

DIGITAL LITERACY IN LANGUAGE LEARNING IN HIGHER EDUCATION

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Abstract: This study discusses the importance of digital literacy in language learning at universities. The objective of this research is to examine the themes/variables that are frequently studied regarding the integration of digital technology in language learning and its impact on the quality of education. This research uses a literature review approach. The PICOS model was used to collect and analyze relevant literature on digital literacy in language learning. A total of 20 Scopus articles (Q1-Q3) were analyzed. The findings indicate that the most discussed themes include digital literacy skills, vocabulary proficiency, essay writing skills, digital social behavior, and motivation for independence in language learning. The digital technologies used include gamification, visual vocabulary, wikis, chatbot-assisted assessments, virtual reality, flashcards, and the integration of ELSA Speak AI. The use of digital technology can enhance the quality of language learning. The implications of this research highlight the importance of integrating digital literacy into higher education curricula to foster students' critical thinking skills in navigating the rapidly evolving digital information landscape.

Keywords: Literacy Digital, Language Learning, Higher Education

Introduction

The way of accessing, sharing and processing information has greatly transformed by the new digital technologies for the last decades, encompassing education as an area (Spante et al., 2018). At a higher educational level, digital literacy is becoming a basic skill much more than using digital devices and applications; it has also incorporated evaluating, understanding and interacting with information in cyberspace (Gibson & Smith, 2018). Digitally, literacy forms an important component in language learning in the age of digitalization. Digital Literacy allows students to access various digital learning resources, and develop their analysis of information and communication skills (Anggeraini et al., 2019; Wati et al., 2023). On the other hand, within the context of language learning, it constitutes not only using technology but also other sophisticated practices, which involve producing content, evaluating information, and social-emotional skills (Anggeraini et al., 2019).

Copying this into the normal functions of higher education institutions worldwide, many universities started to incorporate the digital components in their curriculum, and the leaning process became more effective and efficient (Alenezi, 2023). The integration of digital technologies offers higher education institutions with opportunities for learning that are more flexible and student-centered (Røe et al., 2022). Staff need to improve their technological competencies, which is another challenge (Jamilah, 2020; Røe et al., 2022). The new problems were impacted by the COVID-19 pandemic, which resulted in the use of new digital learning approaches and created problems such as a diminishing form of pedagogy and increasing transmissionist teaching (Røe et al., 2022).

The major aim of this study is reviewing literature on digital literacy in language education focused on higher education. It will also show how digital technologies can enhance student language skills. This study shows the best practices and approaches in technology-enhanced teaching that tangibly work. This study is expected to contribute to extending the scholarship on studying digital literacy within language education for higher education. This will help make policies on how to improve the effectiveness of technology-based language learning in higher education.

Literature Review

Digital Literacy and Language Skills

To increase its relevance and application in life, digital literacy is gaining importance in relation to language learning in education. All the skills needed to access, process, and communicate information through digital means are known as digital literacy, which significantly amplifies learning and communication proficiency in language learning. This brings a change in the methodology of teaching from conventionality to modern. Mobile apps and online platforms, have been shown to improve a range of skills in many different languages, including writing and pronunciation (Indriani et al., 2024). The increased use of digital literacy in language learning promotes high engagement and motivation for Generation Z students (Pikri et al., 2023).

Digital Literacy, Motivating Students, and the Educators' Skills

Digital literacy media in language learning is thus proved to be able to increase students' interest in reading and learning and engagement among students (Sukmadewi & Meli, 2023). The use of interactive digital resources can also encourage creativity and curiosity towards learning language, which would make it even more exciting (Sukmadewi & Meli, 2023). Digital technology has the potential to actively engage learners in and out of classrooms (Pinto & Leite, 2020). The trend of leaning towards online education is almost becoming an absolute necessity for teacher professional development to effectualize technology use in language teaching (Giannikas et al., 2022). Thus, this is the time that the curricula would get adopted into taking this digital literacy development in language learning as a universal framework to formalize language used for education in a digital realm (Rahman et al., 2023). Such digital literacies refer to both the technical skills and social practices to develop an understanding of these terms, which will most likely differ according to the different contexts of policy and research (Spante et al., 2018).

Method

The research design in this study is qualitative research with a literature review approach. This study analyses the literature related to digital literacy in language learning in higher education, with a focus on identifying trends, the impact of the use of digital technology in the context of language education. The literature review method applied refers to the PICOS model, which includes five main elements: population, intervention, comparator, outcome, and study. The PICOS framework has been applied in various fields, including the field of disease (Abbade, Wang, Sriganesh, Mbuagbaw, & Thabane, 2016; Eldawlatly et al., 2018).

Application of the PICOS Model

- a) Population: the research regarding digital literacy regarding language learning in higher education.
- b) Intervention: Usage of digital technologies including internet-based learning tools or apps for online learning platforms in teaching languages in a foreign context.
- c) Comparator: contrast digital-supported language learning with traditional forms.
- d) Outcome: examining the extent to which using digital technologies affects language proficiency, student engagement, and learning outcomes in learning languages in higher education.
- e) Study: Studies have adopted the form of quantitative research, qualitative research, or both by publishing reputable indexed international journals.

Data Analysis

After the literature was collected, a thematic analysis was conducted to identify the themes/variables covered, trends and impacts of using digital literacy in language learning. The resulting findings will be used to provide a deeper understanding of the role of digital literacy in improving the effectiveness of language learning in higher education.

Result and Discussion

To discuss the theme of the research, 20 quartile 1 Scopus reputable articles were collected, 17 articles, quartile 2 as many as 2 and quartile 3 as many as 1 article. Metadata collection technique through artificial intelligence ‘Elicit’ journal period 2020-2024.

Table 1 Metadata of Digital Literacy Integration Articles in Language Learning

No	Author	Thema/Variable	Research Method	Impact on language learning
1	Alt & Raichel, 2020	Digital literacy skills	Quasi-experiment	Gamification learning environment can improve digital literacy skills
2	Hamed at.al 2020	Email-assisted visual vocabulary, vocabulary knowledge	Quasi-experiment	The visual vocabulary class had more vocabulary proficiency than the conventional vocabulary class.
3	M. Rahimi, J. Fathi, 2021	Wiki collaboration, self-regulation, writing skills	Mix method (quantitative and qualitative, Quasi-experimentation	The writing ability of the class with wiki collaboration is higher than that of the non-wiki class
4	J. Jeon, 2021	Chathot-Assisted Dynamic Assessment (CADA), vocabulary acquisition and provision of diagnostic information	Quasi-experiment	Classes using Chathot-Assisted Dynamic Assessment (CADA) are more capable of vocabulary acquisition and provision of diagnostic information than non-CADA classes.
5	I. Nicolaidou, et.al, 2021	Virtual reality and mobile apps, vocabulary skills	Quasi experiment, Virtual reality app class and mobile app class	Virtual Reality classroom and mobile app are both effective and engaging for foreign language learning, yet there is no significant difference between them.

6	Mücahit Öztürk, Ünal Çakıroğlu, 2021	Listening skills, foreign language skills	Quasi-experiment, self-regulated experimental class, and non-regulated control class(The self-regulated class had a more positive impact on foreign language skills than the control class and there was no difference in listening scores between the two.
7	Zhonggen Yu, et.al, 2022	behavioural, social, cognitive, emotional) and English learning outcomes.	Quasi-experiment, mobile technology classroom (Rain classroom), and social media device classroom (WeChat), traditional multimedia projection system classroom	Student engagement and English learning outcomes of mobile learning technology classes are higher than those of classes using traditional social media or multimedia tools.
8	Hamad H. Alsowat, 2022	Essay writing skills and digital literacy	Quasi-experiment, hybrid class and virtual class	The essay writing and digital literacy skills of the hybrid class are higher than those of the virtual class
9	A. Salem, 2022	Argumentative writing skills, self-directed learning, and EFL learner autonomy.	Mix method (quantitative and qualitative, Quasi experiment, one online digital class, one offline digital class, and one traditional class.	The argumentative writing skills of offline digital classes are more effective than online digital classes, and traditional classes are more effective than online digital classes.
10	Hocheol Lee, et.al., 2022	Literacy education, digital social behaviour, happiness, cognitive function	Quasi-experiment, Experimental class (digital literacy education) of adults over 65 years old living in rural areas, and control class of 45 people over 65 years old who did not receive literacy education.	Digital literacy education in older adults in rural areas higher smartphone usage and video recording capacity compared to control group
11	M. Zakian, et.al., 2022	English vocabulary acquisition, use of digital flash card mobile phones	Quasi-experiment, class using mobile app (NGSL builder), traditional material class	Vocabulary learning with the help of digital flashcards classroom mobile phones is more effective for EFL learners' out-of-class English vocabulary acquisition than the control class.
12	A. Rahmani, et.al., 2022	Mobile learning and flashcards in vocabulary learning outside the classroom, vocabulary knowledge	Quasi-experiment, 2 experimental classes using mobile high-frequency digital flashcards and 1 control class.	Using mobile devices and digital flashcards for out-of-class vocabulary learning can improve EFL learners' knowledge of high frequency words.
13	Ismail Xodabande, Yasaman Iravi, B. Mansouri, Hoda Matinparsa, 2022	Vocabulary skills, use of digital flash cards on mobile devices	Quasi-experiment, experimental group 1 used digital cards, experimental class 2 used paper cards, and 1 control group used a word list.	A class using digital flashcards on mobile devices can improve students' academic vocabulary learning
14	İbrahim Yaşar Kazu, Murat Kuvvetli, 2023	Vocabulary acquisition, digital language learning	Quasi experiment, 1 group using web 2.0 application Quizziz, 1 control group using vocabulary by memorisation	Digital game-based classroom language acquisition is more effective for vocabulary acquisition and increases student motivation.

15	Damar Isti Pratiwi, Budi Waluyo, 2023	English learning outcomes, digital technology	Quasi experiment, 1 experimental class and 1 control class	Experimental classes using digital technology were more independent and had higher learning outcomes in college
16	Tahereh Boroughani, Nastaran Behshad, Ismail Xodabande, 2023	Academic vocabulary knowledge, self-regulation capacity, mobile phone-assisted digital class cards	Quasi-experiment, experimental group 33 people and control group 21 people	Mobile phone-assisted vocabulary learning with digital flashcards effectively improves college students' academic vocabulary knowledge and self-regulation capacity
17	S. Alneyadi, E. Abulibdeh, Yousef Wardat, 2023	Literacy skills, digital learning environment	Quasi experiment, experimental class and control class	Reading comprehension and creative writing skills were higher in the experimental class.
18	Kuo-Wei Kyle Lai, H. Chen, 2023	Virtual Reality (VR), PC games,	Quasi experiment, VR class and PC class	VR games are more effective than PC in long-term vocabulary learning
19	Abdullah Alamer, Ahmed Al khateeb, 2023	Use of WhatsApp, motivation for language learning autonomy	Quasi-experiment, a class using WhatsApp with no use of	The use of WhatsApp mobile app can increase language learners' autonomy motivation.
20	Mohammad Ahmad Ibrahim Al-Shallakh, 2024	Elsa speak AI integration, student English pronunciation performance	Quasi-experiment, experimental class and control class	Elsa Speak's AI application into higher education can improve students' English pronunciation performance.

According to Table 1, the themes or variables investigated are digital literacy skills, writing skills, vocabulary knowledge, vocabulary acquisition, vocabulary proficiency, English language acquisition. Further English learning outcomes include essay writing skills, digital social behavior, and motivation for autonomy in learning English. Additionally, the following digital technology trends have been adopted in language learning: gamification, visual vocabulary, wikis, Chatbot-Assisted Dynamic Assessment, virtual reality, ka phones, flashcards, digital, and elsa speak AI integration.

The influence of integrating gamification digital technology in language learning can improve digital literacy skills (Alt & Raichel, 2020). Visual vocabulary is effective for vocabulary mastery, as mentioned by Barjesteh et al. (2022). Meller and Peters (2022) describe it as very interesting for language learning. Learning wikis effectively builds writing skills according to Rahimi & Fathi, 2022. Using Chatbot-Assisted Dynamic Assessment media, the vocabulary acquisition of students is higher in the CADA class than for non-CADA students (Jeon, 2023). Self-regulated treatment in language learning affects foreign language skills. According to Yu et al., 2022, "using mobile technology media (Rain classroom) resulted in higher engagement and learners' English language learning outcomes, digital flash card mobile media (mobile application (NGSL builder), impact on vocabulary acquisition Zakian et al., 2022), using digital flash cards Rahmani et al., 2022 increased also academic vocabulary Xodabande et al., 2022). While according to (Kazu & Kuvvetli, 2023) using web 2.0 Quizziz application is more effective in language acquisition and motivation than classes using vocabulary memorisation.

Teaching languages through virtual reality classes and app classes has been highly interesting as well as effective in learning, as per the experimentation done by Nicolaidou et al. in the year 2023; even more, Lai and Chen said to use technology more efficiently for longterm vocabulary retention. This newly adopted digital technology was effective towards an even more independent and better learning outcome (Pratiwi & Waluyo, 2023); digital learning settings improve comprehension and writing performances (Alneyadi et al., 2023) further clarifies that WhatsApp application may increase motivation autonyms-for-learner language. New research that has just been done (Al-Shallakh, 2024) claims that AI Elsa speak can actually increase English pronunciation performances.

Based on the results presented by the analyses they conducted, the findings of the study show that the learners taught using technology as well as digital literacy way have a better tendency to differentiate between valid and invalid information. They proposed that the immersive nature of digital platforms that take the form of interactive video games and social media encourages language learning through interactive and contextualized learning experiences (Gee & Hayes, 2011). They are thus important for language learning because the enhancement of using digital tools in which education can continue through improved communication and cognitive development (Audrin & Audrin, 2022). Digital literacy also translates into the 21st-century skills since it empowers individuals to make an engagement with technology and information effectively, which becomes important for successful language learning and overall competence in a digitally-driven society (Reddy et al., 2021). Digital Literacy encourages participation and flexibility in digital environments, which helps learners create better communication (Schweinberger et al., 2021). Martinez-Bravo, Sádaba-Chalezquer, and Serrano-Puche, (2020) suggest that such holistic ability--as digital literacy--is a key lifelong learning competence; skills would naturally integrate with the emphasis on being digitally included and having access to knowledge when it comes to successful language learning in this digital age. Mohammadi, (2024), is then put into light showing that digital information literacy stands as one important aspect of knowing how to manage knowledge effectively.

Conclusion

Good digital literacy skills need to be possessed by students. They use these skills to distinguish between various accurate and inaccurate information obtained from online sources and determine its truthfulness through factors such as the author, publisher, and publication date. Students with high digital literacy skills are not only able to identify biases in the information they receive but are also more critical in evaluating and selecting information topics for language learning purposes. This reinforces the need to incorporate digital literacy into higher education curriculum, especially those related to language learning, to develop critical thinking and enhance the quality of learning for students. Although this research has some limitations related to the sample size, the findings contribute significantly to the theory and practice of digital literacy in language education at the higher education level.

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