# Investigating Students' Perceived Digital Literacy Skills and Attitudes towards ICT Use in a Blended Learning Environment

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| Article Info | Abstract |
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| Date submitted: 01.03.2023 <br><br> Date accepted: 07.04.2023 <br><br> Date published: 10.04.2023 <br><br><br><br> *Research Article* | With the wide use of technology, teaching and learning English has changed in recent years. Students are required to possess the necessary digital literacy skills to keep up with the usage of technology in language education as technology has become a part of foreign language education. The present study aims to find out university students' digital literacy skills and their attitudes of using ICT while learning English. Adopting a quantitative research design, 116 EFL university students attending the preparatory program of a public university in Bursa, Turkey participated in the study. Data was gathered via two instruments and analysed using descriptive statistics, t-test and correlation. The results showed that university students experienced an average level of DL and positive attitudes towards using ICT while learning English. No significant difference was observed across gender. Furthermore, a strong positive correlation was identified. This means that, the more students are capable of using DL, the more positive they feel about using ICT while learning English. Considering the new emerging learning modes like Blended Learning and Distance learning, the study highlighted the importance of getting students prepared to use technology effectively while learning English in technology integrated learning modes.<br><br>**Keywords:** Digital Literacy Skills, ICT, Attitude, ELT, Blended Learning Environment |

## 1. Introduction

Information and Communication Technologies (ICT) have entered almost all parts of our lives. Especially after the COVID-19 outbreak in March, 2020, everyone including teachers, students as well as parents has been faced with the reality of using technology for educational purposes. As a result, it has become globally apparent that having some competencies for using digital-related tools is vital at many educational levels (Sánchez-Caballé et al., 2020; Portillo et al., 2020). Furthermore, this global outbreak has also raised the attention to new technology-integrated learning modes such as blended learning (BL) environments. As described by Watson (2008), BL is "Classroom instruction integrating significant, required online components that extend learning beyond the classroom and beyond the school day". With

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this BL approach, students can learn in class via interaction with the teacher and other students while also learn outside the class through asynchronous self-study using the online materials included in the BL content or independent study materials. Making use of ICT in and out of class times in BL environments necessitates learners to have efficient and effective digital literacy (DL) skills as students are expected to do technology-integrated activities.

One of the areas where the usage of ICT and the necessity of DL skills gains importance is foreign language education. When considering foreign language learning (FLL), the positive effect of integrating ICT is undeniable. One of the positive effects of using ICT in FLL is that it can assist students in improving their foreign language abilities (Khaloufi & Laabidi, 2017) and also, it has the capacity to foster attitudes that are positive while learning a language. ICT has the potential to establish an interesting and positive learning environment for students and there are various ways of using ICT within the language teaching and learning process. When considering the BL environments where students are exposed to ICT in class used by teachers and also out of class times when they are expected to complete technology-related tasks, the necessity for learners to have efficient DL skills emerges significantly. However, do students learning a foreign language in a BL environment really possess efficient DL skills to accomplish an effective ICT integration? Furthermore, do students' DL skills affect their attitude towards using ICT throughout their language learning process?

Several studies have been conducted on students' DL skills and technology-related competencies (Cote, & Milliner, 2017; Son et al., 2017; Jan, 2018; Arrosagaray et al., 2019; Mishra, 2019; Altun, 2021; Cabangacala et. al., 2021; Dashtestani & Hojatpanah, 2020; Nguyen & Habók, 2021; Koyuncuoglu, 2022). While some studies have found out that students have good technology-related competencies (Son et al., 2017; Jan, 2018; Arrosagaray et al., 2019; Mishra, 2019; Altun, 2021; Koyuncuoglu, 2022), other studies have revealed that students have adequate (Cabangacala et. al., 2021; Nguyen & Habók, 2021) or low technology-related competencies (Cote, & Milliner, 2017; Dashtestani & Hojatpanah, 2020). However, the results have shown differences in regard to students' technology-related competencies. Furthermore, some studies focusing on students' attitudes towards ICT use (Liu, 2009; Alduwairej, 2014; Kitchakarn, 2015; Tran et al., 2019; Kopinska, 2020) have revealed that using ICT in language learning had a positive effect on students' attitudes. Still, it is worth questioning whether students' DL skills are affecting their attitudes towards the use of ICT in a BL environment as this usage necessitates some technology-related competencies.

Apart from investigating students' DL skills and attitudes towards ICT use separately, some studies focused on the relationship between them (Liaw & Huang, 2011; Nassoura, 2012; Rhema & Miliszewska, 2014; Abdullah et al., 2015; Jan, 2018; Arrosagaray et al., 2019). In general, DL skills have been found to be in association with students' attitudes towards ICT use. However, only a handful of studies (Jan, 2018; Arrosagaray et al., 2019) within the English as a Foreign Language (EFL) context have examined the relationship between DL skills and students' attitudes towards ICT use in FLL. Apart from Arronsagaray et al. (2019)'s study investigating DL skills and students' attitudes towards ICT use within different learning modes such as distance, BL and face-to-face environments, to the knowledge of the researcher, there has not been a study conducted on investigating this issue within an EFL BL environment.

Considering that BL environments have gained popularity recently, this study is significant because it contributes to the literature by means of analyzing university students' DL skills within the BL environment. Furthermore, the study will contribute to the knowledge of other researchers interested in understanding the relation between university students' DL skills and their attitudes towards ICT use in EFL BL environments. Also, this study is important as it compares university students across gender.

Additionally, the findings might provide some implications for instructors and course designers about integrating ICT within foreign language education and considering their students' DL skills beforehand.

## 2. Literature Review

### 2.1 Digital Literacy

DL is defined as "the ability properly use and evaluate digital resources, tools and services, and apply it to lifelong learning processes" by Gilster (1997). In addition to this definition, Bawden (2001) further emphasized the importance of knowing the way technological devices work as well as being aware of technology. Besides, DL was associated with the concept of "know-how" and it was highlighted that DL meant to know how to use technology effectively (Gourlay et al., 2013; Hall et al., 2013). More recently, some researchers added to the definition of DL. Roche (2017) emphasized DL as the capacity to assess, make use of, and produce information using digital media while also interacting with people and society. Despite the different definitions of DL, it is possible to consider DL as the knowledge, skills and attitudes necessary for using technology tools to produce, communicate, collaborate, search and analyze the information for certain goals in the digital era (Nguyen & Habók, 2021).

When considering education and the fact that technology-related issues have entered the education system especially after the Covid-19 outbreak, DL can be considered as a "survival skill in the digital era" (Eshet-Alkalai, 2004) as everything people do today somehow necessitates technology use. Eshet-Alkalai (2004) underlines the need for DL to assess the quality of learning activities and research done in online environments as well as the need of DL for academic institutions and the corporate sector to communicate more effectively. Also, it is necessitate learners as well as teachers to have high DL. Those learners whose DL is high are found to readily grasp, comprehend and perform effectively in online learning (López-Meneses et al., 2020). As Bayrakcı (2020) summarizes, DL as "the whole of digital competencies" including effectively and conveniently use digital technologies in several domains, such as learning, problem-solving, communication, entertainment, civic engagement, and private space; the use digital technologies for production and collaboration; assessment of digital processes and technologies; development of critical thinking and knowledge of digital technologies; and building digital technology-related cognitive, social, and technical competencies.

There are different terms used in the literature for referring to DL and there is not a single term accepted and agreed on for general usage. One of these terms is digital competence and when considering the educational context, it is defined as the capacity to apply the knowledge, attitudes, and skills required to plan, implement, evaluate, and continuously review ICT-supported teaching and learning processes, along with a solid theoretical foundation, investigation, and experimentation (From, 2017). For this study, both DL and digital competence are considered as the same concept as defined by Bayrakcı (2020) "the whole of digital competencies".

Several studies have been conducted on students' DL skills and technology-related competencies (Cote, & Milliner, 2017; Son et al., 2017; Jan, 2018; Arrosagaray et al., 2019; Mishra, 2019; Altun, 2021; Cabangacala et. al., 2021; Dashtestani & Hojatpanah, 2020; Nguyen & Habók, 2021; Koyuncuoglu, 2022). With the aim of investigating DL level, Cote & Milliner (2017) conducted a study in Japan with college students preparing for a study abroad program. The results indicated that the students' DL was limited which was similar to the results of Dashtestani & Hojatpanah (2020)'s study. Son et al. (2017) conducted a comparative study focusing on students' DL from two different universities, Canada and Japan. Students from different English learning contexts (EFL and English for academic purpose, EAP) showed different levels of DL. Even though students from both contexts perceived their DL as good, students from EAP context perceived their DL higher than those from EFL context. The results of several studies (Jan, 2018; Arrosagaray et al., 2019; Mishra, 2019; Altun, 2021; Koyuncuoglu, 2022) were

similar to Son et al. (2017)'s study indicating that students had good technology-related competencies. Cabangacala et al. (2021) and Nguyen & Habók (2021)'s studies, on the other hand, showed that students had neither good nor bad DL; the students indicated adequate level of technology-related competencies.

## 2.2 Attitudes towards ICT Use and FLL

ICT is an umbrella term for all electronic tools used to gather, store, present, and distribute information to audiences. It includes both hardware and software as well as communication tools (Berce et al., 2008; Olatoye 2011). Considering the last decades, it is clearly seen that ICT is used within FLL more commonly. Using ICT within FLL enables different types of communication like human to human as well as human to machine. Furthermore, it provides learners with opportunities to collaborate and interact with different people. There are ICT tools like e-mails, social networks which enable learners to get in touch with native speakers while learning English (Annamalai, 2017). These kinds of tools provide real life experiences, in other words, practice opportunities within real context of language use (Kramsch & Throne, 2002). Apart from this, ICT also provides learners with various materials which they can use on their own while learning English. Also, the use ICT can be used for taking the attention of the students and establish positive attitudes towards language learning and is highly recommended to be used in the language classroom for increasing language teaching and learning (Tri & Nguyen, 2014).

When considering the learners of this century who are born into technology, making use of it throughout their learning process seems to be inevitable. Using ICT in FLL classes has the potential to make learners be more interested in English learning (Chouit et al., 2017), furthermore, it encourages learners to be active participants who are enjoying language learning. Ilter (2009) also highlights the potential of ICT use for increasing students' motivation in EFL contexts. As interest, motivation and attitude are essential for FLL learning, it is worth and necessary to use ICT in FLL. As ICT includes a wide variety of electronic tools, for the current study, the focus is on the language teachers' general use of ICT in the class and students' own use of ICT for further practicing ICT.

Several studies have been conducted on students' attitudes towards ICT use (Liu, 2009; Alduwairej, 2014; Kitchakarn, 2015; Tran et al., 2019; Kopinska, 2020). Liu (2009) conducted a study in Chine with the aim of investigating students' attitudes towards ICT in learning English. According to the results, students considered the use of ICT throughout their English language learning process to be advantageous. In another study conducted by Alduwairej (2014), the attitudes of college students towards using technology within the class in an ESL context was investigated via a questionnaire. According to the results, these students generally had positive attitudes towards technology usage in the class. Furthermore, they highlighted technology as an essential tool for learning English. Kitchakarn (2015)' study on students' attitudes towards computer usage showed that students had positive attitudes and highlighted the usefulness of computers within their language learning process. Additionally, Tran et al. (2019)'s study revealed not only positive attitudes towards the use of technology but also the fact that students used technology-related tools frequently during FLL. Also, Kopinska (2020) conducted a study on students' attitudes towards technology usage in an EFL Spanish context. They had positive attitudes towards technology usage and it was highlighted as being useful for language learning.

## 2.3 DL, Attitudes towards ICT Use and BL Environment

Foreign language education is one of the fields where the use of ICT and the requirement of DL skills become more and more important. The benefits of incorporating ICT into foreign language instruction are undeniable. ICT can assist students in improving their language abilities (Khaloufi & Laabidi, 2017) and foster positive attitudes toward learning a language, which is one of the benefits of employing technology in foreign language instruction. There are many methods to incorporate ICT into the language teaching and learning process, and it has the potential to provide an engaging and productive learning environment

for students. Using ICT in FLL requires learners to have some technology-related competencies and learners' DL skills might play a role in their attitudes towards ICT use.

Several studies have been conducted on students' DL skills and attitudes towards ICT use by focusing on the relationship between them (Liaw & Huang, 2011; Nassoura, 2012; Rhema & Miliszewska, 2014; Abdullah et al., 2015; Jan, 2018). Liaw & Huang (2011) investigated university students' attitudes towards e-learning. The results showed that learners' computer-related experiences affected their self-efficacy and motivation towards e-learning. According to this study, it is possible to make an inference of the relationship between DL and attitudes towards technology use. In another study, Nassoura (2012) found a relationship between positive attitude and the use of mobile learning. Rhema & Miliszewska (2014) also investigated the attitudes of learners towards e-learning. According to the findings, if students had access to technology-related tools, their attitudes were more positive towards e-learning. In other words, owning technology-related tools seemed to affect students' attitudes towards the use of technology in education. Abdullah et al. (2015)'s study revealed similar results as Rhema & Miliszewska (2014)'s study emphasizing that ownership of technology-related tools resulted in positive attitudes towards the use of information technology. Jan (2018)'s study also supported the association between DL and learners' attitudes towards ICT use. The results of these studies are supporting the relationship between DL and attitudes towards ICT. However, as there are many different ways of using ICT, it is worth to further investigate this issue.

Apart from considering the relationship between DL and learners' attitudes towards ICT use, it is also significant to consider the different learning modes which have especially gained popularity after the Covid-19 outbreak. Arronsagaray et al. (2019)'s study compared three different learning modes in relation to DL and their attitudes towards ICT use. According to the findings, students learning English in distance learning mode perceived their DL better than those who learned English in face-to-face or BL mode. In terms of attitude, no matter in which mode learners were learning English, all of them had positive attitudes towards ICT use. However, there is still need for investigating different learning modes in terms of DL and attitudes towards ICT.

The present study's purpose is to investigate university students' DL skills and attitudes towards ICT use. Different from the aforementioned studies, the present study addresses students' DL skills and attitudes towards ICT within the BL mode. In addition to this, it is aimed to explore the relationship between students' DL skills and attitudes towards ICT use. Finally, it is aimed to see if students' DL skills and attitudes towards ICT use change in terms of gender. With the aforementioned aims, the following research questions are tried to be answered:

1. What is the level of university students' perceived DL skills?
2. Does gender affect their DL skills?
3. What are their attitudes towards the use of ICT in a BL environment for language learning?
4. Does gender affect their attitudes towards using ICT in language learning?
5. Is there a relationship between university students' DL skills and their attitude towards using ICT in language learning?

## 3. Methodology

### 3.1. Research Design

Built upon the postpositivist worldview, this study was designed as a quantitative study, because postpositivist researchers aim to determine effects, outcomes or relationships in a theory to shape their knowledge about the studied topic (Creswell, 2014). In this study, it is aimed to generalize from the sample studied to make inferences (Creswell, 2014).

### 3.2. Participants and Context

University students studying in the English preparatory program in a public university in Bursa, Turkey comprised the participants of the study. Adopting a convenience sampling, 116 students aged between 18 and 42, with an average of 19 took part in this study. While 53.4% of the participants were male (62 in total), 46.6% of them were female (54 in total). 19.8% of the students had A2 level of English, 61.2% of them had B1 level of English, and 7.8% and 11.2% of them had B1+ and B2 level of English respectively. Because of the fact that the study was conducted in the second quarter of the English preparatory program, the majority of the students had B1 level of English.

The university's English Preparatory Program was divided into four quarters. Each quarter composed of 8 weeks, 7 weeks of instruction and 1 week for exams and evaluation. Classes in A2, B1, B1+ and B2 (academic skills) were offered. They were placed into different levels of English at the beginning of the year after attending a placement test prepared by the Department of the Foreign Languages. A BL mode was offered which included face-to-face learning with online support. By using a "Moodle" learning management system, the face-to-face learning experience was supported. Students had 21 hours of face-to-face classes and asynchronous tasks to complete within a week depending on their own decision for completing them. Furthermore, students were provided with various extra materials online to further develop their own language learning. Also, teachers made use of various technology-related materials in their classes.

### 3.3. Instruments

To gather quantitative data, a Google forms survey was formed. The survey had three parts. Demographic information was gathered in the first part of the survey including participants' age, gender, level of English and department.

The second part of the survey comprised of "Digital Literacy Scale" by Bayrakci & Narmanlioğlu (2021). It had 29 self-report items with a five-point Likert scale. The participants had to choose from "1-strongly disagree" to "5-strongly agree". The scale was used without any changes and the Cronbach's alpha value of this scale was .91.

The third part of the survey comprised of "Attitude Scale for the Use of Media and ICT in Learning English (ASMICT)" by Güven (2015). It had 16 self-report items with six-point Likert scale. The participants had to choose from "1-strongly disagree" to "6-strongly agree". The scale was used without any changes and the Cronbach's alpha value of this scale was .91.

To begin with, a small-scale pilot study was conducted. In this pilot study, 20 students took part to ensure the reliability of the scales. Their answers were excluded from the main study. Cronbach's alpha values of DL Scale and the ASMICT Scale were .926, and .911 respectively. As both are above .70, the instruments can be regarded as reliable (Dörnyei, 2007): Also, both instruments were used in Turkish contexts before, which made them suitable for the present study.

### 3.4 Data Collection and Analysis

The researcher applied to both the School of Foreign Languages and the Ethics Committee of the university to get the necessary permission. Data collection was done in December 2022. The survey was conducted in Turkish and sent to the students via Google Forms. There was a consent form at the beginning of the survey. Students could move on to the actual survey after approving to participate voluntarily to the study. Completing the questionnaire lasts between 15-20 minutes.

SPSS was utilised to analyse the data gathered via the survey. First of all, the mean scores were calculated for Digital Literacy via descriptive statistics. For determining students' DL level, Bayrakci & Narmanlioğlu (2021)'s categorization was used. Table 1 shows the categorization of DL level. As the data was distributed normally, Independent Samples t-test was used for answering the second research question.

**Table 1.** DL Scores

| DL Score | Level |
|----------|-------|
| 1,62-3,07 | Low/Poor |
| 3,08-3,62 | Below Average/Weak |
| 3,63-4,17 | Average |
| 4,18-4,72 | Above Average/Good |
| 4,73-5,00 | High/Perfect |

Moreover, for answering the third research questions, the mean scores and frequency of ASMICT were calculated via descriptive statistics. As the data was distributed normally, Independent Samples t-test was used for answering the fourth research question

For answering the last research question, Pearson product-moment correlation coefficient statistics was used as the data from both scales were distributed normally. Herewith, the relation between DL and attitude was investigated.

## 4. Results

### 4.1. Students' perceived level of DL

With regard to the first research question, descriptive statistics were conducted to investigate university students' perceived level of DL. The overall mean scores are shown in Table 2.

**Table 2.** University students' perceived level of DL

| Level of DL | N | Min | Max | Mean | Std. Dev. |
|-------------|---|-----|-----|------|-----------|
| Item 1 | 116 | 1.00 | 5.00 | 4.24 | .69415 |
| Item 2 | 116 | 1.17 | 5.00 | 3.24 | 1.11324 |
| Item 3 | 116 | 1.33 | 5.00 | 4.03 | .77498 |
| Item 4 | 116 | 1.00 | 5.00 | 2.37 | 1.33898 |
| Item 5 | 116 | 1.00 | 5.00 | 4.32 | .84207 |
| Item 6 | 116 | 1.00 | 5.00 | 4.32 | 1.06722 |
| Total level of DL | 116 | 1.79 | 4.86 | 3.70 | .62799 |

The overall mean score was 3.70 which indicated that the university students in this study generally experienced an average level of perceived DL. According to the analysis, the university students experienced a good level of perceived DL in terms of "Ethics and Responsibility" (Item 1), "Privacy and Security" (Item 5) and "Social Dimension" (Item 6) with 4.24, 4.32 and 4.32 mean scores respectively. Furthermore, they experienced an average level of perceived DL in terms of "Daily use" (Item 3) with 4.03 mean score. Lower perceived level of DL was found with the other two factors. While university students experienced weak level of perceived DL in terms of "General Knowledge and Functional Skills" (Item 2) with 3.24 mean score, they experienced poor level of DL in terms of "Advanced Production" (Item 4) with 2.37 mean score.

## 4.2. Gender and students' perceived level of DL

To find out whether there was any significant difference in university students' perceived level of DL across gender; Independent Samples t-test was conducted to answer the second research question. Table 3 presents the results.

**Table 3.** Perceived level of DL across gender

| Level of DL | Gender | N | Mean | $p$ |
|---|---|---|---|---|
| Item 1 | M | 62 | 4.17 | .317 |
|  | F | 54 | 4.30 |  |
| Item 2 | M | 62 | 3.73 | .000 |
|  | F | 54 | 2.66 |  |
| Item 3 | M | 62 | 3.96 | .295 |
|  | F | 54 | 4.11 |  |
| Item 4 | M | 62 | 2.62 | .021 |
|  | F | 54 | 2.06 |  |
| Item 5 | M | 62 | 4.21 | .151 |
|  | F | 54 | 4.43 |  |
| Item 6 | M | 62 | 3.10 | .344 |
|  | F | 54 | 2.91 |  |
| Total level of DL | M | 62 | 3.79 | .092 |
|  | F | 54 | 3.59 |  |

*Note*. M = Male; F = Female

No significant differences were observed between the mean scores for both genders' overall perceived level of DL ($p > 0.05$) as presented in Table 3. Similar perceived level of DL was found between female

and male participants. However, significant difference was in terms of "General Knowledge and Functional Skills" (Item 2) ($p < 0.05$). While female students experienced low level of perceived DL in terms of "General Knowledge and Functional Skills", males experienced an average level. For "Advanced production" (Item 4), even though significant difference was found in the analysis, the mean scores for both gender showed low level of perceived DL in terms of "Advanced production" (Item 4).

## 4.3. Attitudes in Terms of Using ICT and Media Tools in Language Learning

For answering the third research question, the mean scores and percentages of each item of ASMICT was calculated to investigate attitudes of university students towards using ICT and media tools while learning English. The results are presented in Table 4.

**Table 4.** Mean scores and percentages of each item of ASMICT

| Item | SD | D | SLD | SLA | A | SA | Mean Score |
|------|------|------|------|------|------|------|------|
| S1 | % 6.0 | % 9.5 | %14.7 | % 23.3 | % 24.1 | % 22.4 | 4.17 |
| S2 | % 2.6 | % 6.9 | % 11.2 | % 19.0 | % 28.4 | % 31.9 | 4.59 |
| S3 | % 6.0 | % 6.9 | % 12.9 | % 25.0 | % 22.4 | % .26.7 | 4.31 |
| S4 | % 11.2 | % 9.5 | % 13.8 | % 19.8 | % 19.8 | % 25.9 | 4.05 |
| S5 | % 1.7 | % 4.3 | % 8.6 | % 17.2 | % 27.6 | % 40.5 | 4.86 |
| S6 | % 12.1 | % 6.9 | % 19.8 | % 25.0 | % 12.9 | % 23.3 | 3.89 |
| S7 | % 12.9 | % 9.5 | % 19.0 | % 19.0 | % 19.0 | % 20.7 | 3.83 |
| S8 | % 4.3 | % 6.0 | % 12.1 | % 19.0 | % 25.0 | % 33.6 | 4.55 |
| S9 | % 0.9 | % 2.6 | % 12.1 | % 25.0 | % 25.0 | % 34.5 | 4.74 |
| S10 | % 0.9 | % 10.3 | % 19.0 | % 17.2 | % 25.0 | % 27.6 | 4.37 |
| S11 | % 3.4 | % 12.1 | % 18.1 | % 25.0 | % 19.8 | % 21.6 | 4.10 |
| S12 | % 5.2 | % 3.4 | % 15.5 | % 31.0 | % 19.8 | % 25.0 | 4.31 |
| S13 | % 1.7 | % 2.6 | % 14.7 | % 21.6 | % 26.7 | % 32.8 | 4.67 |
| S14 | % 2.6 | % 14.7 | % 0.0 | % 25.0 | % 30.2 | % 27.6 | 4.62 |
| S15 | % 2.6 | % 5.2 | % 16.4 | % 20.7 | % 30.2 | % 25.0 | 4.45 |
| S16 | % 5.2 | % 11.2 | % 12.9 | % 28.4 | % 15.5 | % 26.7 | 4.18 |
| Total | - | - | - | - | - | - | 4.35 |

*Note.* S = Statement; % = Frequency; SD = Strongly Disagree; D = Disagree; SLD = Slightly Disagree; SLA = Slightly Agree; A = Agree; SA = Strongly Agree

All statements in the scale were positively worded and were all about different kind of ways for using ICT and media tools to develop English language skills. Therefore, an agreement of each statement indicated a positive attitude towards using ICT and media tools while learning English. Overall, the results showed that university students in general had a positive attitude (total scale mean score = 4.35). The majority of the participants had positive attitudes towards watching movies with English subtitles (S5) for learning English, however watching without subtitles (S3) and with Turkish subtitles were also favoured with a total percentage of %74.1 and %65.5 respectively. Furthermore, the participants had also positive attitudes towards using music for learning English. While the majority of the participants preferred to listen to English music with English subtitles (S8) with a total percentage of %77, listening to music without subtitles (S6) and with Turkish subtitles (S7) were also favoured. Furthermore, participants showed positive attitudes towards listening to English radio (S11) while learning English. Using games was another way of using ICT which gained positive attitudes of the participants. However, playing video games on the computer (S2 with %79.3) seemed to be preferred more than playing games on mobile phones (S10 with %69.8) for learning English. Furthermore, most of the participants had positive attitudes towards watching English news and documentaries (S9) as well as reading digital English newspapers and magazines (S14) for increasing their language skills. Websites supporting language learning (S1) and English education programs prepared and sold for use on the computer (S15) were other ways of using ICT and media tools for language learning, and the participants showed positive attitudes towards their usages. Furthermore, translation programs (S12) and digital dictionaries (14) were favoured by %75.8 and %80.2 of the participants respectively, which indicated that they had positive attitudes towards making use of these during their language learning process. Lastly, using e-mails for writing (S16) practice seemed to be positively affecting participants' language learning.

## 4.4. Gender and Attitude

To find out whether there was any significant difference in the attitudes of university students towards using ICT and media tools while learning English across gender; Independent Samples t-test was conducted to answer the fourth research question. Table 5 presents the results.

**Table 5.** ASMICT across gender

|  | Gender | N | Mean | $p$ |
|---|---|---|---|---|
|  | Male | 62 | 4.22 |  |
| Total ASMICT |  |  |  | .102 |
|  | Female | 54 | 4.51 |  |

As it is demonstrated in Table 5, no significant difference was observed across gender ($p > 0.05$). According to the results, both, female and male participants experienced similar positive attitudes.

## 4.5. Relationship between DL and Attitude

To investigate the relationship between students' perceived level of DL and their attitudes towards using ICT and media tools while learning English; Pearson product-moment correlation coefficient test was conducted to answer the fifth research question. Table 6 presents the results.

**Table 6.** Correlation between DL and ASMICT

|  |  | DL |
|---|---|---|
|  | Pearson $r$ | ,499[*] |
| ASMICT | $p$ | ,000 |
|  | N | 116 |

*. Correlation is significant at the 0.01 level (2-tailed)

A strong positive correlation between students' perceived level of DL and their attitudes in terms of using ICT and Media tools in language learning was identified [r(.499) = .000, p < 0.01] as shown in Table 6.

## 5. Discussion

First part of the findings was related to university students' perceived level of DL. According to the overall mean score, the participants of the study were found to experience an average level (mean score = 3.70) of perceived DL in general. This finding was similar to previous studies (Cabangacala et al., 2021; Nguyen & Habók, 2021) which identified average level of technology-related competencies in university students. However, considering the dimension of DL, some differences were observed. While university students experienced a good level of perceived DL in terms of "Ethics and Responsibility", "Privacy and Security" and "Social Dimension", they experienced an average level of perceived DL in terms of "Daily use". Furthermore, weak level of perceived DL in terms of "General Knowledge and Functional Skills" and even poor level of DL in terms of "Advanced Production" were identified. In her study, Koyuncuoğlu (2022) also investigated the different dimensions of DL. While the results of her study showed difference between very high and medium level of DL, the present study indicated also poor and week level of DL for university students. Especially the finding in terms of "General Knowledge and Functional Skills" dimension, a poor level of DL indicated that university students were not able to "perform simple routine digital operations at the most basic level" (Bayrakcı & Narmanlıoğlu, 2020). Considering the fact that the university students learned English in a BL environment, this dimension of DL seemed to be important as the students were expected to complete tasks in which they needed to perform such kind of simple digital operations. This finding highlights the fact that, if technology will be integrated into language learning, it is necessary to equip students with necessary DL. Otherwise, the success of integrating technology might not result as expected. Still, it is worth considering what type of DL it is expected from students while integrating technology into language classes. Considering BL environments or distance learning, it seems important to train students and help them increase their DL skills.

Concerning gender differences in DL, no significant difference (*p* = .092) was observed in general. This finding was in accordance with some studies (Hatlevik & Hatlevik, 2018; Koyuncuoğlu, 2022). However, in terms of "General Knowledge and Functional Skills" some differences were observed. While female students experienced low level of DL in terms of "General Knowledge and Functional Skill", males experienced an average level of DL. This finding was in accordance with Koyuncluoğlu (2022) which definitely highlights the fact that males seem to have more general knowledge about using technology. Overall, a big difference was not observed which indicated that both girls and boys should be considered as the same when talking about DL and both genders should be trained for using technology-related tools better.

Apart from DL, this study also aimed to identify university students' attitudes. In general, the university students had positive attitudes towards using ICT and media tools while learning English. The findings were in accordance with previous studies (Liu, 2009; Alduwairej, 2014; Kitchakarn, 2015; Tran et al., 2019; Kopinska, 2020) which also found that students had positive attitudes towards using ICT and media tools in the language classroom. This finding is especially important as attitude definitely increases

language learning. Considering the role technology has in today's world, it is inevitable to consider teaching without using technology. Furthermore, research on attitude is supporting the fact that learners of this generation want to have technology in their language classes. Children are born as digital natives and it is significant to provide them with the technology-related learning opportunities. As studies show generally positive attitudes towards using ICT and media tools in language learning, it is important to consider how to integrate them into language classes more. Moreover, this also highlights the importance of training teachers for using and integrating technology into classes.

Concerning gender differences and attitude, no significant difference ($p = .102$) was observed. This finding was not in accordance with previous research (Sabti & Chaichan, 2014; Ngo & Eichelberger, 2019; García-Martínez et al., 2021) which found that females had more positive attitudes towards using ICT and media tools than men. While previous studies indicated a significant difference, the present study highlights the importance that all learners, no matter which gender, have somehow positive attitudes towards using ICT and media tools in language learning as people today are used to using technology for the most basic things. Therefore, without considering gender, it is important to integrate technology into the language learning classroom as technology seems to be a part of students' lives today.

Finally, a strong positive correlation [$r(.499) = .000$, $p < 0.01$] between university students' perceived level of DL and their attitudes towards using ICT while learning English was found in the present study. This means that the better students become in terms of DL and using technology, the more positive attitudes towards using ICT and media tools in language learning will be experienced. This finding was in accordance with previous studies (Liaw & Huang, 2011; Nassoura, 2012; Rhema & Miliszewska, 2014; Abdullah et al., 2015; Jan, 2018) and highlights the importance of training university students to use technology effectively. When students have the necessary technology-related knowledge, it is expected that they will have more positive attitudes towards using ICT and media tools in language learning. Moreover, there is a possibility that more positive attitudes might result in more success. Furthermore, especially after the Covid-19 outbreak, the importance of technology and having some technology-related knowledge has gained more significance. New learning modes emerged like distance learning and BL. These new learning modes try to integrate technology more into the classes, which highlights the importance of students' DL and their attitudes towards using it. In the present study, students were exposed to technology integration in a BL environment. Despite the fact this mode of learning environment requires a lot tasks to complete by using technology-related tools, the results indicated an average level of DL in the participants. This highlights the question whether students had difficulty in completing technology-related task. If students are required to attend classes in BL or distance learning environment, it is important to train students for making the best out of the learning experience. Even though there are many studies conducted on DL and attitude, there is still need for finding ways to improve learners' DL levels so that they can use the new technology integrated learning environments at best.

## 6. Conclusion

The aim of the present study was to investigate EFL university students' perceived level of DL and their attitudes towards the integration of ICT as well as media tools while learning English. Overall, the results indicated that the participants had an average level of DL and positive attitudes towards using ICT while learning English. For both, girls and boys, there was no significant difference observed in terms of their perceived level of DL and their attitudes. Furthermore, a strong positive correlation between students' perceived level of DL and their attitudes was identified. In other words, the more students get knowledgeable about DL, the more positive attitudes they will have towards using ICT while learning English. When considering the BL mode in which these students were learning English, an average level of perceived DL skills might hinder them to make the best use of ICT while learning English. BL modes

require students to make use of ICT and media tools while learning English, and therefore, the need for increasing their DL skills is inevitable. Teachers need to be aware of students' DL skills while trying to integrate technology into language classes. It is important for teachers to know what students know about technology and whether they are really ready to use it while learning English. Therefore, teachers should definitely test their students' knowledge about DL skills and support them if necessary.

## 7.  Limitations and Suggestions for Further Research

It should be noted that there are some limitations about the present study. To begin with, only quantitative data was collected for investigating DL skills and attitudes towards using ICT while learning English. A deeper understanding of this issue is needed. Therefore, similar studies comprising both quantitative and qualitative data could provide a better understanding of the phenomenon. Furthermore, experimental studies comparing students' DL skills and attitudes towards using ICT while learning English might show the real effect of DL skills on students' attitudes towards using ICT. Also, studies with larger samples would enable the results to be generalized better to the Turkish EFL context. Lastly, studies identifying what kind of DL skills are especially needed for using ICT effectively while learning English would help both English language teachers interested in integrating technology into language classes and teachers interested in implementing BL and distance learning modes into language learning classes.

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