The Relationship between Digital Literacy Skills and Self-Regulated Learning Skills of Open Education Faculty Students

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Abstract

Distance learners can be accepted as autonomous, self-regulated learners who can design their own learning processes since they are active users of Information Communication Technologies (ICTs). With this perspective, the first aim of this study was to detect the usage frequency of self-regulated learning skills and digital literacy skills; and to find out if there was a correlation between these skills of Open Education Faculty (OEF) students’ English learning. The succeeding aim of the study was to find out if there was a significant relationship between digital literacy skills and self-regulated learning skills of the OEF students in terms of age, gender, English proficiency levels and duration of ICT use. To reach these aims, the data were gathered from a total of 203 students by using Digital Literacy Scale and Self-Regulated Learning Skills Scale. The results divulged that students’ self-regulated learning perception levels increase in parallel with their digital literacy skill levels. Based on the results, various implications were drawn from the study in order to raise students’ awareness towards Digital Literacy Skills and Self-Regulated Learning Strategies.

Keywords: Information and Communication Technologies (ICTs), digital literacy, self-regulated learning, distance education, English learning.

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Introduction

Information and Communication Technologies (ICTs), as an exhaustive term, has been playing a pivotal role in both formal and distance education. ICTs underpin a new digital era in which information is supported, enhanced, delivered, shared and archived by both learners and instructors. The use of new ICTs in courses, subsidises learner autonomy as it gives greater freedom and flexibility as well. When this conformity is considered, it can be realized that the action of learning might take place anytime and anywhere so the use of ICT has an effective place in maintaining distance education as well.

‘Digital literacy’ can be explained as the multiplicity of literacies associated with the use of digital technologies and they include hardware and software used by individuals for educational, social or entertainment purposes in schools and at home. ‘Self-regulated learning’ which needs to be fostered in higher education context (Dabbagh & Kitsantas 2012) can be described as a strategy that makes learning more effective for the learners. In this strategy, learners set goals, make plans, select strategies, self-evaluate, and self-monitor (Azevedo et al., 2010) in order to bring their own intrinsic motivations up to transform their information into knowledge (Zimmerman & Kitsantas, 2005).

Successful language learners often attribute their achievements in language learning to active engagement with the target language beyond the classroom (Lamb, 2002). In this regard, digital literacy and self-regulated learning seem to become more widespread for providing students with flexibility to learn at their own pace. Research to date claims that there is a positive correlation between digital literacy and Self-Regulated Learning (SRL) skills of learners (Yang & Kim, 2014) and that digital literacy requires effective SRL skills (Greene et al., 2014). Technology-enhanced learning environments do not only provide opportunities for, and foster the development of, SRL abilities (Carneiro et al., 2007) but they also are best used by learners with self-regulated learning abilities, and those enhances learning outcomes (Hannafin & Hannafin, 2010).

When evaluated within the scope of distance education, it can be indicated that students who have digital literacy skills and SRL skills become able to achieve inert learning, which is the main key to academic success. To be engaged in the learning activity more, students with self-motivating abilities can develop SRL skills in time for taking part in an active learning process whereby they construct learning goals, regulate their cognition, recultivate behavior (Paris & Paris, 2001). Distance learners can be accepted as autonomous, self-regulated learners
who have digital literacy skills that infers reading-writing skills, but without paper, pencils, books, or lectures (Murray, 2020). Since students become active participants in using ICTs, and transform to be digital literates, they can fit into the digital modern society. With this in mind, the aim of this study was to find out digital literacy levels and SRL skills of Open Education Faculty students in using information and communication technologies for English learning.

There are various studies which investigate the relationship between Digital Literacy Skills and Self-Regulated Learning Skills yet there is not much empirical evidence on how this relationship occurs for Open Education Faculty students. Thus, this study was carried out in order to fulfill the gap in the literature. The first reason why this study is different is that the studies mentioned in the literature review part were generally carried out in face-to-face education settings. However, this study is unique because it was carried out with distance learners who never had face-to-face education. Another difference of this study is that there are studies conducted with OEF learners on their ICT usage and digital literacy skills but there are no studies investigating self-regulated learning skills of the OEF students. The last difference of the study is that digital literacy and self-regulated learning skills of OEF students were not investigated before in terms of their English language learning. All in all, this study is unique in terms of the reasons stated above.

To work through the relationship between digital literacy and self-regulated learning, independent variables were chosen as age, gender, English proficiency level and duration of ICT. The reason why age was selected as the first independent variable is because the Open Education Faculty accepts students of all ages. The same examination was done for gender. So, the researchers focused on gender to observe which gender has a tendency of having higher digital literacy and self-regulated strategies. English Proficiency level was the third independent variable to investigate if SRL skills and digital literacy skills differ by the level of students aligned with their proficiency levels. Lastly, duration of ICT use was chosen as the last independent variable to see if it affects expertise of the students in using ICTs.

Therefore, the researchers asked the following research questions:

RQ1. What are the self-regulated learning skills of Open Education Faculty students?

RQ2. What are the digital literacy skills of Open Education Faculty students?

RQ3. Is there a significant relationship between digital literacy skills and self-regulated learning skills of Open Education Faculty students?

RQ 3.1. Is there any significant difference between uses of digital literacy skills and self-regulated learning skills in terms of age among the students?
RQ 3.2. Is there any significant difference between uses of digital literacy skills and self-regulated learning skills in terms of gender among the students?

RQ 3.3. Is there any significant difference between uses of digital literacy skills and self-regulated learning skills in terms of English proficiency levels among the students?

RQ 3.4. Is there any significant difference between uses of digital literacy skills and self-regulated learning skills in terms of duration of ICT use among the students?

In connection to this, the findings of this study might shed light on how sufficient distance learners are in using ICTs and how autonomous and self-regulated they are. Another importance of this study is that it can give ideas to researchers and practitioners about the relationship between digital literacy levels and self-regulated learning skills.

**Literature review**

**Digital Literacy**

Digital literacy is one of the skills that distance learners should have. By being separated from time and space, distance learners should exhibit high levels of digital literacy in order to make use of available information and communication technologies in learning (Maphosa & Bhebhe, 2019). In this regard, becoming skilled in digital learning is crucial because skilled learners can access the necessary information through digital technologies such as internet platforms, social media and mobile devices. As Nanni and Pusey (2020) state, many of the students who undertake higher education already have significant, if unevenly developed, digital literacy skills, so drawing on learners’ already proficient digital literacy skills allows teachers to create meaningful and engaging projects that provide opportunities for learners to hone their current abilities and acquire new skills at the same time.

As a result of the increasing digitalization of learning in higher education, one of the most striking features expected from learners is their transformation to digital literates (Miller, 2015). Learners first need to be information literates, which means that they should have the ability to access, evaluate, and use information from a variety of sources, and thereafter become digital literates who have the ability to find, evaluate, and compose clear information through multiple sources. In this connection, the skill-based learning reverses to a functional use of technology (Gourlay et al., 2013) and thus learners may first handle the necessary information in general and then be capable of using technological devices to reach the target information. However, for Ng (2012), users need to adapt to emerging technologies in order to be accepted as a digital literate.
Self-Regulated Learning (SRL)

SRL has been specifically defined as ‘the ability of learners to control the factors or conditions affecting their learning’ (Dembo et al., 2006, p. 188). Self-regulated learners take control and responsibility of their learning process so they become autonomous and improve themselves in their learning situations (Koksal & Dundar, 2018). As Choi et al. (2018) state, good self-regulated learners are likely to be successful in their learning processes and their subsequent performance. In a nutshell, responsibility taking, adequate guidance and feedback, strategic planning, continuity and high level of self-motivation and active participation are the other crucial factors in becoming a self-regulated learner (Zimmerman et al., 2015; Zimmerman & Kitsantas, 2005).

Zimmerman (1998) compares the attributes of naive or novice learners and skillful self-regulated learners and states that novice learners are trapped by the vicious circle characterized by unclear and distant goals, low self-efficacy beliefs, unfocused plans, self-evaluation avoidance, low ability attribution, and negative self-reactions. In contrast, skillful self-regulated learners are benefited by the virtuous circle (i.e., specific goals, high self-efficacy beliefs, self-monitoring, strategy attribution, and positive self-reactions) that helps them to control their own learning, select appropriate learning strategies, and motivate themselves without relying on teachers or other external agents of instruction. In this connection, autonomy and SRL have both been defined as learners taking responsibility for their own learning (Benson, 2001; Dembo & Eaton, 2000). SRL also contains cognition, motivation, behavior, and context of regulation; the concept of SRL understands the learner holistically, integrating the variables that were previously subdivided (Dörnyei & Ryan, 2015). According to Choi et al. (2018) for learning in a foreign language context to be successful, learners are expected to be more self-regulated than learners in a second language context where adequate language input and opportunities for productive use of the target language are present.

Digital Literacy and Self-Regulated Learning in English

Research to date has proved that digital literacy and self-regulated learning have close connection in terms of acquisition of knowledge. As Demir (2019) states the use of digital information and communication technologies (ICTs) as a tool for out-of-class learning is now commonplace among students of the 21st century. Simply defined as technological tools and resources for communicating, creating, storing, transmitting, and managing information (Kenning, 2007), ICTs make it possible for students to study and learn more on their own than
they are likely to learn at school (Blake, 2016). That is to say, the role of ICT tools in promoting autonomous learning has been foregrounded in recent years, and ICTs and self-regulation have turned out to be essential themes of interest in education (Demir, 2019, p.101).

There are some studies carried out on ICT research and self-regulated learning skills of language learners (Celik et al., 2012; Pearson, 2004; Sahin-Kizil & Savran, 2016; Lai & Gu, 2011; Murray, 2008; Rahimi & Bigdeli, 2013; Hirata, 2010). For example, focusing on Turkish tertiary EFL learners’ use of ICTs for self-regulated learning, Celik et al. (2012) revealed that the students use ICTs mainly to practice listening, vocabulary, and writing skills, connecting with other students to improve these skills. Furthermore, the students were reported to use them for regulating different facets of language learning experience, such as reaching language learning goals, and motivating themselves by making learning an enjoyable process through the use of ICT tools. Similarly, working with Chinese EAP students in New Zealand, Pearson (2004) found that these students used ICT tools, such as TV, the internet, and movies, to improve their language skills, while at the same time reporting that such out-of-class learning endeavours provided them with more enjoyment and learning, in comparison to learning in the classroom. Sahin-Kizil and Savran (2016) aimed to reveal the usage of ICT tools by 777 tertiary EFL learners in Turkey, to self-regulate their language learning outside the classroom. They found that the students use ICTs to promote different dimensions of self-regulation, such as goal commitment regulation, affective regulation, and resource regulation. Lai and Gu (2011) examined Hong Kong university students’ use of technology to self-regulate their language learning outside the formal classroom. It was reported that while they used technology actively to self-regulate different aspects of their language learning experience, there appeared variations in terms of technology use for social purposes. Murray (2008) conducted a life history research study with adult Japanese EFL learners, and collected their language learning stories. The participants reported engaging with pop cultural elements, such as movies, magazines, TV programs, and music, to be essential components of out-of-class learning. Conducting an experimental study with 60 Iranian EFL learners, Rahimi and Bigdeli (2013) found that the experimental group instructed through ICT tools obtained higher levels of self-regulation in comparison to the control group instructed through traditional teaching. Hirata (2010) investigated Japanese EFL learners’ attitudes toward self-directed language learning through English web contents by conducting a 12-week treatment on using online resources in websites to regulate learning and found that learning through web-based content helped participants improve their evaluation, planning and monitoring skills.
As connoted by Perera et al. (2016), there is a significant bidirectional relationship between the digital literacy skill levels of students and their academic self-regulatory learning skills. Likewise, Salter (2013) proves that the use of technology is acknowledged to foster self-regulated learning in higher education contexts. However, some other factors should also be taken into consideration. As discussed by Lai and Gu (2011) these factors are level of proficiency, learning history, beliefs about language learning, and they are essential in explaining variation in second language learners’ engagement with modern technological tools. Therefore, it can be concluded that using self-regulatory skills and having high digital literacy affect foreign language learning performance positively.

Regarding ICT usage of the learners, it can be claimed that the ones with high SRL abilities are closer to reaching learning outcomes compared to others. In the study conducted by Firat (2017), it is indicated that ICT is one of the key concepts in distance education and without these technologies implementing distance education applications is almost impossible. Therefore, the researcher in his study in which 86,842 students in the school year 2013-2014 at OEF of Anadolu University participated from 40 different programs proved that almost all students have internet connection, and half of the students have internet access both at home and at work (Firat, 2017). Another study of the same researcher highlights that the findings demonstrate that the higher the ICT use of the distance education students, the higher their autonomy in e-learning environments (Firat, 2016). As revealed by Ozdamar-Keskin et al. (2015), when the digital literacy competence of 20,172 OEF learners is analyzed, it is found that learners had basic skills in terms of using ICTs at a basic level and neither web sites nor digital tools are used commonly for educational purposes.

**Methodology**

**Design of the study**

In this study, a cross-sectional quantitative research method is used. In cross-sectional research the data are collected at a single point in time or in a brief time period (called contemporaneous measurement) from participants (Johnson, 2001) and through questions and answers given to problem research from a sample (Check & Schutt, 2012). In a cross-sectional survey design, data is collected only once from one or more samples to measure current attitudes or practices at a certain time frame. Therefore, this research method is used in order to comprehend how digital literacy levels and SRL skills of Open Education Faculty students in using ICTs for English learning correlate.
Participants

This study was undertaken at the Open Education Faculty of Anadolu University where digital literacy has been playing a pivotal role in distance education. 203 participants in the Facebook group (called as Distance Learners) who were Anadolu University Open Education Faculty students learning English at A1 and A2 levels took part in the study. This online educational platform, which has been carried out virtually since 2014 has more than 9,028 members and is set up specifically for EFL learners. The study areas of the participants include Public Relations, Economy, Turkish Language and Literature, Public Administration. Among the participants are graduates as well. Table 1 shows the demographic information of the participants:

<table>
<thead>
<tr>
<th>Categories</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-30</td>
<td>45</td>
<td>22.2</td>
</tr>
<tr>
<td>31-40</td>
<td>81</td>
<td>39.9</td>
</tr>
<tr>
<td>41-50</td>
<td>50</td>
<td>24.6</td>
</tr>
<tr>
<td>51 and above</td>
<td>27</td>
<td>13.3</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>90</td>
<td>44.3</td>
</tr>
<tr>
<td>Female</td>
<td>113</td>
<td>55.7</td>
</tr>
<tr>
<td>English proficiency level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beginner</td>
<td>137</td>
<td>67.5</td>
</tr>
<tr>
<td>Elementary</td>
<td>66</td>
<td>32.5</td>
</tr>
<tr>
<td>Duration of ICT usage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 years and below</td>
<td>47</td>
<td>23.2</td>
</tr>
<tr>
<td>6-10 years</td>
<td>46</td>
<td>22.7</td>
</tr>
<tr>
<td>11 years and above</td>
<td>110</td>
<td>54.2</td>
</tr>
<tr>
<td>Registered program*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Services</td>
<td>22</td>
<td>10.8</td>
</tr>
<tr>
<td>Administration</td>
<td>20</td>
<td>9.9</td>
</tr>
<tr>
<td>Public Relations and Advertising</td>
<td>13</td>
<td>6.4</td>
</tr>
<tr>
<td>Economy</td>
<td>9</td>
<td>4.4</td>
</tr>
<tr>
<td>Public Administration</td>
<td>9</td>
<td>4.4</td>
</tr>
<tr>
<td>Turkish Language and Linguistics</td>
<td>9</td>
<td>4.4</td>
</tr>
</tbody>
</table>

*The programs that most of the students are enrolled (There are students in 45 programs in total)

Methods of Data Collection and Instruments

To invite the participants to the research, the researchers posted a virtual message regarding the subject matter and of these members, 203 volunteer participants accepted to take part in this study voluntarily.

Before collecting the data, the participants were asked to read and submit an electronic
approval consent form. Following consent, the participants were asked to complete the online survey including 35 questions excluding demographic information. The answers of the survey, including three parts, were downloaded in an excel format.

**Survey Instrument**

The first part of the survey contained demographic information and the second part aimed to find out digital literacy skills of participating students. For this aim, Digital Literacy Scale which was developed by Ng (2012) and included 17 5-point scale (strongly agree to strongly disagree) statements was used. The original form of the scale comprises of 4 components namely *attitude* (attitude and motivation while learning with ICT), *technical* (having operational skills to use ICT for learning), *cognitive* (being able to think critically in the search, evaluate and create cycle of handling digital information), and *social dimension* (being able to use the internet responsibly for communicating, socializing and learning). By carrying out validity and reliability studies, Hamutoglu et al. (2017) adapted the scale into Turkish and the correlations of the items between the original and target language were held with 37 academicians. The results showed that the scale has the language validity. Following this step, Exploratory Factor Analysis- EFA, Confirmatory Factor Analysis- CFA and reliability analysis were carried out and found that the instrument fit the original form. In this regard, Digital Literacy Scale of Ng (2012) was adapted to Turkish and proved to be valid and reliable. Since the students of this study were in beginner-elementary English proficiency level, the above-mentioned scale was found convenient and administered to students.

The third part aimed to find out the students’ self-regulated language learning skills. The questionnaire was originally developed by Hirata (2010) and contained 18 Likert-type questions. The scale included Likert-type items ranging from “not at all true of me = 1” to “very true of me = 6” in six categories. The scale consisted of 18 items, including cognitive, metacognitive, affective, behavioral, and environmental components, and it had an acceptable overall reliability (α =.82). SRL perceptions of the participants were reported under four components as behavioral regulation, cognitive regulation, environmental regulation, and metacognitive regulation. The scale was originally developed for Kanji learning in New Zealand context, so it was adapted into foreign language learning context in Turkey by Yuce (2019). Translation and back translation processes were carried out by the EFL instructors first by changing “Kanji learning” expressions in the original scale as “foreign language learning,” and Likert-type expressions of “not at all true of me” and “very true of me” were changed from
“strongly disagree = 1” and “strongly agree = 6.” Then, the scale was implemented with the participants. Though four components were found in the original scale, the factor analysis results of the translated scale showed no clear distinction among these components. For this reason, the scores obtained from the translated scale were evaluated in terms of overall average, and it was found to have an overall reliability of $\alpha = .81$.

The researchers combined the two scales, formed a questionnaire and shared it in the Facebook group. Official permissions for use of these scales have been obtained from the required researchers. The answers were collected over a period of 4 weeks via Google forms.

In order to evaluate the SRL skills and digital literacy skills of Open Education Faculty students, the data collected via Google forms and were made ready for data analysis.

**Data Analysis**

First of all, students’ SRL skills scale and digital literacy scale scores were analyzed on the basis of items and the mean and standard deviation values were calculated. Then, it was determined whether the scores showed normal distribution or not by examining the Skewness-Kurtosis Z values, shapiro-wilk test results and distribution graphs together. The Skewness-Kurtosis Z values and Shapiro-Wilk test results related to the data are given in the findings section.

**Findings**

When the data collected within the scope of this quantitative research aiming to evaluate the SRL skills and digital literacy skills of Open Education students are analyzed, findings related to the students’ SRL skills and digital literacy skills, how these strategies and skills differ according to demographic variables and the relationship between SRL perceptions and digital literacy skills were obtained. On the axis of the research questions of the study, the findings can be summarised as below.

**Students’ Self-Regulated Learning Skills**

The first research question aimed to find out SRL skills of Open Education Faculty students. For this question, the researchers utilized means ($\bar{x}$) and standard deviations (Sd) of SRL skills scale. Average Scores of Self-regulated Language Learning Skills Scale is seen in Table 2.
When we look at Table 2, “studying after failure” (item 14) has been observed as the highest average score ($\bar{x}=3.99; Sd.=1.19$) whereas “sparing enough time for learning” has the lowest average score ($\bar{x}=2.52; Sd.=1.33$). Furthermore, it is seen that the total average score of the students is 3.22. Thus, it can be said that SRL skills of Open Education Faculty students are at intermediate level.

The second research question aimed to find out digital literacy skills of Open Education Faculty students. For this question, the researchers utilized means ($\bar{x}$) and standard deviations (Sd) of digital literacy skills scale. Average Scores of Digital Literacy Scale is seen in Table 3.

<table>
<thead>
<tr>
<th>Scale Items</th>
<th>$\bar{x}$</th>
<th>Sd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Good at using ICTs</td>
<td>3.87</td>
<td>1.15</td>
</tr>
<tr>
<td>2. Teachers’ using ICTs</td>
<td>4.41</td>
<td>0.83</td>
</tr>
<tr>
<td>3. Enjoying using ICTs when learning</td>
<td>4.62</td>
<td>0.69</td>
</tr>
<tr>
<td>4. Studying cooperatively with friends through ICTs</td>
<td>4.50</td>
<td>0.82</td>
</tr>
<tr>
<td>5. Being motivated to learn by using ICTs</td>
<td>4.58</td>
<td>0.70</td>
</tr>
<tr>
<td>6. Adapting new technologies</td>
<td>4.54</td>
<td>0.79</td>
</tr>
<tr>
<td>7. Receiving supports from friends through internet</td>
<td>3.70</td>
<td>1.33</td>
</tr>
<tr>
<td>8. Knowledge about internet-based activities</td>
<td>3.49</td>
<td>1.31</td>
</tr>
<tr>
<td>9. Being self-managed and independent in learning by using ICTs</td>
<td>4.24</td>
<td>0.89</td>
</tr>
<tr>
<td>10. Knowledge about different technologies</td>
<td>3.59</td>
<td>1.18</td>
</tr>
<tr>
<td>11. Learning more by using ICTs</td>
<td>4.36</td>
<td>0.80</td>
</tr>
</tbody>
</table>
There are no opposite items.

As Table 3 reveals, “enjoying using ICTs when learning” (item 3) has the highest average score (\(\bar{x}=4.62; \text{Sd.}=0.69\)) whereas “knowledge about internet-based activities” (item 8) has the lowest average score (\(\bar{x}=3.49; \text{Sd.}=1.31\)). Furthermore, it is seen that the total average score of students is 4.12 (\(\bar{x}=4.12; \text{Sd.}=0.64\)). Thus, it can be indicated that Open Education Faculty students in this study have high digital literacy skills.

**Normality Values of Scale Scores according to Demographic Variables**

Before analyzing the SRL skills scale and digital literacy scale scores with the demographic variables, the Skewness-Kurtosis Z values, Shapiro-Wilk test results, and distribution graphs were presented. Whether the data were normally distributed was determined by evaluating all of the scores together.

**The third research question** aimed to find out the relationship between digital literacy and SRL of Open Education Faculty students. Firstly, it was determined whether the scores showed normal distribution or not. Z values were found by dividing the skewness-kurtosis values of the data by the standard error value. In order for the data to show a normal distribution, the values of Z are -1.96 < Z < 1.96 for n < 50; For 50 < n < 300 it was expected to be -3.29 < Z < 3.29 (Kim, 2013). In addition, the data were analyzed by the normality test. Since it is stated that the Shapiro-Wilk test can be used for 3 < n < 5000 (Royston, 1995), the results of Shapiro-Wilk test of the data are taken into consideration. In addition, distribution graphs of data were created. Whether the data show normal distribution or not is determined by examining the Skewness-Kurtosis Z values, shapiro-wilk test results and distribution graphs together. The results showed that while self-regulated learning scale scores are normally distributed according to gender, English level and duration of ICT, digital literacy scale scores do not show normal distribution according to gender, English level and duration of ICT use. Furthermore, self-regulated learning scale scores, digital literacy scale scores and the age of students do not show normal distribution.
The Relationship among Demographic Variables, Self-regulated Learning Scale Scores and Digital Literacy Scale Scores

Research question 3.1 aimed to find if there is a statistically significant difference among the students in terms of age regarding digital literacy and self-regulated learning skills. For this reason, students’ ages were analyzed with the self-regulated learning perceptions scale and digital literacy scale scores, and their ages were analyzed with the Spearman rho test as seen in Table 4.

<table>
<thead>
<tr>
<th>Age</th>
<th>Self-regulated Learning Scale Scores</th>
<th>N</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>203</td>
<td>-0.088</td>
<td>0.211</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Digital Literacy Scale Scores</td>
<td>203</td>
<td>-0.106</td>
<td>0.134</td>
</tr>
</tbody>
</table>

As Table 4 divulges, correlation between self-regulated learning scale scores, digital literacy scale scores and the age of students is not significant. Thus, it can be indicated that there is not a significant correlation between self-regulated learning scale scores, digital literacy scale scores and the age of students.

Research question 3.2 aimed to find if there is a statistically significant difference among the students in terms of gender regarding digital literacy and self-regulated learning skills. While students' self-regulated strategies of learning scale, their gender was analyzed with the T-test, the digital literacy scale scores, their gender was analyzed with the Mann Whitney-U test. T-Test results between Self-regulated Learning Scale Scores and Gender is seen in Table 5 and Mann Whitney-U Test Results between Digital Literacy Scale Scores and Gender is seen in Table 6.

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>( \bar{x} )</th>
<th>Sd.</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>90</td>
<td>53.93</td>
<td>13.89</td>
<td>-3.583</td>
<td>201</td>
<td>0.000*</td>
</tr>
<tr>
<td>Female</td>
<td>113</td>
<td>61.32</td>
<td>15.12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant at p<0.001 level.

As seen in Table 5, there is a statistically significant difference between the students’ self-regulated learning scale scores and gender (p<0.001). It was determined that the said difference occurred in favor of female students. It can be said that female students’ self-regulated learning skills are higher than male
As Table 6 exposes, there is not a statistically significant difference between students’ Digital Literacy skills and gender (p>0.05). Thus, it can be said that there is not a relationship between students’ Digital Literacy skills and gender.

Research question 3.3 aimed to find if there is a statistically significant difference among the students in terms of their English proficiency level regarding digital literacy and self-regulated learning skills. While students' self-regulated skills of learning scale were analyzed with the T test, the digital literacy scale scores, their English proficiency levels were analyzed with the Mann Whitney-U test.

Complementary comparison analysis was carried out with the Mann Whitney-U test to determine from which groups the difference was based on the Kruskal-Wallis test results. Finally, students’ self-regulated learning skills scale scores and digital literacy scale scores were analyzed with the Spearman rho test. T test results between Self-Regulated Learning Scale Scores and English level is seen in Table 7 and Whitney-U Test Results of Digital Literacy Scale Scores and English Level is seen in Table 8.

As Table 7 shows, there is a statistically significant difference between the students’ self-regulated learning scale scores and their English level (p<0.001) and this difference occurred in favor of elementary level students. Thus, it can be said that elementary level students have higher self-regulated learning skills compared to beginner level students.
As Table 8 displays, there is a statistically significant difference between the students’ digital literacy scale scores and their English level (p<0.001) and this difference occurred in favor of elementary level students. Thus, it can be said that elementary level students have higher digital literacy skills compared to beginner level students.

Research question 3.4 aimed to find if there is a statistically significant difference among the students in terms of duration of ICT use regarding digital literacy and self-regulated learning skills. While students’ self-regulated learning perceptions scale scores and duration of ICT usage were analyzed by one-way ANOVA, digital literacy scale scores and duration of ICT usage were analyzed by Kruskal-Wallis test. One-way Anova Results of self-regulated learning Scale Scores and Duration of ICT Use is seen in Table 9 and Kruskal-Wallis Test Results of Digital Literacy Scale Scores and Duration of ICT use is seen in Table 10.

### Table 9 One-way Anova Results of self-regulated learning Scale Scores and Duration of ICT Use

<table>
<thead>
<tr>
<th>Duration of ICT Use</th>
<th>N</th>
<th>Mean</th>
<th>Sd.</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 years or below</td>
<td>47</td>
<td>58.02</td>
<td>15.49</td>
<td>321.714</td>
<td>2</td>
<td>160.857</td>
<td>0.476</td>
<td>0.622</td>
</tr>
<tr>
<td>6-10 years</td>
<td>46</td>
<td>59.87</td>
<td>14.63</td>
<td>45302.887</td>
<td>100</td>
<td>226.514</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 years and above</td>
<td>110</td>
<td>57.29</td>
<td>15.03</td>
<td>45541.601</td>
<td>202</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>203</td>
<td>58.04</td>
<td>15.01</td>
<td>45518.601</td>
<td>202</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 9, there is not a statistically significant difference between self-regulated learning Scale Scores and duration of ICT use (p>0.05). Thus, it can be said that there is not a relationship between self-regulated learning Scale Scores and duration of ICT use.

### Table 10 Kruskal-Wallis Test Results of Digital Literacy Scale Scores and Duration of ICT use

<table>
<thead>
<tr>
<th>Duration of ICT Use</th>
<th>N</th>
<th>Mean Rank</th>
<th>X²</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 years or below</td>
<td>47</td>
<td>80.71</td>
<td>16.013</td>
<td>2</td>
<td>0.000*</td>
</tr>
<tr>
<td>6-10 years</td>
<td>46</td>
<td>87.89</td>
<td>17.00</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>11 years and above</td>
<td>110</td>
<td>117.00</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>203</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant at p<0.001 level.

As Table 10 shows, there is a statistically significant difference between the students’ digital literacy scale scores and duration of ICT use (p<0.001). In order to find from which group this difference stemmed from, complementary comparative analysis was carried out. The results of the group comparisons were shown in Table 11.
Table 11 Mann Whitney-U Test Results of Digital Literacy Scale Scores and Duration of ICT use

<table>
<thead>
<tr>
<th>Duration of ICT Use</th>
<th>Digital Literacy Scale Scores</th>
<th>N</th>
<th>Sum of Ranks</th>
<th>Mean Rank</th>
<th>U</th>
<th>Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 years or below</td>
<td></td>
<td>47</td>
<td>2810.50</td>
<td>59.80</td>
<td>1682.50</td>
<td>-3.462</td>
<td>0.001*</td>
</tr>
<tr>
<td>11 years or above</td>
<td></td>
<td>110</td>
<td>9592.50</td>
<td>87.20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-10 years</td>
<td></td>
<td>46</td>
<td>2864.00</td>
<td>62.26</td>
<td>1783.00</td>
<td>-2.906</td>
<td>0.004*</td>
</tr>
<tr>
<td>11 years or above</td>
<td></td>
<td>110</td>
<td>9382.00</td>
<td>85.29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant at p<0.001 level.

When Table 11 is analyzed, it was determined that the significant difference between the digital literacy scale scores of students who have used ICT for 5 years and those who have used ICT for 11 or more years has been in favor of students who have used ICT for 11 years or more (p <0.01). Likewise, it was determined that the significant difference between the digital literacy scale scores of students who have used ICT for 6-10 years and those who have used ICT for 11 years or more has been realized in favor of students who have used ICT for 11 years or more (p <0.01). No significant difference was found between the digital literacy scale scores of students who have used ICT for 5 years and those who have used ICT for 6-10 years (p> 0.05). According to these results, it can be indicated that students who have used ICT for 11 years or more have higher levels of digital literacy skills than those who have used ICT for both 5 years and 6-10 years.

Finally, a correlation analysis was done between students’ self-regulated learning perception scale scores and digital literacy scale scores. The findings can be observed in Table 12.

Table 12 Spearman rho Test Results Between Self-Regulated Learning Perceptions Scale and Digital Literacy Scale Scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>R</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-regulated learning</td>
<td>203</td>
<td>0.420</td>
<td>0.000*</td>
</tr>
<tr>
<td>Scale Scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Literacy Scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scores</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant at p<0.001 level.

As Table 12 indicates, it is seen that there is a positive and moderately significant correlation between students’ self-regulated learning perception scale scores and digital learning scale scores. Therefore, it can be indicated that as students’ self-regulated learning perception levels increase, their digital literacy skill levels increase as well.
Discussion

This study primarily examined self-regulated learning skills and digital literacy skills of Open University Faculty students. Moreover, it aimed at revealing if there was a significant difference among the students in terms of age, gender, English proficiency level and duration of ICT use regarding digital literacy and self-regulated learning skills. Finally, it tried to find if there is a relationship between digital literacy and self-regulated language learning skills of Open Education Faculty students.

The first research question aimed to detect self-regulated learning skills of participating students. The findings showed that students who participated in this study have intermediate level SRL skills. This finding is in accordance with the findings of Kormos and Csizer (2014) who claim that a large number of learners would need guidance on how to select and use self-regulatory strategies that assist their language learning processes although many students can find and apply the self-regulatory strategies that are particularly suited for their learning styles and personality. Similarly, Broadbent and Poon (2015) suggest that SRL skills are relevant to student performance and it differs across contexts and students’ reasons for learning. In this regard, by setting a clear goal of learning at the beginning, distance learners may develop a deep understanding of subject matter, so SRL skills will give rise to academic success.

The second research question aimed to detect digital literacy skills of Open University students. Students’ digital literacy scores were found to be high. Since they are Open Education Faculty students who learn at a distance and use ICT tools to follow the lessons and to study, this result seems inevitable. As revealed by Ozdamar-Keskin et al. (2015), Open Education Faculty students have remarkable skills in managing the digital learning platforms. Tang and Tseng (2013) also echoed the research supporting that distance education students make better use of electronic information and have high digital learning skills if they are self-sufficient.

The third research question aimed to find out the relationship between digital literacy and self-regulated language learning skills of Open Education Faculty students.

First part of the question (3.1) aimed to find if there is a statistically significant difference among the students in terms of age regarding digital literacy and self-regulated learning skills. The results indicated no significant difference in terms of age. Thus, it can be said that there was not a correlation between SRL skills and digital literacy skills of students in terms of age. In literature, it is argued by Dunlosky, Kubat-Silman and Hertzog (2003) that older adults can
learn to study effectively and test themselves such that they allocate necessary restudy to appropriate information with task experience and sufficient training. Contrarily, Miles and Stine-Morrow (2004) note that older adults do not allocate effort to allow more study time to compensate for item difficulty as do the younger adults.

The second part of the question (3.2) aimed to find if there is a statistically significant difference among the students in terms of gender regarding digital literacy and self-regulated learning skills. The results indicated that there is a statistically significant difference between the students’ SRL scale scores and gender. This finding has support in literature as well. For example, Omur and Cubukcu (2017) found that female students had higher self-regulated points than male students in terms of the relationship between self-regulation skills and motivation levels.

The third part of the question (3.3) aimed to find if there is a statistically significant difference among the students in terms of their English proficiency level regarding digital literacy and self-regulated learning skills. Results showed that there is a statistically significant difference between the students’ self-regulated learning scale scores, digital literacy skills and their English level and this difference occurred in favor of elementary level students. Thus, it can be said that elementary level students have higher SRL skills and digital literacy skills compared to beginner level students. This finding is in line with Mezei (2008) who claimed that higher level language learners are more aware of their learning processes, and they know how to regulate their learning behaviors.

The last part of the question (3.4) aimed to find if there is a statistically significant difference among the students in terms of duration of ICT use regarding digital literacy and self-regulated learning skills. Results indicated that there is not a statistically significant difference between SRL Scale Scores and duration of ICT use whereas there is a statistically significant difference between the students’ digital literacy scale scores and duration of ICT use. It can be indicated that students who have used ICT for 11 years or more have higher levels of digital literacy skills than those who have used ICT for both 5 years and 6-10 years. Thus, it can be said that the more students use ICT, the more proficient they become in using ICTs. This finding is in line with Lai and Gu (2011) who claimed that active users of technology demonstrated higher digital literacy.

Overall, the findings showed that there is a correlation between digital literacy and self-regulated learning strategies of students. It can be implied that high levels of digital literacy
and self-regulation tend to result in better academic performance and learning motivation as claimed in prior research (Lee et al., 2015) in literature. As Demir (2019) states ICT tools promote self-regulated learning, and facilitate the learning process for English language learners. Furthermore, playing digital games also enhances students’ language learning. According to Mahayanti et al. (2020) digital game-based learning has a positive effect on young learners' self-regulated learning and through playing digital games, students unconsciously develop elements such as metacognition, strategic actions, and motivation, which happen to be the sources of self-regulated learning.

**Conclusion**

Participants in this study are students who try to complete their A1- A2 level English courses at a distance. When evaluated in this regard, these students try to reach information at their own pace, unlike on campus students, in accessing any information. While reaching information, the need arises to provide explicit instruction on the use of ICT tools for self-regulated language learning under the umbrella of metacognitive strategies (Sahin-Kizil & Savran 2016), to conduct studies to determine what sort of training is needed and how it should be carried out (Celik et al., 2012), and to shed light on the complex dynamics of the link between self-regulation and ICT use among language learners (Demir, 2019). In this connection, this study proves that students’ self-regulated learning perception levels increase in parallel with their digital literacy skill levels and there is a significant correlation between the mentioned skills.

Open and distance education is heavily dependent on the use of ICTs, both instructors and students must be digitally literate (Maphosa & Bhebhe, 2019) with self-regulated learning skills. Therefore, it is increasingly important for distance education students to become skillful learners in finding, evaluating, using, sharing and creating information on online education platforms by using ICTs. In this regard, for the researchers of this study, it was crucial to examine digital literacy levels and self-regulated learning skills of Open Education Faculty students in using information and communication technologies for English learning.

Based upon the findings and discussion parts of this study, it can be concluded that even though Open University Faculty students have intermediate level of SRL skills, they still need guidance from their instructors in order to assist their language learning processes. Firstly, distance learners outside the classroom need awareness of the different strategies to clear goals of learning at the beginning of the learning activity. Secondly, it can be indicated that distance
learners have striking skills in managing the digital learning platforms and thus they become able to reach and use electronic information. Thirdly, age is not a factor regarding digital literacy and self-regulated learning skills, but for gender it is totally different. Female students have a tendency of having higher self-regulated skills than male students. Lastly, SRL skills and digital literacy skills were higher for elementary level students compared to beginner level students aligned with their English proficiency levels. Finally, it can be concluded that the more students use ICT, the more proficient they become in using these technologies. Considering all the points discussed, it is hoped that this study may contribute to existing literature in which the data were collected quantitatively and where there is a lack of research on Digital Literacy Skills and Self-Regulated Learning Strategies of Open Education Faculty students specifically for enhancing English learning.

**Pedagogical Implications**

As it was stated in different parts of this study, Open Education Faculty students do not have face-to-face classes. They follow the courses online and then take the exams. The implications of this study are various: Primarily, instructors who have no direct interaction with Open Education Faculty students may increase their students’ awareness towards Digital Literacy Skills and Self-Regulated Learning Strategies by adding classes to the curriculum. Webinars and e-seminar lessons can also be carried out online on how to use ICTs and how to become self-regulated learners. Additionally, students’ awareness may be increased by conducting synchronous or asynchronous lessons. Lastly, Web 2.0 tools can be used for self-study of students both in formal and in informal platforms. In addition, longitudinal studies may be carried out investigating the relationship on digital literacy and self-regulated learning skills and how this relationship affects the students’ success and scores in English.

**Limitations and Suggestions for further research**

The results of this study were based on quantitative analysis using two scales and no other data collection tools. Although collecting the data by means of two scales in a short period of time was suitable, the data obtained from this study only provided a limited insight on digital literacy and SRL skills of the students. As (Dörnyei, 2001) states, quantitative methods require averaging out all responses across a whole sample which makes it difficult to justify the subjective variety of individual life, individual characteristics of the students were not included in this study. Thus, future research can use other data collection methods such as interviews and reflective diaries to provide more in-depth information on using self-regulatory strategies.
and digital literacy skills.

Another limitation was the number of students participating in the study. Although the scales were shared in a Facebook group that consisted of about 9,028 students, only 203 of them answered the questions in the scales. Thus, generalizing the results is not feasible. If more students had participated in the study, more valid and reliable results would have been gained. Another study consisting of a larger group of participants could provide a better understanding. This study was carried out with students studying in the Open Education Faculty in Turkey. This study can be replicated with distance students in a variety of universities across the world as well.

References


competences and learning habits of open and distance learners. *Contemporary Educational Technology, 6*(1), 74-90.


