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SELF-REGULATED LEARNING IN THE DIGITAL AGE:
AN EFL PERSPECTIVE

DİJİTAL ÇAĞDA ÖZ-DÜZENLEYİCİ ÖĞRENME:
YABANCI DİL OLARAK İNGİLİZCE BAĞLAMI

Aysel ŞAHİN KIZIL[1] & Zehra SAVRAN[2]

Abstract: Research on the role of Information and Communication Technologies (ICT) in language learning has ascertained heretofore various potentials ranging from metacognitive domain to skill-based practices. One area in which the potentials of ICT tools requires further exploration is self-regulated language learning, an active, constructive process in which learners take the initiative in their learning experiences. This paper reports on a study which aims to examine English as a Foreign Language (EFL) learners' use of ICT tools to self-regulate their language learning outside the formal instructional setting. A total of 777 university students attending an intensive English language preparatory program participated in the study. Analysis of the data collected through surveys showed that EFL learners were actively engaged in the use of ICT tools for self-regulated language learning, but there were variations both among the students and in aspects of regulating learning through the use of ICT tools.

Keywords: Self-regulated learning, Information and Communication Technologies (ICT), English as a Foreign Language (EFL) Learners

Öz: Dil öğreniminde bilgi ve iletişim teknolojilerinin kullanımı konusunda yürütülen araştırmalar, şimdiye dek üst bilişsel alandan dil becerileri temelli uygulamalara kadar, teknolojik araçların birçok farklı potansiyelini ortaya koymuştur. Bilgi ve iletişim teknolojilerinin potansiyelinin daha fazla araştırılması gereken bir alan da, öğrencilerin kendi öğrenme süreçleriyle ilgili girişimde bulunduğu etkin ve yapıcı bir süreç olan öz-düzenleyici dil öğrenimi alanıdır. Bu çalışma, yabancı dil olarak İngilizce öğrenicilerinin okul dışında öz-düzenleyici dil öğrenimi faaliyetlerinde bilgi ve iletişim teknolojileri kullanımlarını incelemektedir. Çalışmaya, İngilizce hazırlık programına devam eden 777 üniversite öğrencisi katılmıştır. Anket yoluyla toplanan verilerin analizi İngilizce öğrenicilerinin öz-düzenleyici dil öğrenimi faaliyetlerinde aktif bir şekilde bilgi ve iletişim teknolojilerini kullandığını, ancak hem öğrenciler arasında hem de öğrenmenin düzenlenen yönleri açısından farklılıklar olduğunu göstermiştir.

Anahtar sözcükler: Öz-düzenleyici öğrenme, bilgi ve iletişim teknolojileri, İngilizce öğrenicileri

1. Introduction
With the rise of the idea that learning is a lifelong process along with the emphasis on individualized learning, the concept of self-regulated learning (SRL) has attracted much attention in educational contexts (Boekaerts, 1999; Hiemstra, 1994). Having its origins in the literature of educational psychology (Dörnyei, 2003; McDonough, 2001), SRL has been defined as "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behaviour, guided and constrained by their goals and the contextual features of the environment" (Pintrich, 2000 p. 453).

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[1] Assist. Prof., Department of English Language and Literature, Fırat University, Turkey, ayselsahin1@gmail.com
[2] Instructor, School of Foreign Languages, Fırat University, Turkey, zehrasavran@gmail.com

The SRL strategies such as monitoring, goal setting and controlling are considered to be crucial in helping students develop a sense of personal control (Zimmerman, 2000), which is regarded as a major source of motivation for learning. Control over the learning process is one of the factors leading to academic success (Lewis & Vialleton, 2011), and an ability to exercise control and taking initiative in learning is a natural aspect of learning process facilitating learning (Benson, 2001).

Being acknowledged to be crucial for any kind of learning, SRL has recently made its own way in the field of foreign language learning and teaching. Together with the advancement of technological tools, the concept of SRL in language learning context has gained new dimensions (Lai & Gu, 2011; Lai, 2013) as technology has a lot to offer students a variety of sources to get them occupied with language learning activities on their own. Research conducted in the technology-enhanced learning environments have uncovered various potentials of ICT tools for language learning (Chapelle, 2010), and it has been shown that these potentials could enrich both formal instructional context and extend the language instruction beyond the classroom (Kitsantas, 2013; Lai, 2013; McLoughlin & Lee, 2010; Zhang, 2011). However, a number of constraints on the in-class language instruction make it challenging to integrate ICT tools into the formal instructional context (Collins & Halverson, 2009). Thus, one setting in which the strength of ICT tools could be observed is outside the language classroom where learners are considered to deliberately use technology to regulate and organize their language learning process (Lai & Gu, 2011; McLoughlin & Lee, 2010).

Although the extant literature presents studies that provide insights into the impact and efficacy of pedagogical uses of individual technologies (e.g. course management systems in Sanprasert (2010); electronic dictionaries in Peters (2007); blogs in Arslan and Şahin Kızıl (2010); wikis in Franco (2008) and in Şahin Kızıl, (2015) to name just a few) in classroom based language instruction, there is a gap concerning learners' use of ICT tools outside the classroom for language learning (Lai & Gu, 2011). The present study intends to address this gap and provide some insights into learners' self-regulated use of ICT for language learning purposes with a special focus on Turkish EFL learners.

2. Literature Review
2.1. Theoretical Framework
Many theories and models have been presented to get a better understanding of SRL. One of the earliest models, *Two-Dimensional Model,* developed by Spear and Mocker (1984) identifies SRL in an event-learning relationship. In his *four-dimensional model,* Candy (1991) underlines *personal autonomy, self-management, learner-control* and *autodidaxy* which refers to self-instruction taking place outside the formal educational setting in SRL. Brockett and Hiemstra (1991) emphasize the terms *process*, *goal* and *social context* in SRL. Likewise, Garrison (1997) includes both personal attribute and learning process perspectives in his model, and sets forth three dimensions to accomplish SRL: *self-management, self-monitoring and motivation.*

In recent decades, with the proliferation of ICT tools in educational context, the theories underpinning SRL have taken a new shift towards underlining the significance of technology for learning. Accordingly, Song (2005) introduced a conceptual model for SRL in online contexts by elaborating such components as *resource use, strategy use, motivation, planning* and *monitoring*. More recently, considering the idiosyncratic properties of language learning, Thronton (2010) developed a model for self-directed language learning, which makes the

theoretical framework for the present study as well. Thornton's model mainly covers four phases that are recursive in nature.

The first phase is the *planning* phase, which includes analysing needs and current skills, setting goals, choosing resources and finally making a plan. The first two leads to the readiness to learn. The second phase is *implementing* where learner can choose to study on his own or with the guidance of the teacher. The *monitoring* phase gives rise to self-awareness of the language being learnt and which areas the learner has weaknesses in. The last phase is the *evaluating* phase which makes it possible for learners to determine whether they have achieved their pre-set goal or whether they should adapt their study plan. All these phases are reported to aim a better self-direction in language learning (Thronton, 2010). Being recursive in nature, these phases in SRL allow learners to reflect on their learning and assess their progress, and therefore allow learners to make the most of their learning activity.

2.2. ICT and Self-Regulated Language Learning
It has now been widely acknowledged that ICT offers great pedagogical potentials to cater for language learners (Golonka, Bowles, Frank, Richardson, & Freynik, 2014) and provides a significant learning space for autonomous language learning (Lai & Gu, 2011). As ICT tools provide venues for learners to regulate their language learning, they have also great potential for self-regulated learning (McLoughlin & Lee, 2010). In view of the large variety of ICT tools available and their promises for SRL, it is crucial to understand how language learners employ technology to regulate their language learning outside the classroom.

Previous studies, though limited in number, have addressed to the issue of ICT tools and SRL in EFL context. Winke and Goertler (2008) surveyed 911 beginner level EFL students to find out their use and perceptions of technology for self-directed language learning. The findings suggested that while participants use technology for entertainment or information gathering purposes to a large extent, their use of ICT tools for language learning is limited. Only about 25% of the respondents report that they are aware of the language learning potentials of the various technologies they use frequently in their daily lives. In a similar study, Lai and Gu (2011) focused on 279 language learners at the university of Hong Kong. They found out that more than half of the participants use technology frequently to support their language learning outside the school setting, but there are considerable variations among students concerning the regulation of different aspects of their language learning. Lai and Gu (2011) concluded that further research is necessary to have sound claims about ICT use for self-regulated language learning. In a recent study, Çelik, Arkın and Sabriler (2012) investigated EFL learners' self-initiated use of ICT tools to regulate their language learning process. The participants were 399 university students receiving an intensive instruction on English. The data collected through questionnaires indicated that while learners declared positive efforts to regulate their learning resources through ICT, they were less positive regarding the use of ICT tools for metacognitive regulation.

Apart from the research focusing on self-regulated language learning within the broader context of ICT, there are also few studies in the literature investigating the impact of specific ICT tools (e.g. WebQuest, websites) on self-regulated language learning. Hirata (2011) examined Japanese students' (n=55) perceptions towards self-directed language learning through English language websites. Within an experimental design, the researcher as a teacher guided the students in using resources offered by language websites to regulate their language learning. After a-12-week treatment, students were administered a questionnaire on their attitudes towards using internet for self-regulation purposes. Results indicated that web based

learning is effective in promoting planning, monitoring and evaluating skills of the students; thus, contributing to self-regulation in their language learning. In the same vein, Hsiao, Tsai, Lin and Lin (2012) investigated correlation between students' self-regulated level and their learning outcomes from WebQuest learning with self-regulated learning assisted functions. A total of 193 sixth grade language learners participated in the study, and the data consisted of pretest and post test scores of the participants. The study concluded that integrating SRL functions into a WebQuest based language instruction could promote the frequency of SRL behavior in language learners.

One common conclusion reached through the aforementioned studies, there is a need for further exploration of the use of ICT in self-regulated language learning process to unravel the complex nature of technology use for self-regulated language learning (Çelik et al., 2012; Hsiao et al., 2012; Lai & Gu, 2011). Based on the literature sketched out above, this study is an attempt to enrich the literature on the use of ICT for self-regulated language learning purposes. Aiming to investigate the nature and frequency of EFL learners' use of technology tools on their own to regulate their learning process, this study has been guided by the following research question: "What are the perceptions of Turkish EFL learners towards the use of ICT for self-regulated language learning?"

3. Methodology
3.1. Participants
Drawn in accordance with the convenience sampling procedures which "involves choosing the nearest individuals to serve as respondents" (Cohen, Manion, & Morrison, 2000 p.102), participants of the present study were 777 EFL learners attending an intensive language program at Fırat University, Turkey. All the participants were registered for English preparatory program at the school of Foreign Languages where students receive intensive instruction on English before they start their majors at their academic departments. The School of Foreign Languages administered a language proficiency test at the beginning of the academic year. According to the proficiency test, the level of participants was identified beginner and elementary. Table 1 presents detailed information about the participants.

Table 1
Demographic Features of the Participants

	Gender			Age				
	Male	Female	Missing	19-below	20-24	25-30	31-35	Missing
Frequency	591	185	1	235	490	25	6	21
Percentage (%)	76.1	23.8		31.1	64.8	3.3	0.8	
Total		777				777		

As seen in Table 1, 24% of the participants are females and 76% are males. Regarding the age of the participants, the majority of the participants (65%) are between the age ranges 20-24, which is followed by the group of learners aged 19 and younger (31%).

3.2. Data Collection
Collected in 2015, the data for the present study come from the responses of the participants to the survey adapted from the relevant literature (Dörnyei, 2001; Ducate & Arnold, 2006; Lai & Gu, 2011; Lai, 2013). The survey consisted of two sections. The first section asked about demographic information and the learners' access to ICT tools. The second section was Self-Regulated Language Learning Scale (SRLLS) that involved 28 Likert-scale questions divided into 5 parts on the learners' attitudes towards the use of ICT tools in their language learning activities. The items were on a seven-point scale ranging from *strongly disagree* to *strongly*

agree. The six parts of the section respectively are as follows: Goal Commitment, Affect, Social Connection, Resource Regulation, Metacognitive Skills, Culture Learning and their relationship with ICT tools. The pilot study for the instrument was carried out on 20 foreign language learners in the preparatory class. The items were revised and rephrased according to the results of the pilot test.

3.3. Data Analysis
The data collected on learners' attitudes towards the use of ICT tools in their language learning activities was analysed using SPSS Statistics 22. As an initial step, confirmatory factor analysis (CFI) which is a type of structural equation model dealing with the relationships between observed measures or indicators and latent variables (Brown & Moore, 2012) was carried out to validate the data. The results indicated that the survey administered is valid to measure the use of ICT tools for self-regulated language learning. The Cronbach's Alpha value was calculated 0.96, which refers to a high inner consistency of the collected data (Dörnyei, 2007). Additionally, independent samples t-test which is commonly used when there are two factors (e.g. gender) under investigation (Muijs, 2004) and variance analysis were used to evaluate the associations between language learning and demographic variables and technology use for self-regulated learning purposes.

4. Findings and Discussion
4.1. Linguistic and technological profiles of the participants
The first part of the survey included items asking about the demographic features of the participants, their achievement levels in learning English identified by the school of foreign languages, and their preferred ways of accessing ICT tools. Accordingly, 76% of the participants were males and 24% were females. Regarding the success rates in learning English, 40% of the respondents reported that they scored between 61 and 80 in the achievement tests given by the school, and 30% of them scored between 41 and 60 points.

A high percentage of the participants (87%) reported either ownership of or easy access to ICT tools. More than half of the participants (53%) stated that they had laptop computers, and 13% mentioned having tablet computers. In order to understand if there were statistically significant differences with regard to male and female respondents' use of ICT for SRL, independent samples t-test analysis was carried out (Table 2).

Table 2
T-test Results: Gender

	x	SD	t	p
Male Participants	136.30	37.59	2.23	.026
Female Participants	143.88	29.32		

As seen in Table 2, there is a difference between male and female students' use of ICT tools for self-regulated language learning, and the difference is statistically significant ($p<0.05$). Considering the mean scores for male (x=136) and female participants (x= 143), it could be claimed that female learners have a greater tendency to use ICT tools for their out-of-school language learning activities. This finding is in line with the results of previous studies on gender differences related to the use of ICT tools (Hohlfeld, Ritzhaupt, & Barron, 2013; Jones, Ramanau, Cross, & Healing, 2010) in spite of the contrast with much of the related literature (Selwyn, 2009), which found out that male learners have a better skill and positive attitude towards using ICT tools. Within the Turkish context regarding the gender differences

in terms of using ICT tools for language learning, Guven (2016) report similar results revealing that girls prefer to use ICT for language learning much more than boys.

The second phase of the data analysis was involved in the correlation, if any, between academic performance of the learners as measured by the achievement tests administered by the university and their use of ICT tools for self-regulated language learning as measured by SRLLS. The results of Pearson correlation analysis revealed that there was a significant positive correlation between SRLL and academic performance of the learners ($r=0.083$, $t=0.046$ $p<0.05$). This finding could be interpreted as the greater tendency EFL learners have on self-regulated language learning, the higher they achieve in their academic performance. This is hardly surprising because a number of previous studies indicated that self-directed learners were generally more successful (McClelland & Wanes, 2012; Zimmerman & Schunk, 2001). This finding echoes the results of the study conducted by Inozu, Sahinkarakas and Yumru (2010) with EFL learners spending time for out-of-class language learning. The researchers found a positive association between self-directed learning and language gains.

4.2. EFL Learners Use of ICT to Regulate Language Learning
In order to understand how participants use ICT tools for SRL purposes, which is the major focus of this investigation, the survey items were analysed over six factors: Goal commitment, Affect, Social Connection, Resource Regulation, Metacognitive Skills, and Culture Learning. In the data collection instrument, the term ICT tools were used in its broadest sense; however, students were provided with an explanatory statement placed at the beginning of the survey which included example ICT tools to make sure that they understood what was meant by ICT. Table 3 displays EFL learners' attitudes towards the use of ICT tools for goal commitment purposes within self-regulated language learning context.

Table 3
Perceptions towards Goal Commitment and ICT

	SA/A %	NS %	SD/D %	p
1. ICT tools are important sources to maintain my interest in achieving my language learning goals.	78.9	6.8	11.8	.005
2. I believe ICT tools can help me in reaching my ultimate goal in learning English.	79.9	7.1	12.9	.005
3. I believe ICT tools can help me achieve my language learning goals quickly and efficiently.	81.5	6.3	12.1	.005

Goal setting is one of the hallmarks of self-regulation and directly affects motivation of learners (Zimmerman, 2000). A drive to attain goals and a commitment to set goals are among the characteristics of students excelled at SRL (Pintrich, 2004). As seen in Table 3, majority of the students expressed their positive attitudes towards the role of ICT tools in committing goals in their language learning process. This finding is consistent with the findings by Lai and Gu (2011) who reported learners' positive engagement with technology for goal commitment regulation. Based on this finding, it could be claimed that ICT is a significant source for learners to reach their goals in learning language more quickly and efficiently. One reason for students' positive perception of ICT for goal commitment regulation is, as pointed out by Proske, Narciss and Körndle (2011), related to the unique feature of ICT in providing multiple sources of information in multiple formats and in offering multiple interactional possibilities.

Table 4
Perceptions towards the Use of ICT for Affective and Resource Regulation

	SA/A %	NS %	SD/D %	p
4. When I feel bored with learning the language, I use ICTs to decrease the boredom and increase the enjoyment.	77.4	7.1	15.5	.005
5. I use ICTs to make the task of language learning more attractive to me.	78.0	7.4	14.6	.005
6. I feel ICTs effectively maintain my interest and enthusiasm in learning the language.	75.9	8.6	15.5	.005
7. When I start to resist learning the language, I use ICTs to help myself regain the interest and enthusiasm.	73.0	10.8	16.2	.005
8. When I feel I need more learning resources in the language, I use ICTs to expand my resources.	75.2	10.1	15.7	.005
9. I use ICTs to increase my learning experience outside the language classroom.	70.5	9.7	19.8	.005
10. I use ICTs to create and increase opportunities to learn and use the language.	71.3	10.3	18.4	.005
11. I use ICTs to search for learning resources and opportunities to help achieve my goals.	69.9	12.7	17.4	.005
12. I search for attractive language learning materials and experience delivered by ICTs.	65.3	13.0	21.8	.005

Affective regulation is considered among the important traits of self-directed learners. Vrugut and Oort (2008) note that self-regulated learning is closely linked to affective factors such as willingness to make an effort and persistence. As can be seen in Table 4, learners take a very positive stance towards the use of ICT tools for affective and resource regulation. Three out of every four respondents (75.2%) reported that they relied on ICT tools when they needed extra materials in learning language, and nearly two thirds of the students (65.3%) considered ICT based materials as a source for turning the language learning into an attractive process. This finding confirms what Candy (2004) observes about the potential of ICT tools in facilitating self-regulated learning through their capacity to put learners in contact with plentiful resources. Additionally, up to 70% of the students stated that they used technology to expand their learning outside the school, which lends further support to the idea that ICT tools are effective in constituting a learning space for out-of-class activities (Lai, 2013). Another significant component of SRL is considered to be social connection and culture learning regulation (Lai & Gu, 2011; Zimmerman, 2000). Ala-mutka (2009) puts forward that new technologies provide people to get a sense of social connection so they can meet their needs to interact with each other. Table 5 displays EFL learners' use of ICT tools for regulating their language learning in terms of culture and social connection.

Table 5
Perceptions towards the use of ICT for Social Connection and Culture Learning Regulation

	SA/A %	NS %	SD/D %	p
13. ICTs help to make my language learning a relaxing process.	73.8	11.4	14.8	.005
14. ICTs make me enjoy learning the language more	73.7	10.2	16.1	.005
15. I use ICTs to increase the time I spend on learning the language	62.2	15.3	22.5	.005
16. I use ICTs to connect with native speakers of the language	58.0	11.8	30.2	.005
17. I use ICTs to connect with other learners all over the world	54.2	12.2	33.6	.005
18. I use ICTs to search for encouragement and support from other learners of the language.	51.5	13.4	35.0	.005
19. I use ICTs to help myself to increase my ability to interact with the target culture	58.1	13.2	28.7	.005
20. I use ICTs to understand and appreciate the target culture better	58.4	14.2	27.4	.005
21. I use ICTs to find information on language and culture.	64.1	13.5	22.3	.005

As can be seen from Table 5, the learners indicated that although they use ICT as a source for learning, they seem to have a relatively less positive attitude towards the use of ICT to improve their social relationships and to learn the target culture. Nearly one third of the participants had a disagreement on the use of ICTs to connect with native speakers (30.2%) and other learners of the target language around the world (33.6%) and to seek encouragement and support from other learners (35%). This finding is interesting because one of the great strengths of digital environments is that they provide learners with interaction opportunities and increased access to authentic language input via communicating with native speakers (Golonka et al., 2014); however, as things stand, most of the EFL learners in this study do not fully exploit this potential offered by ICT tools. Similar results for Turkish EFL learners were echoed in Öz (2014) who reported that only 20% of the participants had high L2 willingness to communicate with others. One explanation for the lower tendency of Turkish EFL learners to use ICT for interacting with other learners and native speakers of the target language could be that they are not aware of the importance of this potential of technology in their language learning, which leads to the conclusion that learners' level of awareness should be raised through explicit instruction and strategy training as interaction do not take place without instructional support, instruction and guidance and boosting learners' encouragement (Aghaee & Keller, 2016; Northrup, 2001). The last dimension on which learners' perceptions were measured was the use of ICT for metacognitive regulation. Table 6 displays the results.

Table 6
Perceptions towards the use of ICT for Metacognitive Regulation

	SA/A %	NS %	SD/D %	p
22. I know how to use ICTs to effectively monitor myself to achieve the learning goals at each stage	65.7	15.5	18.8	.005
23. I plan learning tasks to do outside of school that involve the use of ICTs	53.8	18.8	27.4	.005
24. I plan relevant materials to do outside of school that involve the use of ICTs	53.9	16.6	29.5	.005
25. I adjust my language learning goals using ICTs	58.4	13.2	28.4	.005
26. I am satisfied with the way I use ICTs to help myself continue in reaching my learning goals	68.4	13.5	18.0	.005
27. I set sub-goals for the next stage of learning in the light of how much I can understand and produce when using ICTs to acquire information or communicate with others.	60.2	17.6	22.2	.005
28. For the areas that I am weak in, I know how to select and use appropriate ICTs to improve the areas.	67.1	13.7	19.2	.005

Metacognitive regulation is characterized by such strategies as planning, monitoring, and evaluating one's learning activities and using selective attention (McDonough, 2001). An overall look at the rates in Table 6 reveals that EFL learners perceive the role of ICT for metacognitive regulation not as important as affective or resource regulation. Almost one third of the participants either disagreed (18.8%) or stated being not sure (15.5%) about the use of ICT tools for monitoring their learning process. One fifth of the respondents mentioned about lack of knowledge about selecting and using appropriate ICTs to improve the language skills in which they are weak. This finding regarding learners' relatively less positive attitudes towards the use of ICT for regulating metacognitive aspects of their language learning remarks the importance of strategy training in language learning. In line with the previous studies, it is clear that learners should be encouraged and supported in the use of ICT tools in connection with metacognitive strategies (Çelik et al., 2012; Lai & Gu, 2011). This support

could be in the form of providing information on metacognitive strategies, on ICT resources and guidance on how to select and use technology tools while learning language outside the school setting.

To sum up, findings regarding EFL learners' use of ICT to regulate language learning indicate that participants tap into ICTs to regulate different aspects of their language learning experience, especially for their goal commitment regulation, affective regulation and resource regulation. In this respect, the present study makes a case for supporting the findings of other researchers (Çelik et al., 2012; Lai & Gu, 2011; Steffens, 2006) that reported positive perception of and engagement with the use of ICTs for affective regulation. One significant feature of ICTs is that they enable the learners to study in their own time, at their own pace and at their own level (Motteram, 2013). As such, ICTs could make the task of language learning a relaxing process and more attractive to students, which lead them to keep their interest and enthusiasm. As for the resource regulation, it is a fact that ICTs can provide learners with myriads of resources delivered in various formats (e.g. audio, video etc…), which help learners choose in accordance with their own needs and preferences. In this way, they can boost resource regulation of the learners effectively (Proske et al., 2011). Different from the findings of previous studies, this study found out that EFL learners were not making use of ICTs for metacognitive and social regulation, which could be linked to the necessity for strategy training and awareness raising activities for EFL learners. Concluding the study, following section presents the implications arising from these findings.

5. Conclusion

Adopting SRL as the theoretical framework to understand the students' use of technology for language learning purposes, this study has found that results regarding technological profiles of the participants are mostly similar to those reported in previous research, which indicates that language learners do use ICT tools to regulate their learning activities (Lai & Gu, 2011; Winke & Goertler, 2008; Zhang, 2011). One obvious finding emerging from this study is that female learners are more inclined to use ICT tools than male learners, which is in contrast with much of the relevant literature (Çelik et al., 2012; Selwyn, 2009). Another major finding is that participants in this study are using ICT tools to regulate different aspects of their language learning process outside the school setting. Accordingly, learners possess positive engagement with ICT tools for goal commitment, affective regulation and resource regulation; however, they hold less positive attitudes towards using technology for social learning activities. Last remarkable finding of the study is in the category of ICT for metacognitive regulation: most of the participants' less positive attitude towards using ICT tools to monitor their learning processes or plan tasks for language learning implies that they are not aware of the significance of the metacognitive strategies for language learning.

Based on the results of this study, it is recommended that explicit instruction on the use of ICT tools for SRLL purposes should be provided for the EFL students especially within the context of metacognitive strategies. There is an agreement in the relevant literature that self-regulated learning requires metacognitive skills, and metacognitive strategies training could result in improved learning (Vovides, Sanchezalonso, Mitropoulou, & Nickmans, 2007). Another implication has to do with designing awareness-raising activities for language learners in terms of social connection regulation and culture learning regulation. Culture learning regulation here points to the process in which learners use various ICT tools to search for answers to the questions on language and culture and to interact with the target culture. The results depicted in Table 5 imply that EFL learners in this study are not fully aware of the potentials of ICT tools for culture learning regulation. Therefore, it is

recommended that learners be provided with guidance on the importance of knowledge of culture in learning a language to raise their awareness. Additionally, scaffolding by language teachers on using various ICTs such as online chat or email for culture learning could help learners appreciate the target culture better by enabling the participants to enter into intercultural communication. Encouraging technology in classes could expand the learners' cultural awareness.

As this study mainly relies on self-report data, longitudinal and experimental studies could be undertaken to investigate the connection between ICT use for SRLL and actual language learning. Further research could also focus on the effectiveness of strategy instruction on self-directed language learning behaviors. Finally, future research including different learner populations could be conducted for greater validity and generalizations.

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