the scope of human behavior has explicitly been defined as being constructed and regulated by personal or environmental factors. He also states that people are reactive, self-organizing and self-regulated creatures, and they are shaped by environmental factors (Hoffman, 1994). In this context, self-regulated learning (SRL) has gained significant attention in modern educational science (Zimmerman & Schunk, 2001). It refers to the process by which learners take responsibility for their own learning, employing different strategies to sustain their learning. Similarly, Zimmerman (1989, p.6) states that “self-regulated learning is an indication of how and why the students choose to use a particular strategy or response”. Self-regulated learners manage their own way of learning strategies by finding appropriate methods or approaches to accomplish their aim, and they establish specific goals which enhance their self-efficacy beliefs and interests (Dörnyei, 2005).

Considering self-regulated language learning (SRL), it refers to the process where learners regulate their own learning by setting goals, monitoring their progress, and reflecting on their learning experiences (Zimmerman, 2000). This process allows learners to become more engaged with their language learning and develop a sense of autonomy and mastery over their own learning (Rahimi & Katal, 2012). It is clear that the use of appropriate language learning strategies is crucial for SRL. Moreover, utilizing information and communication technologies (ICT) has been proposed as a way of enhancing self-regulated learning strategies. Information and communication technologies refer to “technologies that provide access to information through telecommunication, and this includes the internet, wireless networks, cell phones, and other communication mediums” (Ratheeswari, 2018, p. 45). With the advancement of ICT, the reach of language learning has expanded beyond the boundaries of a traditional classroom environment because ICT provides learners with various opportunities to practice the target language outside of the traditional classroom setting, allowing them to become self-sufficient individuals. In fact, the importance of SRL with ICT stems from the changing educational patterns that have emerged, particularly within the frame of EFL and ESL. As learners may have limited opportunities to practice the target language in a traditional setting, SRL becomes essential. Furthermore, SRL is also related to lifelong learning, which emphasizes the importance of individuals regulating their own learning to

acquire a sense of autonomy and mastery over their learning experiences (Pintrich, 2000). For this reason, the development of advanced technological tools such as desktop and laptop computers, tablets, and smart phones has offered individuals new opportunities to practice the target language whenever and wherever they want. In consequence, both scholars and stakeholders have become particularly interested in the concept of self-regulated language learning with ICT (Korucu-Kis, 2020).

Based on this, this research aimed to investigate EFL students' self-regulated language learning (SRLL) by utilizing technology in the context of a preparatory school in Turkey. The following research questions were used in the study:

1. What are the perceptions of students about self-regulated language learning with ICT in a university context?
2. Do students' SRL with ICT vary according to their demographic information such as gender, high school type and department?
3. How do Turkish EFL students self-report their views about integrating ICT in self-regulated language learning process?

METHODOLOGY

Research Design

This current research study intends to investigate self-regulated language learning depending on the increasing use of technology at a university context. First, the quantitative data was collected through 28 Likert Scale questions about individuals' competency of using Information and Communication Technology (ICT) for language learning. The adopted scale had six sub-categories such as goal commitment, affective regulation, social connection, resource regulation, metacognitive regulation and culture regulation. Secondly, as a qualitative research method, an interview consisting of five semi-structured questions was used to gain insight into the individuals' use of ICT to regulate their learning. Based on the purpose of the study, five semi-structured interview questions were prepared by the researcher. The interviews were done with 10 participants who were selected randomly.

Sample and Data Collection

The study included 133 preparatory school students at a public university in Turkey, consisting of 82 males (61.7%), and 51 females (38.3%). Most participants (72.2%) were between 18 and 20 years old, and 78.9 % had a state high school background. Out of the 133 preparatory school students studied, 41 (30.8%) were studying in the Computer Engineering department, while the remaining students were from the departments of Mechanical Engineering, Business, Aircraft Engineering, Economics, Aviation, Electrical Electronics Engineering, Industrial Engineering, and Civil Engineering. The survey adapted from Lai and Gu (2009) and used in the study consisted of two parts: demographic information and Likert scale questions about the use of technology in self-regulated language learning, with the items translated into Turkish and checked for accuracy by a proficient translator, an experienced English teacher, and a native English speaker. In addition, five semi-structured interview questions were prepared and conducted with 10 participants via Zoom, with consent forms explained in Turkish before the interviews. The necessary approvals were taken from relevant authorities before data collection.

Analyzing of Data

The researchers used SPSS to analyze data from a survey, using descriptive statistics to examine participants' perceptions of self-regulated language learning (SRL) and to analyze quantitative data on the use of information and communication technology (ICT) in relation to SRL. The survey's reliability was ensured using Cronbach's Alpha. The researchers also conducted semi-structured interviews, transcribing them from Turkish to English and using content analysis to gain a deeper understanding of SRL and ICT. They discovered some missing data and omitted inconsistent data, ultimately analyzing 133 questionnaires, with a Cronbach's Alpha value of 0.90 for the Likert-scale items indicating high internal accuracy.

RESULTS

Results of the Quantitative Data

The researchers intended to ascertain the participants' perceptions of self-regulated language learning with ICT in the middle of the second (spring) semester. Therefore, participants were asked to choose the best option that was most appropriate for them, and the following results were obtained (see Table 1).

Table 1. ICT use for self-regulated language learning scale

	N	Mean	Standard Deviation
Goal Commitment Regulation	133	4,18	0,56
Affective Regulation	133	3,82	0,74
Social Connection Regulation	133	3,72	0,64
Resource Regulation	133	4,11	0,54
Metacognitive Regulation	133	3,71	0,57
Culture Learning Regulation	133	4,12	0,61
Overall Regulation	133	3,90	0,48

In accordance with the results, it is clear that participants demonstrated a high level of goal commitment regulation. This finding may imply that the utilization of ICT devices help learners to achieve their language learning goals successfully. However, it is possible to state that learners are in need of encouragement in order to use ICT materials to enhance their learning; therefore, they can gain control over the process. Also, enabling participants to become more aware of the importance of social connection regulation is of utmost importance. Utilization of ICT devices has a positive impact on learning the language and the culture as a result of the various and plentiful resources. Therefore, it may be stated that utilization of ICT materials supports language learning outside the classroom environment. Finally, in contrast to other regulations, participants demonstrated low level of metacognitive regulation. It is possible to conclude that learners are in need of the guidance of an instructor.

Considering the demographic variables, different statistical analyses such as t-test and ANOVA were performed to investigate the differences in learners' self-regulation strategies and ICT (see Table 2, 3 and 4)

Table 2. Participants' gender and ICT use for self-regulated language learning

	Gender	N	M	SD	t	P
Goal Commitment Regulation	Female	51	4,21	0,56	0,52	0,60
	Male	82	4,16	0,57		
Affective Regulation	Female	51	3,97	0,63	1,83	0,06
	Male	82	3,74	0,80		
Social Connection Regulation	Female	51	3,82	0,69	1,37	0,17
	Male	82	3,66	0,60		
Resource Regulation	Female	51	4,20	0,54	1,48	0,13
	Male	82	4,06	0,54		
Metacognitive Regulation	Female	51	3,76	0,62	0,73	0,46
	Male	82	3,68	0,54		
Culture Learning Regulation	Female	51	4,24	0,56	1,74	0,08
	Male	82	4,05	0,63		

Note: *p<05

Table 2 shows that there was no significant difference between ICT use for self-regulation and gender. Therefore, it can be observed that participants' ICT use and self-regulation did not differ according to their gender. Previous similar studies (Güler Urhan, 2019; Berk, 2020; C. Lee et al., 2016) reported the same results based on gender within the scope of SRL. It could be stated that the gender gap would no longer be apparent since ICT devices have become an indispensable part of society. In general, it is possible to state that both male and female participants integrate ICT devices, materials and resources with the advent of technology.

Table 3. The school type and ICT use for self-regulated language learning*Note: *p<05*

		School Type	N	M	SD	t	p
Goal Commitment Regulation	Private	28	3,97	0,53	-2,19	<u>0,03</u>	
	State	105	4,23	0,56			
Affective Regulation	Private	28	3,61	0,78	-1,70	0,09	
	State	105	3,88	0,73			
Social Connection Regulation	Private	28	3,52	0,63	-1,83	0,06	
	State	105	3,77	0,64			
Resource Regulation	Private	28	3,97	0,49	-1,53	0,12	
	State	105	4,15	0,55			
Metacognitive Regulation	Private	28	3,66	0,52	-0,52	0,60	
	State	105	3,73	0,58			
Culture Learning Regulation	Private	28	4,09	0,71	-0,29	0,77	
	State	105	4,13	0,58			
Overall Regulation	Private	28	3,76	0,47	-1,70	0,09	
	State	105	3,93	0,47			

Table 3 shows that there was a significant difference between ICT use for Self-Regulation and school type. Thus, participants who graduated from state schools are more competent in goal commitment regulation than private school graduates. Findings indicated that there is a meaningful relationship between high school background and ICT use for SRL. This may show the fact that there is an inequality of opportunity considering the chance of studying at a university. It may be asserted that this inequality of opportunity makes them more aware of their goals. Additionally, private school graduate learners have more opportunities to utilize technological devices in their language learning process when compared to state school graduates. Considering state school graduates, having less opportunity to utilize ICT devices, resources and materials might increase the sense of curiosity. The sense of curiosity might help them to become more willing to utilize ICT devices to regulate their language learning goals.

Table 4. Participants' Department and ICT use for self-regulated language learning

Dimension	Department	N	M	SD	F	P-value
Goal Commitment Regulation	Computer Engineering	41	4,31	0,51	1,29	0,25
	Electrical Engineering	8	4,16	0,56		
	Industrial Engineering	7	4,23	0,31		
	Aviation	9	3,92	0,96		
	Economics	11	4,36	0,45		
	Civil Engineering	5	3,66	0,62		
	Business	14	4,19	0,63		
	Mechanical Engineering	26	4,08	0,51		
	Aircraft Engineering	12	4,13	0,52		
	Affective Regulation	Computer Engineering	41	3,97		
Electrical Engineering		8	3,59	0,85		
Industrial Engineering		7	3,85	0,97		
Aviation		9	3,75	1,06		
Economics		11	4,02	0,67		
Civil Engineering		5	3,60	1,03		
Business		14	3,78	0,58		
Mechanical Engineering		26	3,75	0,78		
Aircraft Engineering		12	3,66	0,67		

	Computer Engineering	41	3,70	0,70	0,81	0,59
	Electrical Electronics Engineering	8	3,60	0,67		
	Industrial Engineering	7	3,59	0,47		
Social Connection Regulation	Aviation	9	3,53	0,42		
	Economics	11	4,00	0,69		
	Civil Engineering	5	4,43	0,48		
	Business	14	3,97	0,72		
	Mechanical Engineering	26	3,68	0,64		
	Aircraft Engineering	12	3,72	0,57		
		Computer Engineering	41	4,20	0,52	1,78
	Electrical Electronics Engineering	8	4,15	0,39		
	Industrial Engineering	7	4,17	0,52		
Resource Regulation	Aviation	9	3,84	0,56		
	Economics	11	4,27	0,36		
	Civil Engineering	5	3,52	0,59		
	Business	14	4,28	0,59		
	Mechanical Engineering	26	4,10	0,61		
	Aircraft Engineering	12	3,90	0,41		
		Computer Engineering	41	3,70	0,62	2,26
Metacognitive Regulation	Electrical Electronics Engineering	8	3,71	0,50		

		Industrial Engineering	7	3,69	0,47		
		Aviation	9	3,28	0,77		
		Economics	11	4,16	0,37		
		Civil Engineering	5	3,54	0,46		
		Business	14	3,98	0,47		
		Mechanical Engineering	26	3,68	0,53		
		Aircraft Engineering	12	3,54	0,39		
Culture Regulation	Learning	Computer Engineering	41	4,26	0,51	2,75	<u>0,008</u>
		Electrical Electronics Engineering	8	4,20	0,30		
		Industrial Engineering	7	4,47	0,37		
		Aviation	9	3,62	0,51		
		Economics	11	4,45	0,37		
		Civil Engineering	5	3,66	0,70		
		Business	14	4,11	0,64		
		Mechanical Engineering	26	4,03	0,68		
		Aircraft Engineering	12	3,83	0,79		
		Computer Engineering	41	3,95	0,50	1,69	0,10
		Electrical Electronics Engineering	8	3,85	0,44		
Overall Regulation		Industrial Engineering	7	3,92	0,40		
		Aviation	9	3,61	0,48		
		Economics	11	4,18	0,38		

Civil Engineering	5	3,55	0,45
Business	14	4,04	0,50
Mechanical Engineering	26	3,85	0,48
Aircraft Engineering	12	3,75	0,35

Note: *p<05

Results shown in Table 4 revealed that there was a significant difference between participants' ICT use for Self-Regulation and their department. A post hoc test was carried out to determine the significance of the difference. Findings of post hoc showed that students from aviation and economics had more metacognitive regulation compared to other departments. Also, students from aviation and economics had more culture learning competence compared to other departments.

Results of the Qualitative Data

The researcher, along with a colleague who accompanied them during the interviews, analyzed the qualitative data collected. To enhance the richness of the data, the interview questions were designed to be semi-structured, with a focus on ICT and self-regulated language learning. Content analysis of the interviews revealed five broad themes: attitudes towards ICT, beliefs towards ICT tools, frequency of ICT utilizing ICT, integration of ICT, and reasons for using ICT (as depicted in Figure 1). Overall, the collaborative effort between the researcher and the colleague helped to facilitate the coding process and provide a comprehensive analysis of the data

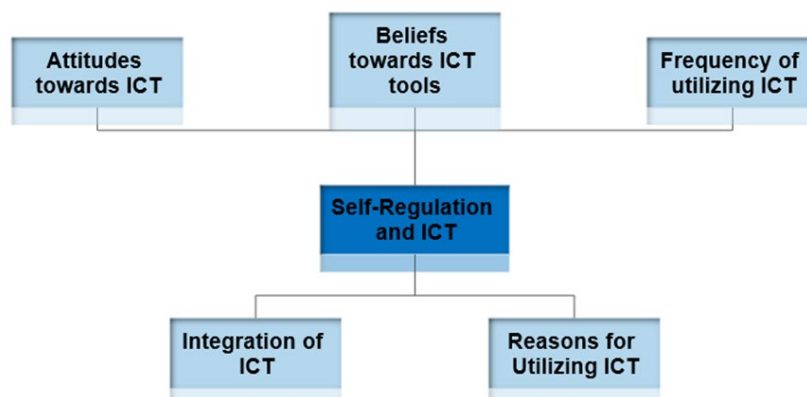


Figure 1. Interview Categories

Attitudes towards ICT

The interviewed participants had mostly positive attitudes towards using ICT tools to enhance language learning. Many of them used a variety of ICT tools to improve their language learning process, such as accessing information easily and quickly, practicing language skills outside the classroom, and playing games with native speakers.

“Technology is in every part of our lives. That's why it is not possible to consider a thing without technology. I think it enables me to access information easily and quickly. Whenever I search for a grammar rule or example, I come across various resources.” (Interviewee 4)

“To be honest, I am a very stressful student and I am shy. With the help of technology, I practice the language outside the classroom. Even if I still have the problem of shyness while interacting with people, I try to do my best. I think this is the easiest way for me and students like me.” (Interviewee 7)

However, one interviewee expressed concern that ICT might distract attention, but still sought out extra materials when necessary. Overall, the participants viewed technology as a helpful aid to language learning.

“I generally do not prefer to use ICT tools because there are lots of advertisements or there may be some messages from social media accounts, but when I feel that I need to practice the language, I look out for some extra materials.” (Interviewee 8)

Beliefs towards ICT tools

All the participants believed that using ICT tools is important for promoting language learning. For example, they mentioned that online applications help them improve their English.

“For example, I find some online applications, and I can easily practice the grammar rules. Whenever I finish a level, I get extra points, and gaining points motivates me to practice more.” (Interviewee 2)

Besides, one of the interviewees expressed disappointment at not having the opportunity to go abroad to learn English, but found an alternative solution by downloading an application to practice speaking English.

“I downloaded an application on my phone and every day I try to speak in English even if I do not have an opportunity to go abroad”. (Interviewee 5)

In terms of the English books, another interviewee mentioned his financial constraints of buying English books and highlighted the convenience of finding online resources to practice English in a variety of forms.

“When I want to buy an English book or a practice book, as a student, I cannot afford to buy the book that I want all the time. For this reason, I try to find online practices or stories in English. In

an online environment, it is really easy to find different kinds of resources or practices”. (Interviewee 8)

Overall, the participants believed that ICT tools can enhance language learning by providing easy access to various resources and opportunities for practice.

Frequency of utilizing ICT

Each participant reported using their cell phones, computers, and social media accounts daily to regulate their language learning. They utilized ICT tools every day for this purpose.

“At the beginning of the term, I subscribed to a website featuring pictures with objects. The participants are required to name them within a limited time and can also compete with each other, which made the experience more enjoyable and helped me become more ambitious about learning new words.” (Interviewee 3)

“I have a blog where I can choose a topic every evening and spend nearly three hours writing about it. After writing, I check for mistakes using a grammar checker program. This helps me identify areas for improvement and work towards achieving perfect writing.” (Interviewee 6)

Integration of ICT

All participants acknowledged the importance of integrating ICT resources into the language learning process due to technological advancements. Moreover, they highlighted an increase in their usage of ICT software following the spread of Covid-19. For example, Interviewee 4 mentioned how an application helps improve his vocabulary knowledge

“Applications extend my vocabulary knowledge. I have an application and every hour, there is a notification that shows me a new word and its meaning. Thanks to this application, I learn new words every hour.” (Interviewee 4)

Similarly, Interviewee 7 shared how online dictionaries improve her pronunciation by stating that *“I always look up words in online dictionaries because they allow me to easily listen to their pronunciation, which I always have trouble with”*. Interviewee 10 also noted how integrating technology has definitely improved their language learning, particularly in their writing skills, as evidenced by their tweets.

The Reasons for Utilizing ICT

When asked about their reasons for utilizing ICT in language learning, all 10 participants emphasized the ease of finding new resources and the richness of learning materials. They reported that ICT resources empower them to take control of their language learning process. Moreover, they expressed their dissatisfaction with traditional learning methods such as writing a word ten times, which they found to be ineffective. Therefore, each participant emphasized the importance of using ICT tools to become the master of their own language learning process.

“I realize that traditional methods of learning, such as writing grammar rules or repeating words, were pointless and ineffective. I used to follow what teachers told us to do, such as writing sentences repeatedly to learn grammar rules or words. However, now I prefer to utilize ICT resources such as watching movies and using other applications or websites to learn English because I am more in control of my language learning.”(Interviewee 1)

Upon analyzing the categories, it was observed that the interviewees had a positive outlook towards the use of ICT in the language learning process. Furthermore, the participants emphasized the significance of utilizing ICT tools to regulate their language learning. All the participants reported that ICT resources allowed them to control their own language learning process. Additionally, the interviewees stated that ICT tools provided them with an opportunity to practice the target language, even when time was limited during lessons. Moreover, one of the participants mentioned that ICT tools allowed learners to access a wide range of resources and materials, thus offering many benefits with its practicality and ease of access. In summary, the interviewees highlighted the many advantages of using ICT in language learning, ranging from its abundance of resources and materials to its practicality.

DISCUSSION

The results of the study revealed that participants demonstrated high levels of goal commitment and a positive perception of ICT tools. These findings are consistent with previous studies (Çelik et al., 2012), suggesting that such learners may be successful in achieving their language learning objectives. However, in addition to these characteristics, affective regulation is also considered crucial for self-regulated learners. Affective regulation refers to the willingness, motivation, and persistence of learners, and it can be defined as emotional management and attractiveness of learning based on SRL (Schumann, 1999; Vrugt & Oort, 2008). Therefore, the integration of ICT tools, such as applications and websites, may decrease the level of unwillingness or boredom during language learning, and engage learners, making the language learning process highly enjoyable. This can be attributed to the fact that learners can visualize things while listening to them simultaneously when using ICT materials. Additionally, since all senses are engaged at the same time, the level of enjoyment might increase. Thus, it is possible to conclude that encouraging learners to use ICT materials to make the learning process more entertaining may help regulate it. On other side, Zimmerman and Schunk (2001) highlighted the significance of social interactions in the process of SRL. The regulation of social connections involves both individuals' social interaction and the role of the social environment. However, despite participants utilizing technology for language learning, the study showed that they had only a moderate attitude towards using ICT materials for social interaction. This may be due to shyness or a lack of awareness regarding the benefits of interacting with others. Studies with similar findings have revealed that learners are often unaware of the importance of technology for communicating with other learners or native speakers (Yang & Chen, 2007; Yot-Domínguez & Marcelo, 2017). Therefore, raising learners' awareness through explicit instruction and strategy training can be beneficial. Regarding resource regulation, which is concerned with learners' management of their learning resources (Puzziferro, 2008), this study found that participants used ICT tools to obtain additional language learning materials, possibly due to the convenience and quick access to information. This, in turn, enabled them to access a wide range of resources and practice the language while regulating their activities outside the classroom. The widespread use of

technological equipment and advancements in technology have facilitated the ease of access to information and resources, allowing learners to regulate their learning process through the utilization of ICT devices, materials, and resources. The studies conducted by Inozu et al. (2010) and Putri et al. (2020) show that learners frequently use online resources such as grammar books for language learning outside the classroom and that the benefits of technology in language learning are better understood outside the classroom. Therefore, it can be concluded that language learning is closely associated with self-regulation and the use of technology outside the classroom. Moreover, it is essential to note that learning English from formal instructional books or instructors may not be enough, and additional resources may be required.

Overall, the results of the study and the literature suggest that ICT tools can assist learners in regulating their learning process and achieving their language learning goals. However, it is crucial to encourage learners to use ICT materials to enhance the learning experience, interact with others for social connection regulation, and plan, organize, and perform learning tasks more effectively for metacognitive regulation. Additionally, it is important to provide explicit instruction and strategy training to raise learners' awareness of the benefits of using technology for language learning and interacting with others.

Metacognitive regulation, as defined by McDonough (2001), involves techniques such as hypothesizing, planning, and monitoring. In this study, participants showed a moderate level of self-regulation competence regarding metacognitive regulation, which aligns with similar findings from previous studies by Şahin-Kızıl and Savran (2016), Çelik et al. (2012), and Lai and Gu (2011d). However, participants may not fully comprehend the significance of monitoring and regulating their language learning with ICT devices, and therefore may benefit from using such tools more frequently to plan, organize, and perform learning tasks. Ultimately, using ICT materials can help learners select appropriate resources to achieve their language learning objectives.

In terms of culture learning regulation, participants in the study demonstrated high self-regulation competence. This could be due to their desire to acquire cultural knowledge of the target society, even if they are less interested in forming social connections. Thus, learners' curiosity towards the target culture may be reflected in their utilization of ICT devices, which can contribute to the globalization of the world by sharing cultural characteristics. Moreover, using technological resources can facilitate the acquisition of cultural knowledge, enabling learners to gain a better understanding of the target culture and become more aware of their language learning process.

When the results were analyzed according to demographic information such as gender, department, and school type, it was found that there is no statistically significant difference between male and female participants in terms of SRL with ICT. One of the most apparent outcomes is that males and females in the current study have nearly the same ICT utilization for SRL. Previous similar studies (Güler Urhan 2019; Berk 2020; C. Lee et al., 2016) have reported the same results based on gender within the scope of SRL. However, when a detailed analysis of the literature was carried out, it was concluded that female learners have more SRL competence by means of technology when compared to males (Güven, 2016; Fındık, 2018). Similarly, results reported by Fernández-Gutiérrez et al. (2020) state that female students tend to support their language learning more than male students. On the other hand, it could be stated that the gender gap would no longer be apparent since ICT devices have become an indispensable part of society. In general, it is possible to state that both male and female participants integrate ICT devices, materials, and resources with the advent of technology. Moreover, results regarding high school type demonstrated that self-regulation competences with ICT materials differ. Findings indicated

that there is a meaningful relationship between high school background and ICT use for SRL. This may show the fact that there is inequality of opportunity considering the chance of studying at a university. It may be asserted that this inequality of opportunity makes them more aware of their goals. Additionally, private school graduate learners have more opportunities to utilize technological devices in their language learning process when compared to state school graduates. Considering state school graduates, having less opportunity to utilize ICT devices, resources, and materials might increase the sense of curiosity. The sense of curiosity might help them to become more willing to utilize ICT devices to regulate their language learning process. However, this may also be the result of the numeric difference between state school graduates and private school graduates.

When considering the various departments in universities, it becomes clear that students must be aware of the entrance requirements and properly prepare for the entrance exams. This process can significantly impact their competence for self-regulation. Furthermore, students are expected to familiarize themselves with the requirements of their desired department in order to adjust their future career accordingly. Regarding the utilization of ICT for SRL, a significant difference was observed between participants' use of ICT and department. Specifically, participants in economics and aviation demonstrated a higher level of metacognitive regulation compared to those in other departments. This finding is consistent with previous research that has demonstrated the requirement of metacognitive regulation in mathematical skills (Özsoy, 2010). It can also be attributed to the fact that the department of aviation requires learners to be fluent in a foreign language and perform tasks that require planning and organization, further contributing to their higher metacognitive regulation. Moreover, the results also indicated that participants in aviation and economics possess a higher level of cultural competence compared to those in other departments. This could be explained by the interdisciplinary nature of culture and its impact on disciplines like economics. Furthermore, students in the department of aviation may have higher cultural regulation due to their potential future careers working with members of other cultures.

In terms of the qualitative data, the findings suggest that participants have positive attitudes towards incorporating ICT devices into their language learning process, likely due to their extensive use of technology in all aspects of their lives. Moreover, the use of ICT devices, materials, and resources may contribute to learners' success in language learning by enabling them to overcome shyness and embarrassment while asking questions and providing an opportunity to practice the target language outside of the classroom. Learners may also use ICT materials as a substitute for costly language learning books. It is worth noting that learners may perceive using ICT materials as enjoyable and pleasurable. The increased reliance on technological equipment may also be attributed to the ongoing pandemic, which has necessitated remote education. Participants believe that integrating ICT devices into language learning improves their learning outcomes, and they may use these devices to regulate their language learning both in and out of the classroom. Participants' reasons for using ICT devices in language learning may vary; they may use them to manage their language learning, access a variety of resources and materials, and practice the target language.

Overall, the use of ICT devices in language learning presents numerous benefits, including enhancing learners' attitudes and success in language learning. Additionally, the abundance of resources and materials available on these devices makes it easier for learners to manage their language learning process, which ultimately contributes to their self-regulated language learning proficiency.

CONCLUSION

Advancements in technology have provided individuals with numerous opportunities, particularly in education. This has resulted in increased access to knowledge and a significant impact on language learning. As a consequence, the integration of technology in language learning has become increasingly popular. In this context, learners can support their language learning process by utilizing technological devices in both formal and informal learning environments. Therefore, the importance of self-regulated language learning (SRL) with technology has dramatically increased. Furthermore, it is worth noting that ICT devices, materials, and resources can assist learners not only in the classroom but also outside of it. This is particularly important given the ubiquitous nature of technology in our lives. In summary, learners need to regulate their language learning process through the use of technology, and this study shows that technology has become an indispensable part of human life. Additionally, it is crucial for language learners to have access to ICT devices, materials, and resources.

In the light of this information, the following recommendations may be helpful. Although this study included 133 participants, conducting further research with a larger sample size would help to enhance the generalizability of the findings. Moreover, to contribute to the existing literature, conducting a similar study with pre-service teachers could be a valuable step. Additionally, it would be worthwhile to conduct further research to investigate how self-regulated language learning with ICT impacts learners' reading, listening, writing, and speaking abilities. It is crucial to consider participants' proficiency levels and how they affect SRL with ICT as an essential factor in future studies. Furthermore, to provide a more comprehensive analysis, future research could incorporate variables pertinent to students' ability to self-regulate their language learning with ICT.

LIMITATIONS

This study utilized both qualitative and quantitative research tools, with interviews as the qualitative tool and questionnaires as the quantitative tool. However, the use of additional qualitative research methods, such as student diaries, could have increased the study's trustworthiness and yielded more reliable data. Another limitation of this research is that the findings cannot be generalized to all preparatory school students enrolled in Foreign Language schools due to the small sample size. Therefore, expanding the sample size could improve the generalizability of the results. Lastly, due to time constraints, the study only employed questionnaires and a limited number of open-ended interviews with the participants. Conducting the study with different participants could yield different results.

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