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Digital Literacy of Iranian English as a Foreign Language (EFL) Teachers: Teaching Experience in Focus

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ABSTRACT

Contrary to the importance of digital literacy in making English as a Foreign Language (EFL) education congruent with the recent technological advancements, a scrutiny of the pertinent literature in this regard is evident. To address this gap, this investigation seeks to investigate Iranian experienced and novice EFL teachers' digital literacy within a comparative stance. Using a quantitative survey design, the data was collected via Digital Literacy Questionnaire. The participants taking part in this research included 200 conveniently selected EFL teachers (100 novice and 100 experienced teachers), holding all levels of academic degree in TEFL, English Language and Literature, and English Translation fields, with diverse years of teaching experience across various schools and institutions in Iran. The collected questionnaires were analyzed through one sample t-test and independent sample-test. The study found that EFL teachers demonstrated strong proficiency across a range of digital skills, such as typing, web searching, and utilizing digital learning tools. Moreover, no significant difference in digital literacy was identified between novice and experienced teachers which suggests both

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ARTICLE INFO

Received: 9 September 2024 | Revised: 13 October 2024 | Accepted: 16 October 2024 | Published Online: 19 December 2024
DOI: <https://doi.org/10.30564/fls.v7i1.7244>

CITATION

Barjestesh, H., Vijayaratnam, P., Sabzevari, M., et al., 2024. Digital Literacy of Iranian English as a Foreign Language (EFL) Teachers: Teaching Experience in Focus. *Forum for Linguistic Studies*. 7(1): 163–171. DOI: <https://doi.org/10.30564/fls.v7i1.7244>

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groups have similar levels of competence in terms of digital technologies. The findings hold important implications for a wide range of stakeholders, including EFL policymakers, teachers, teacher trainers, and researchers. They provide insights that can be used to improve educational policies and refine teaching practices.

Keywords: Digitalization; Digital Literacy; Novice Teachers; Experienced Teachers; Teaching Experience

1. Introduction

Teaching English has always been faced with different challenges and opportunities in different ways. Recently, digitalization has generated new challenges and opportunities for the profession. One key challenge is the growing need for digital literacy among EFL teachers^[1, 2]. According to Gilster^[3], digital literacy is the ability to comprehend and efficiently use information from various digital sources. Gilster^[3] enumerated four main elements of digital literacy as gathering knowledge, evaluating the content of information, conducting internet searches, and navigating hypertext. Digital literacy has grown into a fundamental component of EFL teaching, due to the penetration of technology into education^[4]. According to Eshet-Alkalai^[5], digital literacy transcends software usage, including a set of diverse abilities. This view was taken as a base for a comprehensive framework, involving three main elements, namely “Technical-procedural, cognitive, and emotional-social abilities” (^[6], p. 94). Martin and Madigan^[7] noted that digital literacy is a multi-layered notion that goes beyond computer skills or information literacy.

As discussed above, English teaching in digital world requires digital literacy since the profession has faced eye-catching transformations within the past few decades, specifically in the employment of technology for language instruction^[8]. Moreover, online learning has been a crucial component of education systems in recent years^[9, 10]. Gone are the days when teachers just used traditional instructional tools. In digital era, digital instruments have been integrated into the teaching profession, providing different challenges, resources and opportunities for teachers^[11].

These imply that integration of digital literacy into EFL teaching is inevitable. Therefore, teachers have no way but to resort to digital literacy to teach in line with new educational shifts and transformations. However, field observations and personal experience of the researcher as an experienced teacher shows that digital literacy is not taken seriously

at top, middle and low teacher education management levels. Digital literacy empowers teachers to confidently accept the tools of the digital age and help them teach more effectively while adapting to the evolving needs of their students^[4, 8, 12]. In other words, teachers should put traditional teaching tools aside at the expense of digital tools^[13-17].

The first step for triggering any new measurement aimed at improvement of digital literacy among teachers is to assess their present digital literacy level. Additionally, digital literacy, like any other teacher feature or competence, can be under the effect of teaching experience. It is probable that experienced and novice teachers be different in terms of digital literacy. Therefore, probing teachers’ digital literacy taking their teaching experience into account can provide the ground for conducive measures whose aims are making English teacher education more congruent with technological advancements and enhancing digital literacy of Iranian teachers. Contrary to the aforementioned arguments, it is clear from a close review of the relevant literature that this issue is not well explored. (e.g.,^[11, 15, 16, 18]). To bridge the research gap, this study aimed to evaluate EFL teachers’ digital literacy knowledge and skills in Iran, with focus on their teaching experience. Accordingly, the following research questions were posed:

1. To what extent do Iranian EFL teachers have digital literacy?
2. Are there significant differences in digital literacy between novice and experienced Iranian EFL teachers?

2. Literature Review

2.1. Theoretical Framework

This study is theoretically grounded in digital literacy. Jones-Kavalier and Flannigan^[19] defined digital literacy as an individual’s proficiency in executing tasks within a digital environment. Here, “digital” pertains to data represented numerically and mainly intended for computer usage. Jenkins

et al.^[20] further discussed this notion, asserting that this literacy is beyond traditional literacy skills to cover engagement with new media forms. This kind of literacy involves the skill to proficiently access, analyze, and create content, utilizing various communication formats within a digital context.

Moreover, Jenkins et al.^[20] stressed the active role individuals play in digital literacy. They emphasized the importance of not only consuming information but also actively participating and contributing to digital culture. In this view, skills such as thinking critically, media production and the ability to navigate and contribute to a participatory culture in the digital domain are essential components of digital literacy. Thus, digital literacy involves not just technical proficiency but also creative expression, collaboration, and interaction within digital spaces.

Leu et al.^[21] synthesized the characteristics of new literacies, including digital literacy, based on four key assumptions. Firstly, they asserted that new literacies include a variety of competencies, approaches, social practices and dispositions, essential for handling modern technologies effectively. Secondly, they emphasized the significant role of new literacies in facilitating participation in the global community. Thirdly, they highlighted the dynamic nature of new literacies, which evolve alongside changing technologies. Finally, they argued that a comprehensive understanding of new literacies benefits from diverse perspectives, acknowledging the complex interplay of cultural, social, and technological factors. Furthermore, Leu et al.^[22] differentiated between two levels of modern literacies theory, namely New Literacies (with uppercase letters) and new literacies (with lowercase letters). In this framework, digital literacy is considered a lowercase dimension that contributes to the wider concept of uppercase New Literacies. They suggested that studies focused on specific areas such as digital literacy contribute practical insights to the broader field of New Literacies. Eshet-Alkalai and Chajut^[5] introduced a six-skill model as the theoretical framework for digital literacy, including the following competencies:

1. Photovisual literacy: The skill of effectively working within digital environments.
2. Reproduction literacy: The capability to create original content by reproducing and modifying existing digital material.
3. Branching literacy: The skill to build knowledge through

dynamic navigation across different domains.

4. Information literacy: The skill to evaluate and use information critically.
5. Socioemotional literacy: The ability to interact efficiently within online social networks.
6. Real-time thinking: The capacity to process and evaluate large volumes of information in real time.

Now that we have laid the theoretical groundwork, it is helpful to see how digital literacy plays out in everyday life. Empirical studies can give a closer look at how these skills are developed and used in different contexts. They help understand how the digital literacy concepts translate into real-world experiences.

2.2. Empirical Studies

Several studies have investigated various aspects of digital literacy. Pehlevan and Ünal^[15] addressed the relationship between Technological Pedagogical Content Knowledge (TPACK) and digital literacy in university teachers and found a positive correlation between TPACK and digital literacy. The regression results concluded that digital literacy significantly predicted TPACK. Pratolo and Solikhati^[23] conducted a qualitative study aimed at exploring various aspects of digital literacy implementation among EFL teachers. Specifically, the study sought to understand how digital literacy was applied, examine teachers' attitudes toward its implementation, scrutinize associated challenges, and identify coping strategies. The research involved semi-structured interviews and classroom observations with two Indonesian junior high school EFL teachers. Data collected underwent thematic analysis and revealed that the teachers utilized computers and smartphones to access digital information. They demonstrated positive attitudes toward integrating digital literacy into EFL teaching, aligning their practices with the syllabus, recognizing their roles as educators, promoting effective teaching methods, incorporating multiple literacies, and enhancing language skills development. However, challenges such as limited technology access, diverse student backgrounds, time constraints, and budgetary limitations were recognized as barriers to effective digital literacy implementation. The study emphasizes the importance of improving teachers' technical resources, enhancing technological pedagogy, and urging policymakers to prioritize digital literacy in

education.

A comparative analysis was performed by Heidari and Tabatabaee-Yazdi^[24] to examine the digital literacy levels among EFL teachers and learners, with the goal of uncovering any significant differences in Iran. This study engaged 150 teachers and 175 learners as participants. A standardized instrument, comprising 181 items developed to measure three key digital competencies crucial for the 21st century, was employed to assess and contrast the digital proficiency of both groups. The findings revealed that teachers exhibited higher scores across all three constructs compared to students, with Communication Technology Literacy registering the highest mean score. This suggests that teachers generally possess more advanced digital literacy skills than students in the examined areas. This study emphasizes the importance of prioritizing and addressing digital skills development, particularly for students, to meet the demands of contemporary educational environments. Dashtestani and Hojatpanah^[25] explored the perspectives of 20 teachers in junior high schools, 364 students, and 3 Ministry of Education directors on digital literacy of students through a mixed-methods design. Significant differences in perceptions between teachers and learners were revealed by the results. Although interviews suggested students had a satisfactory level of digital literacy, the questionnaire indicated a lower to moderate proficiency. Technology was predominantly utilized by students for leisure rather than educational purposes, and they exhibited deficiencies in various applications skills. Furthermore, Ministry directors revealed a lack of agreement and clear strategies for enhancing digital literacy. The findings highlighted the necessity for curriculum revisions and more effective integration of technology in educational practices.

Mudra^[26] explored the attitudes of 5 EFL teachers and 8 young learners concerning the advantages and challenges of digital literacy through semi-structured interviews. On the positive side, digital literacy was seen to enhance all four language skills, along with acquainting learners with authentic materials and enhancing their exposure to digital technology. Additionally, it facilitated online collaboration between teachers and learners. However, the study uncovered several challenges. Weak internet signals leading to difficulties in accessing online resources, the complexity of online materials hindering comprehension, and the perceived expense

of digital literacy tools were highlighted as significant barriers. These challenges were further compounded by factors including the complexity of digital literacy tools, varying levels of understanding among the learners, and the limited digital literacy experience of both students and teachers.

Having established a theoretical understanding of digital literacy as well as the research gap the next step is to examine how these concepts are explored in this study.

3. Method

In this investigation, a quantitative survey design was employed to gather data through a questionnaire. The research targeted Iranian EFL teachers in high schools and private institutions. The sample consisted of 200 teachers, equally divided into 100 novice (with 1–5 years of teaching experience) and 100 experienced teachers (with over 5 years of experience). Participants held degrees ranging from B.A. to Ph.D. in fields such as English Translation, English Language and Literature and TEFL in Iran. This classification aligns with the criteria established by Motallebzadeh and Kazemi^[27]. Convenience sampling was utilized to select the teachers from virtual groups on social networking platforms. They were Persian native speakers.

To address ethical concerns, participant consent was obtained before their participation in this investigation. The participants' information was treated with confidentiality. Data collection utilized the Digital Literacy Questionnaire, developed by Son^[28], which consists of 14 Likert-scale items designed to assess digital literacy in EFL contexts. According to Son^[28], the questionnaire demonstrates a reliability of 0.80 as measured by Cronbach's Alpha and was validated through factor analysis. Data collection began with the distribution of the Google Form questionnaire via social networks, including Telegram and WhatsApp. Subsequently, descriptive statistics and independent samples t-tests were used to analyze the data.

4. Results

To address the first research question, "To what extent do Iranian EFL teachers possess digital literacy?", mean scores, standard deviations (SDs), and a one-sample t-test were calculated. The results are summarized in **Table 1**.

Table 1. Descriptive results.

	Descriptive	
	Mean	Std. Deviation
Q6	3.50	0.86
Q7	4.00	0.90
Q8	3.61	0.95
Q9	3.86	0.80
Q10	3.52	0.80
Q11	3.59	0.51
Q12	3.48	0.60
Q13	3.39	0.63
Q14	3.47	0.71
Total (Section 2, Qs 6 to 10)	3.79	0.75
Total (Section 3, Qs 11 to 14)	3.38	0.60

As shown in **Table 1**, the following skills were found to be significantly high ($p < 0.05$): typing, web searching, computer literacy, internet literacy, digital literacy, understanding basic computer hardware functions, using keyboard shortcuts, employing the computer for learning, learning from reading and viewing content on a screen, using social networking services, and feeling competent with digital learning resources. Additional skills include adjusting screen brightness and contrast, managing windows, locating files with search commands, scanning for viruses, writing files to CDs, DVDs, or USB drives, creating and updating web pages, editing digital photos, recording and editing digital sounds and videos, downloading and using apps, and utilizing various applications and software such as blogs (e.g., Blogger), communication apps (e.g., Skype), dictionary apps (e.g., Dictionary.com), podcasts (e.g., Apple Podcasts), presentation tools (e.g., MS PowerPoint), search engines (e.g., Google), social networking services (e.g., Facebook), spreadsheets (e.g., MS Excel), video-sharing sites (e.g., YouTube), web design applications (e.g., Dreamweaver), wikis (e.g., PBworks), and word processors (e.g., MS Word). The means for all these skills were 4 or close to 4, which corresponds to a ‘good’ rating on the questionnaire. Note that questions 1 to 5, which pertained to demographic information, are not reported in the results.

To address the second research question, “Are there any significant differences in digital literacy between novice and experienced Iranian EFL teachers?”, an independent samples t-test was conducted. The findings are shown in **Table 2**.

The analysis in **Table 2** shows whether there were any significant differences in responses between novice and experienced individuals across various questions. Starting with

Question 6, novices had an average score of 3.60, while the experienced group scored slightly lower at 3.40. However, this difference was not statistically significant ($p = 0.597$), indicating that both groups responded similarly. For Question 7, novices again had a higher average score of 4.33, compared to 3.66 for the experienced participants. Despite this visible difference, the result was not statistically significant ($p = 0.113$), suggesting that the variation might be due to random chance rather than a meaningful distinction between the groups.

Similarly, in Questions 8 and 9, novices scored 3.85 and 4.12, while the experienced group averaged 3.45 and 3.60, respectively. Although novices tended to score higher, these differences were not statistically significant either, with p-values of 0.135 and 0.104, further indicating that the two groups performed similarly on these questions. In Question 10, novices scored 3.69 compared to 3.57 for the experienced participants. Once again, this difference did not reach statistical significance ($p = 0.605$), reinforcing the trend of similar responses between the groups.

Turning to Questions 11 to 14, the results remained consistent. For Question 11, the experienced group slightly outperformed novices (3.69 vs. 3.44), but this difference was not statistically significant ($p = 0.178$). Similarly, for Questions 12 to 14, any observed differences between the two groups were minimal and not statistically significant, with p-values of 0.417, 0.142, and 0.222, respectively. These results suggest that both novice and experienced participants responded in a comparable manner across these questions. When examining the total scores for Section 2 (Questions 6–10), novices had a slightly higher average of 3.81 compared to 3.60 for the experienced participants. However, this difference was not statistically significant ($p = 0.141$). Likewise, for Section 3 (Questions 11–14), novices averaged 3.33, and the experienced group averaged 3.40. This difference was also not statistically significant ($p = 0.177$).

It can be observed that, across all individual questions and the combined sections, no statistically significant differences were found between the novice and experienced teachers. While novices often had slightly higher average scores, these differences were not large enough to be considered meaningful from a statistical perspective. Overall, both groups demonstrated similar patterns in their responses, suggesting that experience level did not lead to significant

Table 2. Results of independent samples t-test.

	Group	Mean	SE	t	df	Sig.
Q6	novice	3.60	0.22	0.5330	1	0.597
	experienced	3.40	0.25			
Q7	novice	4.33	0.18	0.589	1	0.113
	experienced	3.66	0.23			
Q8	novice	3.85	0.17	0.176	1	0.135
	experienced	3.45	0.22			
Q9	novice	4.12	0.19	0.077	1	0.104
	experienced	3.60	0.16			
Q10	novice	3.69	0.20	0.521	1	0.605
	experienced	3.57	0.18			
Q11	novice	3.44	0.14	-1.367	1	0.178
	experienced	3.69	0.13			
Q12	novice	3.37	0.19	-0.818	1	0.417
	experienced	3.40	0.13			
Q13	novice	3.21	0.16	-1.494	1	0.142
	experienced	3.42	0.12			
Q14	novice	3.19	0.18	-1.239	1	0.222
	experienced	3.35	0.15			
Total (Section 2, Questions 6 to 10)	novice	3.81	0.14	0.107	1	0.141
	experienced	3.60	0.18			
Total (Section 3, Questions 11 to 14)	novice	3.33	0.13	-1.371	1	0.177
	experienced	3.40	0.11			

differences in performance.

The results offer insights into the digital literacy levels of Iranian EFL teachers. To understand the bigger picture and what these findings reveal about digital literacy in this context, the next section shows the meanings of these findings mean and how these results align with or differ from the existing literature.

5. Discussion

In this section, the obtained results are interpreted and compared with the previous studies. Concerning the first research question “To what extent do Iranian EFL teachers have digital literacy”, it was found that Iranian EFL teachers’ digital literacy is significantly high. This can be due to the growing use of digital instruments within the past ten years in various educational contexts. That is, situations generated in the recent years have obliged teachers to use digital instruction and instruments to cope with the necessities emerged. Indeed, emergence of Covid-19 encouraged or obliged teachers to keep up with technology and software tools and materials to survive in newly emerged educational world. Some of these tools and methods are still being used in most of instructional settings. Apparently, pre-pandemic

procedures are here to stay in post-pandemic era. All these called for teachers’ preparation in terms of digital teaching methods and materials. A direct outcome of this has been teachers’ prioritizing digital literacy as a must to teach professionally and effectively in post-pandemic era. Besides, digital era is characterized with the need of teachers to acquire different digital pedagogy skills and competencies so that they can teach congruent with technological advancements. This finding aligns with the investigations by Heidari and Tabatabaee-Yazdi^[24] and Pratolo and Solikhati^[23] wherein it was found that digital literacy of EFL teachers is high.

Concerning the second research question “Is there any difference between novice and experienced Iranian EFL teachers’ digital literacy?”, no significant differences were observed between experienced and novice Iranian EFL teachers’ digital literacy. This can be justified referring to the fact that recent situations called for all teachers’ enhancement of their digital literacy regardless of their teaching experience. Therefore, both novice and experienced EFL teachers have adapted to the evolving demands of the classroom by developing their digital literacy skills. From another perspective, novice teachers are usually younger than experienced teachers and more probably more up to date in terms of technological competence. This is why they did not lag behind

experienced teachers in terms of digital literacy. More interestingly, novice teachers are more energetic and motivated to outperform their colleagues. This could have encouraged them to improve their digital literacy to benefit from new teaching achievements. All these have led to equality of digital literacy of experienced and novice teachers. Since there was no study on the comparison of male and female learners' digital literacy in the existing literature, this result cannot be compared with previous studies.

All in all, it can be argued that digital literacy is a must for teaching professionally in today's digital area characterized by digitalization of education, teaching and assessment methods, educational materials, classroom management and different dimensions of teaching. Such conditions require teachers to be digitally literate and competent to cope with complexities of teaching in digital era. Otherwise, they are tagged as traditional teachers who have lagged behind requirements of their own profession. The bottom line is that teachers need digital literacy and have well recognized this. Evidence for this is high digital literacy of teachers investigated in this study, regardless of their teaching experience.

6. Conclusions

The first finding of the investigation was that Iranian EFL teachers' knowledge of digital literacy is high. According to this finding, it is concluded that the strategies, techniques, practices and activities already used by Iranian EFL teachers have been adequate for enhancement of their digital literacy. Moreover, it is concluded that Iranian EFL teachers have been successful in moving in line with the recent necessities of digital educational world. However, the integration of this conclusion can be enhanced by the replication of the study with a larger sample. Moreover, given that this investigation just benefited from a questionnaire, triangulation of data can add to the validity of this conclusion.

As the second finding, no significant differences were observed between experienced and novice Iranian EFL teachers with regard to their digital literacy. This leads to the conclusion that teaching experience has no significant effect on Iranian EFL teachers' digital literacy. Additionally, it is concluded that even those teachers with low teaching experience can cope with the challenges and requirements of digitalization for teachers. Last but not least, it can be concluded that

teaching experience cannot be used as a yardstick to screen teachers in terms of digital literacy.

This study holds implications for various groups, including EFL researchers, language institute managers, teacher trainers and teachers. EFL teachers should continue the same procedures, tools, strategies, activities and techniques already employed to enhance their own digital literacy. They should make their best to keep their digital literacy high to survive in a complex and challenging educational era. Teacher teachers should use already used teaching strategies and materials to encourage digital literacy of student teachers. They should also take advantage of new strategies to encourage teachers to improve their digital literacy knowledge and abilities. Moreover, this study has some implications for EFL teacher development programs through workshops, ongoing training and teacher collaborations to make sure EFL education stays in step with modern technology.

One limitation of this study is that it used a convenience sample, which may not fully capture the broader population of Iranian EFL teachers, making it harder to generalize the findings. Additionally, since the data came from self-reported questionnaires, there can be a chance that participants may have been biased in their responses. Future studies could address these issues by using a more diverse and randomized sample, and by adding qualitative methods like interviews or classroom observations to get a deeper understanding of how digital literacy is actually used in practice. Expanding the research to other educational settings or countries could also provide a more comprehensive picture of digital literacy in EFL teaching.

Author Contributions

Writing—Original Draft Preparation, M.S.; Editing and revising, P.V.; Data Analysis and Methodology, H.B.; Data Collection, M.M.; Project Administration and Supervision, N.F.R.; Review, Editing and Revision, K.R. All authors have read and agreed to the published version of the manuscript.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

All participants provided informed consent before taking part in this study. They were thoroughly informed about the study's purpose, procedures, potential risks, and benefits. Participation was entirely voluntary, with participants free to withdraw at any time without any consequences. All collected data were treated with strict confidentiality and used exclusively for the purposes specified in the research.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflict of Interest

The authors declare no conflict of interest.

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