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Research Paper

Information Communication Technology (ICT) Skills of EFL Learners in Online Classes: The Case of English literature and Mathematical Science Students

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Abstract

Despite the rapid integration of technology in higher education, student readiness and beliefs regarding online learning tools remain inconsistent across disciplines. This study investigated university students' Information and Communication Technology (ICT) skills and their beliefs regarding the effectiveness of technology in online classrooms. Participants included 90 undergraduate students from three distinct groups: junior English literature majors, senior English literature majors, and computer science majors. Quantitative survey data were analyzed alongside qualitative responses. The findings revealed that while students generally maintain positive perceptions of their ICT skills and view themselves as technologically literate, differences in confidence and application emerged across the academic disciplines. These

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results imply that academic departments must implement targeted, discipline-specific digital literacy training. The study has specific implications for university administrators and educators and provides them with guidelines on the development of resilient digital curricula for both crisis-induced online learning and standard academic settings.

Keywords: Information Technology, learning, higher education, online classes

1. Introduction

From the first humans on Earth to the present day—us, the 21st-century generation—humanity has always been engaged in a continuous process of creation and improvement. It can be said that technology has been one of these great improvements. Information technology in a simple term is defined as the act of merging electronics, computations, and telecommunications which has opened up new ways for information collection, storing, processing, transmitting, and displaying technology (Lee, 2002).

In its essence Information Communication Technology is the way that a human being uses technology in life. Although there is no universal definition for ICT, Beckinsale and Ram (2006) define it as the technology use for supporting information gathering, processing, distribution and use. This ICT usage though looks simple, has an extremely complex process. To this end, paying attention to ICT and the effect that it can have on every aspect of human life is of great importance to the ones who are concerned. This effect can also be observed in the realm of education. This effect has appeared to be felt in every part of society by its common expanding request in the school environment. Among the concerned individuals is Oliver (2002) who argued that one of the goals of an educational institution is to make sure that the students have information literacy, the ability to identify and analyze the necessary information to meet their needs.

According to Weert and Tatnall (2005), the past and even new developments in information technology have a great impact on many aspects of society. Policymakers are concerned with issues related to economic development, intellectual property rights, privacy, and having and receiving information. As can be seen, the widespread technology use has step by step presented its influence and the realm of education was not an exception. Different kinds of electronic devices have paved the way for the necessity of acquiring new kinds of skills. The stakes were so high that The No Child Left Behind Act of 2001 stated that all students should be educated in technology

by the eighth grade (Arévalo & Orellana, 2026; Padron, 2012). In a short time, technological literacy became so important that every nation looked for a new type of education. It has been suggested that this is important for citizens to participate in research and to define the relationship between technological processes and human needs.

The existing relationship between the technological age and ICT on one side, and education on the other, is evolving rapidly as the world accelerates toward becoming fully electronic. With this in mind, ICT use in education turns to become a must for every country seeking improvement. Based on this, several previous studies have shown that the proper use of ICT can improve the quality of learning and connect learning to real-life situations (Khalili et al., 2024; Lowther et al., 2008; Weert & Tatnall, 2005). To this end, an investigation into university students' use of and skills in Information and Communication Technology (ICT) during their online classes is needed to bring these issues out of the shadows. The so-called weaknesses and strengths should be found and paid due attention in order to help students on their learning journey.

Despite the documented benefits of ICT in educational settings, a significant gap remains in empirical research comparing digital literacy and technological beliefs across disparate academic disciplines, particularly during sustained online instruction. While prior research has frequently treated higher education students as a homogenous group of digital natives, this approach overlooks how distinct academic cultures (specifically, humanities versus technical disciplines) shape students' actual ICT competencies and their cognitive beliefs about technology's efficacy. Comparing English literature majors (who rely on ICT primarily for text-based analysis and communication) with computer science majors (who engage with the technical architectures of these technologies) provides a unique vantage point to examine these differences. By employing a mixed-methods design that combines quantitative survey metrics with qualitative text-mining via WordStat, this study goes beyond self-reported confidence scores to capture the nuanced conceptualizations students hold regarding technology. Consequently, this study contributes to the field by providing a comparative, discipline-specific framework for ICT readiness and offers university administrators and curriculum designers actionable insights to develop tailored digital support systems rather than generic, one-size-fits-all technological training.

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2. Literature Review

2.1 The Efficacy and Impact of ICT in Educational Settings

A substantial body of research positions Information and Communication Technology (ICT) as a vital tool for enhancing teaching and learning. Proponents argue that ICT can improve the quality of learning by connecting theoretical concepts to real-life applications (Khalili et al., 2024; Lowther et al., 2008; Weert & Tatnall, 2005). However, the empirical evidence regarding the direct impact of ICT on academic performance remains nuanced. For instance, while Shapley et al. (2011) noted a positive trend in the direction of expected effects, they found no statistically significant impact of technology immersion on students' reading or mathematics performance. This discrepancy suggests that the mere presence of technology does not guarantee improved outcomes; rather, the effectiveness of ICT may depend on how it is integrated into the pedagogical framework.

2.2 Students' ICT Usage Patterns and Perceived Effectiveness

Beyond academic performance, research has increasingly focused on how students perceive and utilize technology. A recurring theme in the literature is the disconnect between students' positive attitudes toward ICT and their actual academic application of these tools. For example, Dang and Nhung (2014) found that while Vietnamese EFL university students held positive beliefs regarding the role of ICT in language learning and expressed a desire for more technology-enhanced instruction, their actual usage was predominantly geared toward private, non-academic purposes.

This distinction between attitude and application is critical. While students may view technology as a crucial means to improve their schoolwork (a sentiment echoed in the PISA (2012) results regarding European students) their actual skill sets and usage behaviors may not align with academic requirements. This gap highlights the necessity of investigating not just whether students like technology, but whether they possess the specific ICT skills required for formal academic success in digital environments.

2.3 Disciplinary and Institutional Variables in ICT Adoption

The impact of ICT is not uniform across different educational roles or academic disciplines. Previous studies have examined ICT from various perspectives, including its use by university lecturers (Tarik Kisla et al.,

2009), the difficulties faced by academic staff (Archibong & Effiom, 2009; Khalili, et al., 2025), and the relationship between technology use and success in specific subjects like physiology (Al-Hariri & Al-Hattami, 2017; Zohrabi & Khalili, 2024).

However, a significant limitation in current literature is the tendency to treat university students as a monolithic group. Most existing studies overlook how academic discipline (e.g., Humanities vs. Science) or academic seniority (e.g., Junior vs. Senior status) might influence digital literacy and technological beliefs. For instance, while a computer science student may interact with technology through technical architecture, an English literature student may interact with it through digital textual analysis. This study seeks to address this oversight by providing a comparative analysis of these distinct student populations.

2.4 The Present Study

While the aforementioned studies provide a foundation for understanding ICT, there remains a lack of comparative research that examines how different majors and year levels influence ICT competence and beliefs, particularly within the context of online learning. By investigating English language majors and computer science students across different stages of their degree, this study aims to provide a more complete understanding of student readiness. This approach moves beyond the broad generalizations of previous research to identify specific needs for targeted digital literacy interventions in both normal and crisis-driven (e.g., pandemic) educational contexts.

2.5 Theoretical Framework

To provide a clearer conceptual basis for the present study, the European Digital Competence Framework for Citizens (DigComp) was adopted as the study's theoretical framework. DigComp conceptualizes digital competence as a multidimensional construct that extends beyond general familiarity with technology and includes a set of knowledge, skills, and attitudes required for effective, critical, and responsible use of digital technologies in learning, work, and everyday life (Carretero et al., 2017). In this framework, digital competence is organized into five broad areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem solving.

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DigComp is particularly relevant to the present study because it offers a structured way to conceptualize university students' ICT skills across multiple domains rather than treating technology use as a single, undifferentiated ability. This is important because students may appear similarly confident in technology overall while differing in more specific areas such as communication, content creation, or problem solving. The framework is therefore useful for interpreting variation in ICT skills across disciplines and academic levels. It also aligns well with the dimensions examined in the present study, especially communication, content creation, safety, and problem solving, and supports a more systematic interpretation of students' self-reported competencies.

In addition, DigComp provides an appropriate basis for interpreting students' perceptions of technology efficiency for learning purposes. Although the third research question focuses on perceptions rather than competence alone, students' views of technology as useful for saving time, accessing information, and supporting academic tasks can be understood as reflecting the practical educational value of digital competence in context. Thus, DigComp serves as a suitable framework for linking the quantitative focus on ICT skills with the qualitative exploration of how students experience technology in learning.

Viewed through this framework, the present study examines whether students' perceived digital competence differs by academic level and field of study, and how they describe the role of technology in supporting learning. The use of DigComp, therefore, strengthens the conceptual grounding of the study and helps connect instrument dimensions, group comparisons, and interpretation of findings within a coherent theoretical structure.

Research Questions

Question (1). Are there any differences between English language major juniors and seniors in their ICT skills?

Question (2). Are there any differences between English language students with computer science students in their ICT skills?

Question (3). What are university students' perceptions of technology efficiency for learning purposes?

3. Method

3.1 Research Design

The primary purpose of this study was to discover the differences between English major juniors and seniors at the University of Tabriz in the Faculty of Persian Literature and Foreign Languages, Department of English Language and Literature, regarding their ICT skills and their beliefs in technology efficiency, as well as the differences between English major students and computer science students at the University of Tabriz in the Faculty of Mathematical Sciences.

The study employed a quantitative survey design, supplemented by open-ended qualitative items to elicit deeper participant insight. This approach of collecting and analyzing both quantitative and qualitative data within a single study process is intended to gain a more comprehensive understanding of the research issue (Creswell, 2004; Taherkhani & Moazami, 2026). Although this study is not a fully comprehensive mixed-methods inquiry, the integration of these supplementary open-ended questions is intended to play a complementary role, taking advantage of the strengths of both data types to allow for a more powerful analysis and contextualization of the quantitative results (Dobakhti, 2020; Sedghi et al., 2026; Wuntu et al., 2024). This design was chosen to better acquaint the researchers with the complexities of the issue under investigation and to ground the statistical findings in the students' own perspectives.

3.2 Participants

The participant pool for this study comprised undergraduate students enrolled at University of Tabriz, Iran, during the 2022–2023 academic year. A convenience sampling design was utilized to select participants from two faculties: the Faculty of Persian Literature and Foreign Languages (specifically the Department of English Language and Literature) and the Faculty of Mathematical Sciences (specifically the Department of Computer Science). Convenience sampling was considered appropriate for this study because the researchers had direct access to these intact student groups and sought to compare learners from two readily available disciplinary contexts within the same institutional setting.

The final sample consisted of 90 students (N=90), categorized into three distinct academic groups including: a) Senior English literature majors

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(n=24); b) Junior English literature majors (n=30); and c) Computer science majors (n=36, serving as the non-humanities comparative group).

Prior to data collection, formal administrative approval was obtained from the respective departmental heads at the university. Ethical standards were strictly observed. That is, all participants were presented with a digital informed consent form detailing the study's aims, the voluntary nature of participation, and their right to withdraw at any point without academic penalty. To ensure absolute anonymity and confidentiality, no identifying personal information (such as names or student identification numbers) was collected.

3.3 Instrumentation

Data were collected through a standardized questionnaire (see Appendix A) adapted from the digital skills framework developed by the AAL Association (2017). The questionnaire consisted of two sections. The first section was designed by the researchers to obtain basic demographic information, including age, gender, and university major. To protect participants' anonymity, no names or other identifying personal information were collected.

The second section included the main instrument measuring learners' ICT-related skills in online classes. This part was selected from the AAL Association (2017) questionnaire on digital skills. In line with the purpose of the present study, items 2 and 3 from the "Critical Questions" section were retained. From the "Digital Skills" section, the following five subscales were included: (1) information, (2) communication, (3) content creation, (4) safety, and (5) problem solving. The items were reviewed carefully to ensure their relevance to the context of online learning among EFL learners. Minor adaptations were made only to improve clarity and contextual appropriateness for the participants. However, the original content and structure of the instrument were preserved as much as possible. Because some participants were not English majors, the questionnaire was translated into Persian to ensure comprehensibility.

To enhance the quality of the translated version, a translation and adaptation process was followed. First, the questionnaire was translated from English into Persian. Then, the translated version was reviewed for linguistic clarity and conceptual equivalence with the original items. Any ambiguous wording was revised before final administration. This process helped ensure that the translated items were understandable for students from different

academic majors while maintaining the intended meaning of the original instrument.

Evidence of validity was established through expert review. Three specialists in the field examined the questionnaire in terms of content relevance, clarity, and appropriateness for the objectives of the study. Based on their feedback, minor revisions were made to improve wording and clarity. The final version was therefore considered to have acceptable content validity for use in this study. In addition, the questionnaire had previously been validated in related research (Dobakhti, 2020), which further supported its suitability for the present investigation. Construct validity of the questionnaire was further examined through confirmatory factor analysis (CFA) to determine whether the items adequately reflected the underlying dimensions of ICT skills. The results indicated an acceptable model fit, with the Comparative Fit Index (CFI) used as a key validity indicator ($CFI = .91$), supporting the construct validity of the instrument.

Regarding reliability, the internal consistency of the questionnaire was examined prior to the main analysis. Cronbach's alpha coefficients were calculated for the overall scale and its subscales to determine the consistency of the items. The results indicated acceptable reliability for the instrument. More specifically, the overall Cronbach's alpha for the questionnaire was .91. The subscale alpha coefficients involved: (1) information (.87), (2) communication (.82), (3) content creation (.88), (4) safety (.83), and (5) problem solving (.86).

As the study employed a mixed-methods design, two open-ended questions were added at the end of the questionnaire to gather qualitative data and allow participants to elaborate on their experiences with ICT use in online classes. This qualitative component provided complementary insights beyond the fixed-response items.

Ethical considerations were also observed throughout the data collection process. Participants were informed about the purpose of the study and were assured that their responses would be used only for research purposes. Participation was voluntary, and the respondents could decline or withdraw at any stage without penalty. Informed consent was obtained before questionnaire administration, and anonymity and confidentiality were maintained throughout the study.

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3.4 Data analysis

Quantitative data were analyzed using IBM SPSS Statistics (Version 26). First, the questionnaire responses were screened for missing data and coded at the student level (Yes = 1, No = 0). For each participant, an overall ICT score and subscale scores (Information, Communication, Content Creation, Safety, and Problem Solving) were computed by summing the relevant dichotomous items. Descriptive statistics (frequencies, percentages, means, and standard deviations) were then calculated for the overall scale and each subscale. To address Research Questions 1 and 2, independent-samples *t*-tests were conducted to compare (a) English major juniors and seniors and (b) English language students and computer science students on the overall ICT score and on each subscale score. Prior to running the *t*-tests, normality (Shapiro–Wilk tests) was checked. Along with *p* values, effect sizes (Cohen's *d*) were reported to estimate the magnitude of group differences. All statistical tests were interpreted at the .05 significance level.

Qualitative data from the two open-ended items were analyzed using thematic analysis following Braun and Clarke's (2006) framework. Responses were first compiled and read repeatedly to achieve familiarization with the dataset. Because some participants were non-English majors, their written responses were translated into English prior to analysis to allow a unified coding process. As an initial exploratory step, WordStat 7.0.11 was used to identify frequently occurring words and phrases; however, theme generation was based on an interpretive coding process rather than frequency counts alone. The qualitative analysis proceeded through six phases: (1) familiarization with the data, (2) generating initial codes, (3) searching for potential themes by clustering related codes, (4) reviewing themes against the dataset, (5) defining and naming themes, and (6) producing the report with representative quotations. The themes derived from the two open-ended items were used to answer Research Question 3 and to complement and contextualize the quantitative findings.

4. Results

4.1 Exploring Research Question 1

Are there any differences between English language major juniors and seniors in their ICT skills?

Prior to the main analysis, the normality of the overall ICT score and subscale scores was examined using the Shapiro–Wilk test. The results

indicated that the distributions of the overall score and the main subscale scores were normal in both groups ($p > .05$), thus supporting the use of independent-samples t-tests. Table 1 shows the related descriptive statistics and t-test results:

Table 1

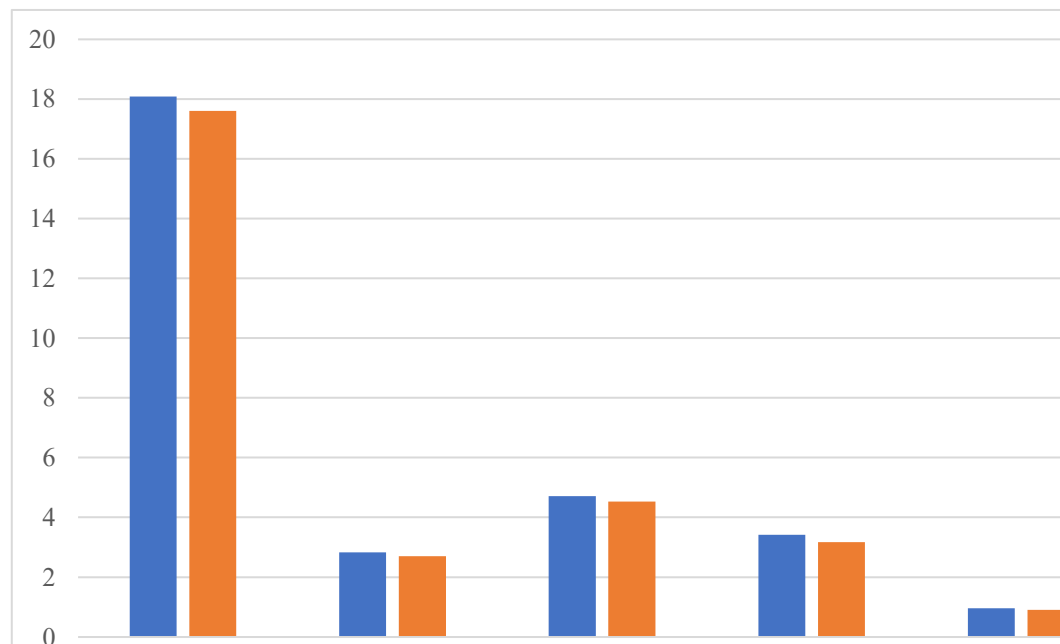
Descriptive Statistics and Independent-Samples t-test Results for ICT Scores by English Major Status

Variable	Group	N	M	SD	t	df	p	Cohen's d
Overall ICT score	Seniors	24	18.08	0.97	1.62	52	.111	0.44
	Juniors	30	17.60	1.15				
Information	Seniors	24	2.83	0.38	1.14	52	.259	0.31
	Juniors	30	2.70	0.47				
Communication	Seniors	24	4.71	0.55	1.28	52	.206	0.35
	Juniors	30	4.53	0.47				
Content Creation	Seniors	24	3.42	0.65	1.49	52	.142	0.41
	Juniors	30	3.17	0.60				
Safety	Seniors	24	0.96	0.20	0.88	52	.384	0.24
	Juniors	30	0.90	0.31				
Problem Solving	Seniors	24	3.54	0.59	1.36	52	.180	0.37
	Juniors	30	3.33	0.54				

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As presented in Table 1, the results of the t-tests revealed no statistically significant differences between senior and junior students in their overall ICT scores, $t(52)=1.62$, $p=.111$, $d=0.44$. Furthermore, analysis of the individual sub-scales showed that seniors and juniors performed similarly in Information ($p=.259$), Communication ($p=.206$), Content Creation ($p=.142$), Safety ($p=.384$), and Problem Solving ($p=.180$). Although senior students consistently recorded slightly higher mean scores, the differences were not significant and the effect sizes remained small to moderate. Consequently, the first null hypothesis (stating that there is no difference between English major juniors and seniors regarding their ICT skills) was supported. Figure 1 shows these results:

Figure 1
Seniors and Junior English Majors Students' ICT Skills



4.2 Exploring Research Question 2

Are there any differences between English language students with computer science students in their ICT skills?

Before conducting the main analysis, the normality of the overall ICT score and the subscale scores was examined using the Shapiro-Wilk test. Based on the results, the distributions of the overall score and the main subscale scores were normal in both groups ($p > .05$) and supported the use of independent-samples t-tests. Table 2 provides the relevant descriptive statistics and t-test results:

Table 2

Descriptive Statistics and Independent-Samples t-Test Results for ICT Skills by Group

Variable	Group	N	M	SD	t	df	p	Cohen's d
Overall ICT score	English students	54	17.81	1.08	-2.43	88	.017	0.52
	Computer science students	36	18.36	1.03				
Information	English students	54	2.74	0.45	-1.21	88	.229	0.26
	Computer science students	36	2.86	0.35				
Communication	English students	54	4.61	0.52	-2.08	88	.040	0.44
	Computer science students	36	4.83	0.47				
Content Creation	English students	54	3.28	0.62	-2.31	88	.023	0.49
	Computer science students	36	3.58	0.58				
Safety	English students	54	0.93	0.26	-1.36	88	.177	0.29
	Computer science students	36	0.97	0.17				
Problem Solving	English students	54	3.41	0.57	-2.67	88	.009	0.57

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Variable	Group	N	M	SD	t	df	p	Cohen's d
	Computer science students	36	3.72	0.51				

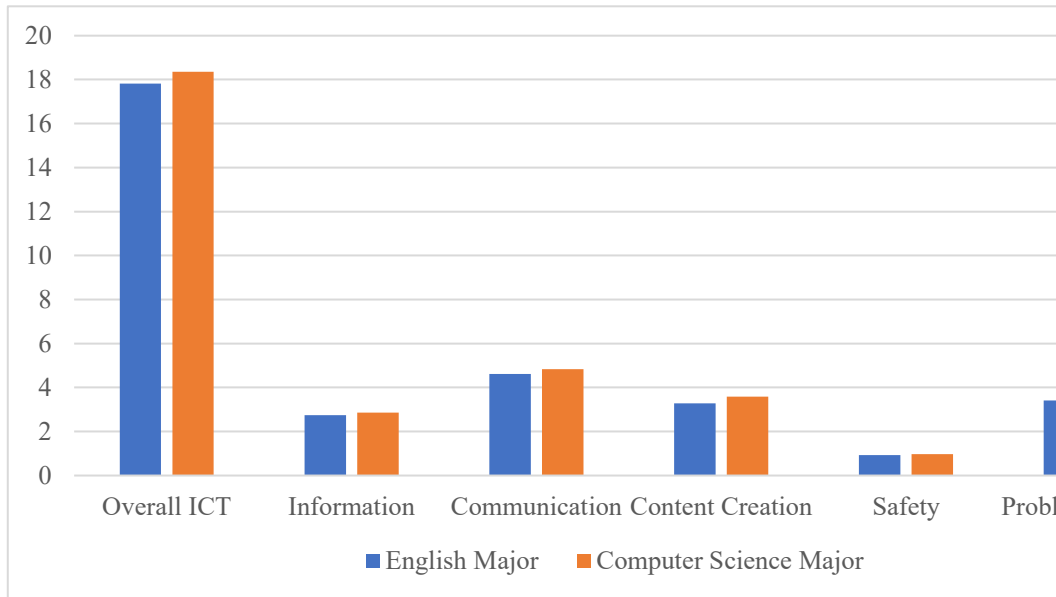
As presented in Table 2, computer science students ($M = 18.36$, $SD = 1.03$) obtained a significantly higher mean score on the overall ICT scale than English students ($M = 17.81$, $SD = 1.08$), $t(88) = -2.43$, $p = .017$, $d = 0.52$. This finding suggests that academic major was associated with differences in overall ICT skills.

With regard to the subscales, no significant difference was observed between the two groups in Information, $t(88) = -1.21$, $p = .229$, or Safety, $t(88) = -1.36$, $p = .177$. However, computer science students scored significantly higher than English students in Communication, $t(88) = -2.08$, $p = .040$, $d = 0.44$, Content Creation, $t(88) = -2.31$, $p = .023$, $d = 0.49$, and Problem Solving, $t(88) = -2.67$, $p = .009$, $d = 0.57$. These results indicate that although both groups demonstrated relatively high ICT competence, computer science students showed stronger performance in several practical and applied dimensions of ICT skills.

Therefore, the null hypothesis stating that there are no differences between English language students and computer science students in their ICT skills was rejected.

Figure 2

English Major and Computer Science Major Students' ICT Skills



4.3 Exploring Research Question 3

What are university students' perceptions of technology efficiency for learning purposes?

Thematic analysis of the responses to the two open-ended questionnaire items produced four recurring themes. Because participants often referred to more than one idea in a single response, some responses were assigned multiple codes. Therefore, the frequencies reported for the themes reflect the number of participants who mentioned that idea, not mutually exclusive categories. Table 3 shows the results of thematic analysis:

Table 3

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Codes and Themes in the Students' Responses

Codes	Theme
effective learning, better understanding, helpful for lessons, visual support, useful for study, important in learning, improves learning process	Technology as a facilitator of efficient learning
saves time, makes work easier, faster performance, convenience, reduces effort, quick completion of tasks, easier communication with materials	Technology as a means of saving time and increasing ease
access to information, availability of resources, internet sources, access to teachers, online materials, wider learning opportunities, multiple references	Technology as a means of accessing information and learning resources
searching for information, doing assignments, academic problem solving, research support, independent learning, finding course content, completing course tasks	ICT skills as practical support for searching and course-related tasks

As shown in Table 3, the first theme was *Technology as a Facilitator of Efficient Learning*. This theme was reported by 36 participants. Students commonly described technology as an important tool that improved understanding, supported lesson delivery, and made learning more effective. Many responses suggested that technology was not simply convenient, but was directly connected to better learning outcomes. In this regard, one participant stated that “I think technology is very useful for learning because it helps me understand lessons better. When materials are shown visually or explained through digital tools, learning becomes clearer for me.” Likewise, another participant noted that “In my experience, learning is more effective when technology is used. It helps me follow the lesson more easily and makes difficult parts easier to understand.” These responses support the quantitative findings by showing that students' positive perceptions of ICT were linked to its perceived educational value rather than merely to their general familiarity with digital tools.

Moreover, the second theme was *Technology as a Means of Saving Time and Increasing Ease*. A total of 31 participants referred to technology as something that saves time and makes academic work easier. Students emphasized speed, convenience, and the reduction of effort in completing learning tasks. This theme suggests that students value technology not only for learning itself, but also for making the learning process more manageable. Regarding this theme, one student pointed out that “I can do many tasks faster with technology. It saves my time and helps me reach what I need without spending too much effort.” Similarly, another student stated that “For me, technology makes studying easier because I can find what I want quickly and complete my work in a shorter time.” This theme adds depth to the quantitative results by showing why students may report favorable ICT use: technology is experienced as efficient, practical, and time-saving in everyday academic life.

Furthermore, the third theme was *Technology as a Means of Accessing Information and Learning Resources*. This was the most prominent theme, mentioned by 43 participants. A large number of students highlighted the role of technology in giving them access to information, learning materials, teachers, and different educational resources. Responses showed that students strongly associated digital technology with availability, reach, and flexibility in learning. In this regard, one student noted that “Technology helps me access a lot of information very easily. I can use different sources and find the materials I need for my lessons.” Likewise, another student pointed out that: “I believe technology is important because it gives me access to resources, websites, and even teachers when I need help with learning.” This theme is highly consistent with the quantitative findings, especially in relation to the information-related aspects of ICT competence. It shows that students see technology as valuable because it expands their access to academic content and support.

Finally, the fourth theme was *ICT Skills as Practical Support for Searching and Course-Related Tasks*. Twenty-eight participants explicitly referred to the role of ICT skills in helping them search for information, do assignments, solve academic problems, and work more independently. In these responses, technology was not viewed only as a general resource, but as something useful because students knew how to use it for concrete educational purposes. Regarding this theme, one student pointed out that: “My ICT skills help me search for information for assignments and research. When I know how to use digital tools well, I can do my academic work more independently.” Similarly, another student stated that: “I use technology to find course content, solve study problems, and complete tasks more easily.

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Knowing how to search properly, really helps my learning.” This theme complements the quantitative findings by showing that ICT competence is meaningful to students because it supports real academic practices such as searching, locating resources, and completing coursework effectively.

5. Discussion

According to Costley (2014), the everyday use of technology in people’s lives has made technology increasingly central to students’ learning experiences. Similarly, the positive role of ICT in education has been emphasized by Azmi (2017) and Khan et al. (2011), who argue that technology can support learning effectively when it is used purposefully rather than incidentally. The findings of the present study generally align with this broader view. Overall, the students reported relatively high levels of ICT skills, and the qualitative findings showed that they perceived technology as useful for learning because it facilitated efficient learning, saved time, expanded access to information and resources, and supported searching and course-related tasks. At the same time, the findings require careful interpretation in light of the theoretical orientation of the study, the self-reported nature of the data, and the contextual limits of the sample.

From a theoretical perspective, the study approached ICT as a functional academic resource rather than merely a technical skill set. In other words, ICT was understood in relation to what students are able to do with technology for learning purposes, such as accessing information, communicating, solving problems, and completing tasks. Viewed in this way, the findings suggest that students’ perceptions of ICT are closely connected to the academic usefulness of technology in their daily university experiences. This interpretation is strongly supported by the qualitative data, in which students repeatedly described technology in terms of learning efficiency, convenience, speed, access, and practical support. Thus, the findings do not simply indicate that students are familiar with technology; rather, they suggest that students value ICT because of its perceived contribution to meaningful academic activity.

One of the main quantitative findings was that no statistically significant difference was found between junior and senior English-major students in their ICT skills. This result does not support the assumption that higher academic level necessarily leads to stronger perceived ICT competence. Some previous studies have suggested that younger generations adopt ICT more easily than older ones (Kumar et al., 2008; Nilsson, 2005; Ongori & Migiro, 2011; Zhang, 2019; Zohrabi & Khalili, 2023), yet the

present study did not compare different generations; instead, it compared two groups of undergraduates who were likely exposed to relatively similar technological demands in the same institutional context. A reasonable interpretation, therefore, is that both junior and senior students had already developed comparable levels of functional ICT familiarity through everyday academic and personal use. In this sense, the lack of a significant difference may reflect the normalization of basic digital practices among university students rather than the absence of technological development across years of study.

This finding is consistent with Kaminski et al. (2009), who likewise found no clear distinction in ICT abilities between newer and older undergraduate students. However, this finding contrasts with that of Olatokun (2009), who proposed that higher levels of education are associated with greater ICT proficiency, and with the findings of Nguyen and Habók (2022) and Oguguo et al. (2020), who also reported variations in digital competence according to educational level. This contrast is important and should be addressed directly. One possible explanation is that the present study measured self-reported ICT skills related to practical educational use, whereas other studies may have captured broader or more advanced forms of digital competence. It is, therefore, possible that differences by university level become more visible when the focus shifts from general perceived ability to more demanding, performance-based, or academically specialized forms of digital literacy. Accordingly, the current findings should not be interpreted as evidence that academic progression has no relationship with ICT development; rather, they suggest that, within this sample and with this instrument, year of study was not a strong differentiating factor.

The comparison between English-major students and computer science students, however, revealed a different pattern. Based on the revised quantitative analysis, computer science students scored significantly higher on the overall ICT measure and on several subscales. This suggests that field of study may be a more meaningful factor than university level in shaping students' ICT skills. A deeper interpretation is that students in computer-related disciplines are likely to engage more frequently in activities requiring digital communication, content creation, and problem solving, and repeated engagement with such practices may strengthen their perceived competence. At the same time, both groups generally reported high levels of ICT skill, which indicates that digital technology has become a common part of university learning across majors, even if the depth and complexity of use vary by discipline.

This interpretation can be compared with Hossain and Sormunen (2019), who found that students possessed satisfactory computer and internet skills and felt confident in basic digital tasks, while rating themselves only average in more advanced areas. That distinction is especially useful for interpreting the present results because it highlights the possible discrepancy between self-reported ICT skills and actual competence. In the current study, the students largely reported that they possessed ICT skills, but this should not be taken to mean that all participants had equally strong or fully developed digital competence. Self-report measures capture students' confidence and perceptions, not necessarily their actual performance. Some students may feel competent in routine tasks such as searching for information, accessing course materials, or using online platforms, but may still have difficulty with higher-order digital practices such as evaluating online sources critically, producing sophisticated digital content, or solving unfamiliar technical problems. Therefore, the present findings are better interpreted as evidence of perceived ICT readiness than as direct proof of actual competence. This distinction is theoretically and pedagogically important because confidence in using technology may support engagement, but it does not automatically guarantee advanced digital literacy.

The qualitative findings explain why students evaluated technology positively and also provide a stronger interpretive foundation for the quantitative results. The four themes (i.e. efficient learning, time management and ease, access to information and resources, and practical support for searching and course-related tasks) show that students' beliefs about technology were grounded in concrete educational benefits. The first theme, efficient learning, indicates that students saw technology as a means of improving understanding and supporting the learning process. This finding is in line with studies that have linked technology-based learning with positive perceived outcomes and user satisfaction (Abrantes et al., 2007; Liaw, 2008; Saadé et al., 2007; So & Brush, 2008; Sun et al., 2008; Webb Boyd, 2008). It also corresponds with Golonka et al. (2014), who argued that innovative technologies can enhance educational outcomes. In the present study, this theme suggests that students do not merely tolerate technology in education; rather, they perceive it as an active contributor to learning effectiveness.

The second theme, time management and ease, further clarifies students' positive orientation toward technology. Many participants explained that technology helped them save time, complete tasks more quickly, and reduce effort in academic work. This partly aligns with Amir et al. (2021), whose findings suggested that many students believed distance learning gave them more time to study. At the same time, Amir et al. (2021)

also reported difficulties related to time management and concentration in extended online learning. This contrast is useful because it shows that the role of technology in time management is not universally positive or negative; rather, it depends on how technology is used and under what learning conditions. In the present study, students emphasized the efficiency and convenience of technology, which may reflect the practical academic uses they were most familiar with, rather than the broader challenges of prolonged online learning environments.

The third theme, access to information and resources, was one of the strongest themes in the dataset. Students repeatedly emphasized that technology enabled them to access information easily, consult different resources, and move beyond the limits of their physical environment. This finding is consistent with Ayu (2020), who similarly found that technology facilitates convenient access to information. In theoretical terms, this theme suggests that the educational value of ICT lies not only in technical operation, but also in the expansion of academic opportunity. Technology becomes meaningful to students because it increases access to knowledge, content, and support. This point also explains the generally positive quantitative results: students may report confidence in ICT partly because they repeatedly experience its usefulness in obtaining academic materials and information.

The fourth theme, faster and easier performance, complements the previous themes and strengthens the overall interpretation. Students frequently described technology as making learning tasks easier and faster through the use of digital tools, programs, and websites. This finding is consistent with Andujar et al. (2020), Dobakhti et al. (2022), and Salloum et al. (2019), who all emphasized the convenience and ease associated with technology-supported learning. It is also in agreement with Hashim (2018), who suggested that new technologies can accelerate the learning process. In the present study, this theme indicates that students' positive perceptions of ICT were grounded in repeated practical experiences of convenience, speed, and support. Thus, the qualitative results not only support the quantitative findings but also deepen them by showing why students see technology as educationally effective.

Taken together, the quantitative and qualitative findings suggest that students' ICT perceptions are shaped more by meaningful opportunities for academic use than by university level alone. This provides an important theoretical implication for the study. If ICT is viewed as a functional educational resource, then its development may depend less on simple

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exposure to technology and more on the extent to which students engage with it in purposeful, discipline-related, and academically relevant ways. This may explain why no significant difference was found between junior and senior English-major students, while clearer differences emerged between English-major and computer science students. The disciplinary context appears to matter because it structures the kinds of digital practices students regularly perform.

At the same time, caution is necessary to avoid overgeneralization. The sample was drawn from a single university, and convenience sampling was used. As a result, the findings may reflect the particular institutional context, students' educational experiences, and local patterns of technology access and use. They should not be assumed to represent all university students or all higher education settings. In addition, because the study relied mainly on self-reported data, the findings reflect students' perceptions of their ICT skills rather than objectively demonstrated competence. The qualitative data, although valuable for interpretation, were also based on optional open-ended responses and should, therefore, be understood as contextualized accounts rather than universally transferable patterns.

Therefore, the study suggests that university students generally perceive technology as beneficial for learning and view themselves as possessing ICT skills that support their academic work. However, the results also indicate that such perceptions should be interpreted carefully, particularly in relation to the possible gap between self-reported skill and actual competence. Moreover, the findings imply that disciplinary context may play a more important role than university level in shaping ICT development. Within the limits of the present study, it can be concluded that students consider technology as efficient for learning mainly because it helps them learn more effectively, manage time, access information and resources, and carry out academic tasks more easily.

6. Conclusions, Applications, Future Works and Limitations

The present study examined university students' perceived ICT skills and their views of technology in learning within the context of the University of Tabriz. Overall, the findings showed that students reported relatively high levels of ICT skills and generally viewed technology as beneficial for academic purposes. More specifically, no statistically significant difference was found between junior and senior English-major students, while differences were found between English-major and computer science students on the overall ICT measure and several sub-dimensions. In addition,

the qualitative findings showed that students associated technology with more efficient learning, time savings, easier access to information and resources, and practical support for information searching and course-related tasks. Taken together, these findings suggest that ICT use is already embedded in students' academic lives, but that the nature and strength of ICT competence may be shaped more by disciplinary context than by university level alone.

These findings have several implications for the local context of the University of Tabriz. First, because junior and senior English-major students did not differ significantly in their perceived ICT skills, it may not be sufficient to assume that students develop stronger ICT abilities simply through academic progression. This suggests that ICT-related support may need to be planned systematically across levels of study rather than left to develop incidentally over time. Second, because computer science students reported stronger ICT skills than English-major students, the findings indicate that disciplinary exposure and the kinds of tasks students perform may play an important role in shaping ICT development. For this reason, curriculum designers and instructors at the University of Tabriz may benefit from embedding more purposeful and discipline-relevant uses of technology in courses, especially in non-technical fields where students may have fewer opportunities to practice certain forms of digital communication, content creation, or problem solving. Third, the qualitative findings showed that students value technology mainly for concrete academic reasons such as improving efficiency, saving time, facilitating access to resources, and supporting course-related tasks. This suggests that teachers may be more successful in integrating technology when they use it in ways that clearly support immediate learning needs rather than adopting technology for its own sake.

Some implications may also be cautiously extended beyond the local context, although overgeneralization should be avoided. The study suggests that in higher education settings, students' positive perceptions of ICT are closely related to the practical academic usefulness of technology. It also indicates that differences in ICT skills may be more strongly associated with disciplinary context than with level of study. However, since the sample was drawn from one university through convenience sampling, these implications should be treated as tentative and context-sensitive rather than universal.

The study also points to an important methodological implication. Since the findings are based largely on self-reported questionnaire data, they reflect students' perceived ICT skills rather than their actual demonstrated

competence. As noted by Aesaert et al. (2017), there may be a gap between students' perceived digital skills and their actual abilities. Gross and Latham (2012) likewise highlighted possible discrepancies between self-rated skills and real competence. Therefore, although the present findings are useful for understanding students' confidence and perceptions, they should not be interpreted as a direct measure of actual ICT performance.

Several directions for future research emerge from these findings. First, future studies should use performance-based assessments, such as authentic digital tasks, in order to examine students' actual ICT abilities alongside their self-reported perceptions. This would make it possible to compare perceived and demonstrated competence more directly. Second, longitudinal research could investigate whether and how students' ICT skills develop over time, particularly across different years of university study. Third, comparative research across universities, disciplines, and national contexts would help determine whether the patterns found in the present study are context-specific or more widely observable. Finally, future research may examine additional variables that were not addressed here, such as gender or other learner-related and contextual factors that may influence ICT use and development.

Consequently, the study suggests that students at the University of Tabriz generally perceive technology as beneficial and report having ICT skills that support their academic work. At the same time, the findings indicate that disciplinary context appears to matter more than university level, and they also underline the need for caution when interpreting self-reported ICT proficiency. Within these limits, the study contributes to a clearer understanding of how students perceive technology in learning and how universities may support more purposeful and context-sensitive ICT integration.

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References

- Abrantes, J. L., Seabra, C., & Lages, L. F. (2007). Pedagogical affect, student interest, and learning performance. *Journal of Business Research*, 60(9), 960–964. <https://doi.org/10.1016/j.jbusres.2006.10.026>

- Aesaert, K., Voogt, J., Kuiper, E., & van Braak, J. (2017). Accuracy and bias of ICT self-efficacy: An empirical study into students' over-and underestimation of their ICT competences. *Computers in Human Behavior*, 75, 92-102. <https://doi.org/10.1016/j.chb.2017.05.010>.
- Al-Hariri, M. T., & Al-Hattami, A. A. (2017). Impact of students' use of technology on their learning achievements in physiology courses at the University of Dammam. *Journal of Taibah University Medical Sciences*, 12(1), 82-85.
- Amir, L. R., Tanti, I., Maharani, D. A., Wimardhani, Y. S., Julia, V., Sulijaya, B., & Puspitawati, R. (2020). Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia. *BMC Medical Education*, 20(1), 1-8. <https://doi.org/10.1186/s12909-020-02312-0>
- Andujar, A., Salaberri-Ramiro, M. S., & Martínez, M. S. C. (2020). Integrating flipped foreign language learning through mobile devices: Technology acceptance and flipped learning experience. *Sustainability*, 12(3), 1110. <https://doi.org/10.3390/su12031110>
- Archibong, I. A., & Effiom, D. O. (2009). ICT in university education: Usage and challenges among academic staff. *African Research Review*, 3(2). <https://doi.org/10.4314/afrev.v3i2.43639>
- Arévalo, M. A., & Orellana, S. X. (2026). The impact of gamification on engagement in an EFL classroom: A case study at Universidad De Cuenca, Ecuador. *Teaching English Language*, 20(1), 37-71. <https://doi.org/10.22132/tel.2025.499102.1766>
- Ayu, M. (2020). Online learning: Leading e-learning at higher education. *The Journal of English Literacy Education: The Teaching and Learning of English as a Foreign Language*, 7(1), 47-54. <https://doi.org/10.36706/jele.v7i1.11515>
- Azmi, N. (2017). The benefits of using ICT in the EFL classroom: From perceived utility to potential challenges. *Journal of Educational and Social Research*, 7(1), 111-118. <https://doi.org/10.5901/jesr.2017.v7n1p111>

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Information Communication Technology ...

- Beckinsale, M., & Ram, M. (2006). Delivering ICT to ethnic minority businesses: An action-research approach. *Environment and Planning C: Government and Policy*, 24(6), 847-867. <https://doi.org/10.1068/c0559>
- Boyd, P. W. (2008). Analyzing students' perceptions of their learning in online and hybrid first-year composition courses. *Computers and Composition*, 25(2), 224-243. <https://doi.org/10.1016/j.compcom.2008.01.002>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Carretero, S., Vuorikari, R., & Punie, Y. (2017). *DigComp 2.1: The digital competence framework for citizens with eight proficiency levels and examples of use*. Publications Office of the European Union. <https://doi.org/10.2760/38842>
- Costley, K. C. (2014). *The positive effects of technology on teaching and student learning*. Arkansas Tech University. <https://api.semanticscholar.org/CorpusID:147500491>
- Creswell, J. W., Fetters, M. D., & Ivankova, N. V. (2004). Designing a mixed methods study in primary care. *The Annals of Family Medicine*, 2(1), 7-12. <http://dx.doi.org/10.1370/afm.104>
- Dang, H. T., & Nhung, H. T. N. (2014). An exploratory study of ICT use in English language learning among EFL university students. *Teaching English with Technology*, 14(4), 32-46.
- Dobakhti, L. (2020). The process of enhancing validity, reliability, and ethics in research. *Iranian Journal of Applied Language Studies*, 12(2), 59-88. <https://doi.org/10.22111/IJALS.2020.5978>
- Dobakhti, L., Zohrabi, M. & Masoudi, S. (2022). Scrutinizing the affective predictors of teacher immunity in foreign language classrooms. *Teaching English Language*, 16(1), 65-89. <https://doi.org/10.22132/TEL.2022.148550>
- Dobakhti, L., Zohrabi, M. & Masoudi, S. (2023). Developing productive teacher immunity by providing tailor-made teacher education: A constructive endeavor. *Issues in Language Teaching*, 11(2), 187-217. <https://doi.org/10.22054/ilt.2022.68537.710>

- Golonka, E. M., Bowles, A. R., Frank, V. M., Richardson, D. L., & Freynik, S. (2014). Technologies for foreign language learning: A review of technology types and their effectiveness. *Computer Assisted Language Learning*, 27(1), 70-105. <https://doi.org/10.1080/09588221.2012.700315>
- Golzar, J., Tajik, O., & Noor, Sh. (2022). Convenience sampling. *International Journal of Education & Language Studies*, 1 (2), 72-77. <https://doi.org/10.22034/ijels.2022.162981>
- Gross, M., & Latham, D. (2012). What's skill got to do with it? Information literacy skills and self-views of ability among first-year college students. *Journal of the American Society for Information Science and Technology*, 63(3), 574-583. <https://doi.org/10.1002/asi.21681>
- Hashim, H. (2018). Application of technology in the digital era education. *International Journal of Research in Counseling and Education*, 2(1), 1-5. <https://doi.org/10.24036/002za0002>
- Hossain, M. A., & Sormunen, E. (2019). ICT skills of library and information science students in Bangladesh. *International Information & Library Review*, 51(4), 285-299. <https://doi.org/10.1080/10572317.2018.1559661>
- Kaminski, Karen & Switzer, Jamie & Gloeckner, Gene. (2009). Workforce readiness: A study of university students' fluency with information technology. *Computers & Education*, 53, 228-233. <https://doi.org/10.1016/j.compedu.2009.01.017>
- Khalili, A., Dobakhti, L. & Zohrabi, M. (2024). Scrutinizing the predicting factors in native and non-native English instructors' teacher immunity. *Journal of Research in Applied Linguistics*, 15(1), 62-74. <https://doi.org/10.22055/RALS.2023.43835.3061>
- Khalili, A., Zohrabi, M., & Dobakhti, L. (2025). A cross-cultural scrutiny of predictors of English teachers' immunity in the contexts of Iran, France, and the United States. *Sage Open*, 15(3), 1-18. <https://doi.org/10.1177/21582440251367151>
- Khan, S. A., Bhatti, R., & Khan, A. A. (2011). Use of ICT by students: A survey of faculty of education at IUB. *Library Philosophy and Practice*, 1, 27-39. <http://digitalcommons.unl.edu/libphilprac/677>

- Kisla, T., Arikan, Y. D., & Sarsar, F. (2009). The investigation of the usage of ICT in university lecturers' courses. *Procedia-Social and Behavioral Sciences*, 1(1), 502-507. <https://doi.org/10.1016/j.sbspro.2009.01.091>
- Kumar, N., Rose, R. C., & D'Silva, J. L. (2008). Predictors of technology deployment among Malaysian teachers. *American Journal of Applied Sciences*, 5(9), 1127-1134. <https://doi.org/10.3844/ajassp.2008.1127.1134>
- Lee, K. R. (2002). Impacts of information technology on society in the new century. *Business and management*, 5(6), 46-55. <https://doi.org/10.20944/preprints202207.0283.v1>
- Liaw, S. S. (2008). Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: A case study of the Blackboard system. *Computers & Education*, 51(2), 864-873. <https://doi.org/10.1016/j.compedu.2007.09.005>
- Lowther, D. L., Inan, F. A., Daniel Strahl, J., & Ross, S. M. (2008). Does technology integration "work" when key barriers are removed? *Educational Media International*, 45(3), 195-213. <https://www.learntechlib.org/p/101534/>.
- Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education*, 56(2), 429-440. <https://doi.org/10.1016/j.compedu.2010.09.004>
- Moursund, D. G. (2005). *Introduction to information and communication technology in education*. University of Oregon.
- Nguyen, L. A. T., & Habók, A. (2022). Digital literacy of EFL students: An empirical study in Vietnamese universities. *Libri*, 72(1), 53-66. <https://doi.org/10.1515/libri-2020-0165>
- Nilsson, D. (2005). A cross-cultural comparison of self-service technology use. *European Journal of Marketing*, 41(3/4), 367-381. <https://doi.org/10.1108/03090560710728381>
- OECD (2014). *What students know and can do: Student performance in mathematics, reading and science*. OECD Publishing. <http://dx.doi.org/10.1787/9789264201118-en>

- Oguguo, B. C., Okeke, A. O., Dave-Ugwu, P. O., Ocheni, C. A., Ugorji, C. O., Nwoji, I. H. N., & Ike, I. C. (2020). Assessment of ICT skills relevant for effective learning possessed by undergraduate students at university of Nigeria. *International Journal of Higher Education*, 9(4), 206-215. <https://doi.org/10.5430/ijhe.v9n4p206>
- Olatokun, W. M. (2009). Analysing socio-demographic differences in access and use of ICTs in Nigeria using the capability approach. *Issues in Informing Science & Information Technology*, 6, 78-97. <https://doi.org/10.28945/1075>
- Oliver, M. (2002) What do learning technologists do? *Innovations in Education and Teaching International*, 39(4), 1-8. <https://doi.org/10.1080/13558000210161089>
- Ongori, H., & Migiro, S. O. (2011). Understanding the drivers of information and communication technologies (ICTs) adoption by Kenyan small and medium enterprises (SMEs). *International Journal of Management Research and Review*, 1, 34-48. <http://repository.tuc.ac.ke:8080/xmlui/handle/123456789/568>
- Padron, Y. N., Waxman, H. C., Lee, Y. H., Lin, M. F., & Michko, G. M. (2012). Classroom observations of teaching and learning with technology in urban elementary school mathematics classrooms serving English Language Learners. *International Journal of Instructional Media*, 39(1), 45-58.
- Pedró, F. (2005). Comparing traditional and ICT-enriched university teaching methods: Evidence from two empirical studies. *Higher Education in Europe*, 30(3-4), 399-411. <https://www.learntechlib.org/p/98643/>.
- Pisa, O. E. C. D. (2017). *Results: Students' well-being*. OECD Publishing. <https://doi.org/10.1787/19963777>
- Saadé, R. G., & Kira, D. (2007). Mediating the impact of technology usage on perceived ease of use by anxiety. *Computers & Education*, 49(4), 1189-1204. <https://doi.org/10.1016/j.compedu.2006.01.009>
- Salloum, S. A., Alhamad, A. Q. M., Al-Emran, M., Monem, A. A., & Shaalan, K. (2019). Exploring students' acceptance of e-learning through the development of a comprehensive technology acceptance model. *IEEE*

Access, 7, 128445-128462.
<https://doi.org/10.1109/ACCESS.2019.2939467>

- Sedghi, M., Fazilatfar, A. M., Jabbari, A. A. & Rezai, M J. (2026). Exploring the perceptions of the educational stakeholders concerning the most important challenges of the current ELT curriculum in Iran. *Teaching English Language*, 20(1), 215-237.
<https://doi.org/10.22132/tel.2025.520519.1856>
- Shapley, K., Sheehan, D., Maloney, C., & Caranikas-Walker, F. (2011). Effects of technology immersion on middle school students' learning opportunities and achievement. *The Journal of Educational Research*, 104(5), 299-315. <https://doi.org/10.1080/00220671003767615>
- So, H. J., & Brush, T. A. (2008). Student perceptions of collaborative learning, social presence and satisfaction in a blended learning environment: Relationships and critical factors. *Computers & Education*, 51(1), 318-336. <https://doi.org/10.1016/j.compedu.2007.05.009>.
- Sun, P. C., Tsai, R. J., Finger, G., Chen, Y. Y., & Yeh, D. (2008). What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education*, 50(4), 1183-1202. <https://doi.org/10.1016/j.compedu.2006.11.007>
- Taherkhani, R., & Moazami, A. (2026). Unveiling demotivators among Iranian EFL teachers: Comparing challenges across schools, institutes, and universities. *Teaching English Language*, 20(1), 279-311.
<https://doi.org/10.22132/tel.2025.502363.1775>
- Tri, D. H., & Nguyen, N. H. T. (2014). An exploratory study of ICT use in English language learning among EFL university students. *Teaching English with Technology*, 14(4), 32-46. <http://www.tewtjournal.org>
- van Weert, T. J., & Tatnall, A. (Eds.). (2005). *Information and communication technologies and real-life learning: New education for the knowledge society*. Springer Science & Business Media.
<https://doi.org/10.1007/b136546>.
- Wuntu, C., Nita Tatipang, D. P., & Ali, M. I. (2024). Literature pedagogy for English development: Investigating preferences, motivation and best practices toward the implementation. *Teaching English Language*, 18(2), 1-34. <https://doi.org/10.22132/tel.2024.456555.1608>

(Please select one response.)	YES	NO
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Zhang, L. (2019). ICT mediated English learning: A meta-analysis. *Computer Assisted Language Learning*, 32(4), 301–320. <https://doi.org/10.1080/09588221.2018.1521469>

Zohrabi, M. & Khalili, A., (2023). The philosophy of teacher immunity: EFL teachers’ perspectives. *Journal of Philosophical Investigations*, 17(45), 330-346. <https://doi.org/10.22034/JPIUT.2024.59889.3664>

Zohrabi, M., & Khalili, A., (2024). A cross-cultural study into the utility of diverse written corrective feedback strategies in medicine students’ ESP writing courses. *International Journal of Society, Culture & Language*, 12(2), 150-169. <https://doi.org/10.22034/ij scl.2024.2025600.3436>

Appendix A

Questionnaire

Dear Student,

We would like to invite you to participate in a study carried out at the University of Tabriz and complete our questionnaire. Completing the questionnaire takes about 20 minutes. The data collected will only be used for the purposes of the present study and will not be shared with third parties.

Thank you for your cooperation!
Please, indicate your answers.

- 1.I consent to participating in the research.

Yes

No
- 2.Main university major:
- 3.Age:

•18-20

•21-25

•26-30

•over 30
4. Gender:

male

female

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1.	Digital devices (computers, tablet, smartphone, etc.) are available for me.	☐	☐
2.	The Internet service is available for me.	☐	☐
3.	I can look for information online using a search engine.	☐	☐
4.	I know not all online information is reliable.	☐	☐
5.	I can save or store files or content (e.g. text, pictures, music, videos, web pages) and retrieve them once saved or stored	☐	☐
6.	I can communicate with others using mobile phone, Voice over IP (e.g. Skype) e-mail or chat – using basic features (e.g. voice messaging, SMS, send and receive e-mails, text exchange)	☐	☐
7.	I can share files and content using simple tools	☐	☐
8.	I know I can use digital technologies to interact with services (as governments, banks, hospitals).	☐	☐
9.	I am aware of social networking sites and online collaboration tools.	☐	☐
10.	I am aware that when using digital tools, certain communication rules apply (e.g., When commenting, sharing personal information	☐	☐
11.	I can produce simple digital content (e.g., text, tables, images, audio files) in at least one format using digital tools.	☐	☐
12.	I can make basic editing to content produced by others.	☐	☐
13.	I know that content can be covered by copyright.	☐	☐
14.	I can apply and modify simple functions and settings of software and applications that I use (e.g. change default settings).	☐	☐
15.	I can find support and assistance when a technical problem occurs or when using a new device, program or application.	☐	☐

16.	I know how to solve some routine problems (e.g.close program, re-start computer, re-install/update program, check internet connection).	☐	☐
17.	I know that digital tools can help me in solving problems. I am also aware that they have their limitations.	☐	☐
18.	When confronted with a technological or non-technological problem, I can use the digital tools I know to solve it.	☐	☐

1.Please express your opinion about the efficiency of using technology in learning.

2. Please tell us how much your digital use and skill helped you to learn your courses.



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