3L: Language, Linguistics, Literature® The Southeast Asian Journal of English Language Studies
Vol 30(4), December 2024 http://doi.org/10.17576/3L-2024-3004-21

Critical Digital Literacy and the Dynamics of English Language Learning Practices: Saudi Perspectives

SAFAA M. ABDELHALIM
College of Languages and Translation
Imam Mohammad Ibn Saud Islamic University (IMSIU), Saudi Arabia
smmahmoud@imamu.edu.sa

ABSTRACT

The concept of literacy has evolved beyond traditional reading and writing skills, encompassing dynamic practices driven by digital sources and distributed cultures. However, empirical research suggests that despite their familiarity with web-based technologies, digital natives often lack the critical digital literacy (CDL) skills necessary for effective digital citizenship and academic contexts. The same concern applies to language learning as well. Therefore, it is crucial for language education to identify and examine the beliefs and practices related to CDL among EFL learners. This large-scale study focuses on CDL with a specific emphasis on the Arabic-speaking context, specifically targeting EFL undergraduates who are actively involved in supporting their language learning through self-study using online sources. The main aim of this study is to explore CDL practices among these students, investigate the impact of engaging in CDL practices on their language learning, and examine the correlation between CDL practices and language learning engagement. Furthermore, the study explores factors that facilitate or hinder CDL practices, considering demographic variables such as gender, academic major, and language proficiency. Using a mixed-methods approach with a descriptive cross-sectional survey design, data were collected from 387 first-year EFL undergraduates through structured and open-ended questions. The findings revealed diverse CDL practices among students, with positive perceptions of its impact on language learning. There was a positive correlation between CDL practices and English language learning engagement. Students identified several factors that mediated the development and practice of CDL skills. Significant pedagogical implications and potential directions for future research aimed at enhancing CDL among EFL learners are discussed.

Keywords: Critical digital literacy; language learning engagement; language proficiency; gender; EFL students

INTRODUCTION

Despite their appearance of neutrality, digital technologies carry and perpetuate biases and assumptions from their designers to serve specific agendas (Jones, 2021), emphasising the crucial need for language learners to understand the power structures inherent in both linguistic and non-linguistic modes of expression. Moreover, due to students' reliance on the constant stream of digital technologies, there is a concern that they may lack essential cognitive abilities, such as embracing mystery, wonderment, and inquiry, as well as potentially experiencing a decline in creativity (Cladis, 2020). This necessitates language learners to adopt a critical approach, becoming agents who interrogate texts, media, and the institutions that produce, promote, or utilise them (Hauck, 2019; Jones & Hafner, 2021), particularly within the emergence of "digital wilds" within informal and unstructured contexts, where language learning is perceived as a social practice (Sauro & Zourou, 2019, p.2). The concept of "Digital Wilds" encompasses the realm of informal language learning occurring within digital spaces, communities, and networks outside formal educational settings, as articulated by Sauro and Zourou (2019).

Consequently, literacy has undergone a significant transformation beyond its traditional understanding of contextualised reading and writing capabilities, evolving into a set of dynamic practices driven by digital sources, interactivity, and distributed cultures (Cladis, 2020; Jones & Hafner, 2021; Liu, 2023). This epistemic shift ushered in a new era in literacy studies, encompassing terms like multimodal literacy, computer literacy, online literacy, media literacy, information literacy, and digital literacy (Jones & Hafner, 2021; Knobel & Lankshear, 2018; Šorgo et al., 2017). Together, these terms represent the skills and knowledge needed to navigate, understand, and effectively engage with multi-dimensional, fast-paced, and media-rich digital environments (Garcia et al., 2015; Šorgo et al., 2017). Digital literacy has emerged as a potential predictor of learner success, as it acknowledges the importance of proficiency in both language skills and technology utilisation for self-directed learning activities (Hafner et al., 2015; S. Kang & Kim, 2021).

Today's EFL undergraduate students, commonly referred to as digital natives (Šorgo et al., 2017), are assumed to possess inherent familiarity with digital technologies and use them in a seemingly "natural" manner (Hamat & Abu Hassan, 2019; Prensky, 2001). However, despite entering their academic pursuits with diverse experiences in utilising web-based technologies as an integral part of their daily lives, empirical research indicates that digital natives often lack the critical skills necessary for effective digital citizenship (Šorgo et al., 2017) and face challenges when applying these digital literacies in academic contexts (Caverly et al., 2019; Juhaňák et al., 2019). Critical skills in the digital realm encompass the ability to evaluate the credibility of online sources, discern misinformation, and protect personal data while engaging with digital platforms. It is widely understood and conceptualised as a multi-dimensional construct that encompasses interconnected facets and components that enable students to construct, critique, and contest at a virtual level to acquire legitimate knowledge (Pangrazio, 2016). In this context, Zhou and Wei (2018) argue that digital language learners must comprehend and employ appropriate learning strategies to navigate the extensive use of technologies and access to online resources, while their teachers play a crucial role in teaching these strategies as needed

To address this, CDL has become a crucial focus in literacy education, bridging critical literacy and digital literacy studies (Golden, 2017). CDL, as used in this study, pertains to EFL undergraduates' ability to locate, evaluate, and use digital information within dynamic sociocultural digital spaces efficiently, effectively, and ethically (Caverly et al., 2019; Jones & Hafner, 2021). These skills enable students to synthesise, evaluate, and discern credible information, particularly in the face of fake news and misinformation (Indah et al., 2022; Weber et al., 2018). By honing these digital skills, students not only enhance their learning but also contribute to their personal development, including self-efficacy (Mishra, 2019), thus preparing them for future career demands and personal aspirations (S. Kang & Kim, 2023; Liu, 2023).

Extensive research has been conducted on digital literacy and digital literacy education, particularly in 21st-century teaching contexts that emphasise integrating digital literacy to achieve educational goals (Brocca et al., 2024; Ertürk, 2022). However, existing research studies often focus on investigating the technical digital literacies of teachers or examining their levels of preparedness and self-efficacy in utilising digital technology for educational purposes (e.g. Hatlevik, 2017). Similarly, numerous studies have explored the perceptions of EFL teachers and preservice teachers regarding literacy and technology use in teaching, as well as their perceptions of digital and printed texts in relation to literacy (Brocca et al., 2024; Gouseti et al., 2023; S. Kang & Kim, 2023). Furthermore, although some studies have explored EFL students' perceptions of digital literacy in language learning and emphasised the need for broader and more diverse samples

(e.g., Caverly et al., 2019), it is important to note that most of these studies have primarily concentrated on EFL contexts outside of Arabic-speaking environments, overlooking the dynamics and considerations specific to Arabic-speaking contexts.

The success of second language (L2) learning significantly relies on the active participation and commitment of students. Engagement refers to a student's active involvement and emotional commitment during learning activities (Reeve et al., 2004). This construct has garnered increasing attention within the second language acquisition (SLA) field, particularly with the emergence of the positive psychology movement (Dewaele & Li, 2021). Research exploring how L2 learners engage with learning opportunities indicates that engaged students are those who actively invest effort and attention in L2 learning, demonstrate persistence, and self-regulate their behaviour towards achieving learning goals (e.g., Hiver et al., 2020; Lambert et al., 2017). The L2 learning experience has been identified as a crucial predictor of learners' engagement (e.g., Al-Hoorie, 2018), with recent studies highlighting its importance in capturing essential details about students' current engagement levels in the learning process (Aubrey et al., 2022; Papi & Hiver, 2020). Understanding engagement can shed light on the ways in which learners participate in language learning opportunities and use language effectively (Dörnyei, 2019). While the positive impact of classroom engagement on overall learning outcomes is well-documented, the focus on engagement within language learning (LL) in online contexts remains limited. Currently, there is a notable gap in understanding the specific factors that contribute to fostering engagement in language learning within online environments.

Addressing this paucity, the present study unravels the dynamics of engagement in digital language learning practices among Arabic-speaking EFL undergraduates, shedding light on the nuanced factors that influence engagement levels in this context. By investigating how Saudi EFL undergraduates perceive and apply CDL skills across diverse academic disciplines, the study aims to illuminate the interplay between these skills and language learning engagement. Furthermore, it seeks to analyse potential disparities in CDL practices based on demographic factors like gender, academic discipline, and English language proficiency levels. The findings of this study are anticipated to yield significant implications for both research and pedagogy. By exploring variations across academic majors, language proficiency levels, and gender representations, this research aims to provide educators and curriculum designers with valuable insights to support informed pedagogical choices, tailor curricula effectively, and enhance the integration of digital resources. Moreover, by identifying barriers to CDL proficiency, this research will guide the development of targeted strategies to strengthen digital literacy in the Saudi EFL context and other similar contexts.

LITERATURE REVIEW

DEFINING CRITICAL DIGITAL LITERACY AND ITS SIGNIFICANCE IN EFL LEARNING

Defining digital literacy has been a subject of ongoing debate among scholars, resulting in a plethora of terms and definitions that reflect the complex, multifaceted nature and dynamic evolution of the concept (Gouseti et al., 2023; Marsh, 2019). Definitions range from functional aspects of digital technologies (Bawden, 2008; O'Brien & Scharber, 2008) to broader dimensions encompassing critical thinking, social awareness, and agency (Hauck, 2019; Leu et al., 2017; McDougall et al., 2018).

In the context of EFL learning, CDL has been defined as a form of literacy that empowers language learners to actively engage in social practices, enabling them to overcome material and cultural barriers associated with globalisation and networked living (Liu, 2023). This includes accessing knowledge, acquiring knowledge, constructing identity, maintaining social connections, and asserting their rightful participation in cosmopolitan equity and diversity. Through reflective practice, students question and analyse digital resources, becoming more aware of their positioning and choices within the digital environment (Watulak, 2016).

Exploring CDL practices in the context of EFL learning necessitates understanding the difference between critical thinking and critical literacy (Nazanin Dehdary, 2022). While critical thinking focuses on nurturing reasoning and rationalising skills, such as analytical, evaluative, and creative thinking, in a disciplined manner (Paul & Elder, 2005), critical literacy encompasses dimensions such as challenging conventional beliefs, considering multiple viewpoints, engaging with socio-political issues, and actively promoting social justice through action (Mulcahy, 2008). Within the realm of CDL, there is a recognition of the interconnectedness between reading, writing, and the historical, political, economic, and cultural contexts in which EFL learners exist. It positions individuals as active participants in shaping both the virtual and physical worlds, offering the potential for societal transformation through engagement with diverse literacies (Aguilera & Pandya, 2021). In the context of EFL learning, CDL encourages students to develop critical thinking skills while also fostering a deeper understanding of the sociocultural implications of digital texts and technologies.

Watulak (2016) proposed a comprehensive CDL framework consisting of four key components: a deep understanding of the cultural, social, and historical contexts of technology use, reflective abilities, critical analysis and thinking skills, and proficiency in utilising digital technology production tools and skills. This framework aims to de-emphasise the prominence of technology skills - or what Buckingham (2007) calls 'functional literacy' - and emphasise engagement with the broader contexts of technology use. In other words, CDL does not introduce an entirely new concept of digital literacy but rather underscores critical components that are often overlooked. Building upon this, Šorgo et al. (2017) identified four primary domains of CDL practices: evaluating the reliability of information sources and databases, employing effective search strategies, understanding intellectual property rights and ethical considerations, and applying heuristics and critical evaluation techniques.

Aligned with prior research, this study highlights the importance of criticality and agency in navigating digital spaces and utilising digital resources effectively. It emphasises the critical aspects of digital literacy, recognising the need for technological, linguistic, sociocultural, and critical skills in digital practices (Gouseti et al., 2023; Pötzsch, 2019; Tour et al., 2021).

LANGUAGE LEARNING ENGAGEMENT AND ACADEMIC PERFORMANCE

In comparison to the established concept of motivation in the realm of Second Language Acquisition (SLA) research, which often centres on mere intention, language learning engagement is more directly relevant to the actual learning process (Mercer & Dörnyei, 2020). Its significance in nurturing positive learning outcomes is widely acknowledged (Aubrey et al., 2022; Lambert et al., 2017) due to its holistic approach that integrates observable behaviours, emotional responses, and cognitive strategies to enrich the learning environment. Behavioural engagement encompasses visible actions such as active participation in classroom activities, dedicated effort in learning, and perseverance in tasks, even in the face of challenges. Emotional engagement involves positive

emotional reactions to classroom learning activities, including feelings of interest and enjoyment. Cognitive engagement revolves around the utilisation of advanced learning strategies, such as critical thinking and the application of diverse cognitive approaches.

Kahu (2013) illustrated how these strands of language learning engagement could be integrated, providing a conceptual framework that explains the antecedents and outcomes of language learning engagement. Central to this framework is the concept of students' engaged experiences. Previous studies have consistently unveiled a positive relationship between engagement and achievement, suggesting that students' engagement can enhance their performance in language classrooms (e.g., Dincer et al., 2019; Eerdemutu et al., 2023).

CRITICAL DIGITAL LITERACY IN LANGUAGE EDUCATION

Several studies have explored the intersection of digital literacy and CDL in the context of language education from various perspectives. To identify the contributing factors to CDL practices, Šorgo et al. (2017) examined the predictive power of digital nativeness attributes (e.g., the use of different ICT applications, ICT device ownership, ICT experiences, and internet confidence) on information literacy among Slovenian students. The study revealed that being a digital native does not necessarily imply being information literate. Murray et al. (2020) investigated language learners' agency and self-awareness regarding their use of the Internet and social media for learning. The findings highlighted the significance of raising awareness of online time management and self-management as part of developing CDL.

Within this line of research, Ertürk (2022) conducted a cross-sectional quantitative study on preservice EFL teachers' digital literacy levels and examined the impact of various factors on their CDL skills. The results indicated moderate levels of CDL among participants, with significant differences based on gender, grade, and online information access. However, the study did not find any associations between CDL levels and the amount of time spent online or preference for online or print reading. In addition, Indah et al. (2022) investigated how EFL students' engagement with technology, including social media, online networks, and various applications, influenced their digital literacy and critical thinking skills. The findings revealed a significant correlation between research competence and digital literacy. However, the study indicated that digital literacy does not automatically lead to improved critical thinking skills.

In the context of Saudi Arabia, Al-Seghayer (2020) conducted a study to assess the digital literacy proficiency of Saudi English majors in three key dimensions: information-search skills, critical evaluation skills, and strategy selection for effective information synthesis. The study's findings unveiled a deficiency in participants' ability to effectively utilise these digital literacy skills, with a noticeable disparity between self-perceived and actual performance. Moreover, the study recommended further exploration of the relationships among variables such as education levels and language proficiency to gain a more comprehensive understanding of their impact on digital literacy competencies.

The studies mentioned here offered valuable insights into the complex interplay between digital technologies, language education, the development of CDL among students, and the various contributing factors to CDL practices. Emphasising the need to define critical digital pedagogies tailored for EFL learners, the present study embarked on a meticulous exploration of CDL practices among Saudi EFL students. This study uses a framework drawn upon Watulak's (2016) CDL framework and Šorgo et al.'s (2017) delineation of four fundamental domains of CDL practices. This framework is designed to shed light on the intricate relationship between CDL skills and language learning engagement within online environments. This framework also integrates the

affective, cognitive, and behavioural facets of language learning engagement, influenced by Kahu's (2013) conceptual model.

The primary aim of this study is to enhance our understanding of the evolving digital landscape by exploring Saudi EFL undergraduates' perceptions and practices of CDL across four majors. Additionally, it aims to assess the influence of these practices on their engagement in language learning activities. Moreover, the study investigates the factors that either support or impede CDL practices. In particular, it seeks to address the following research questions:

1. What are the common digital language learning (CDL) practices among Saudi EFL undergraduate students, and how do these practices vary across gender, language proficiency levels, and academic majors?
2. How do Saudi EFL undergraduate students perceive the impact of engaging in CDL practices on their language learning experiences and outcomes?
3. What is the correlation between CDL practices of Saudi EFL undergraduates and their levels of engagement in language learning activities?
4. What factors affect the development and practice of CDL among Saudi EFL undergraduates?

RESEARCH METHOD

This study employed a mixed-methods approach with a descriptive cross-sectional survey design to explore Saudi EFL undergraduates' perceptions and practices of CDL, focusing on how these practices enhance their language learning engagement and its contributing factors. The approach provides a comprehensive understanding of the complex phenomena being studied. Structured questions generate quantifiable data that can be analysed across majors, whereas open-ended questions generate rich, in-depth quantitative insights that are then quantified via thematic frequency analysis.

RESEARCH CONTEXT AND PARTICIPANTS

This research was conducted in two large state universities in Saudi Arabia. These universities were selected because of their size, history, location, and history of implementing ICT for education. Ethical clearance was obtained from the respective Ethics Committees of each university. The study utilised a convenience sampling technique to gather data from 387 (221 females and 166 males) first-year EFL students pursuing majors primarily in natural sciences, medicine, and computer science. Their ages ranged from 18 to 22 years ($M = 18.90$, $SD = 1.442$). They were enrolled in EFL courses and demonstrated active use of modern technologies in their English studies. The participants' English language proficiency levels ranged from beginner (A1) to very advanced (C2), assessed through the Oxford Placement Test for English as a Foreign Language. Refer to Table 1 for detailed demographic profiles.

TABLE 1. Participants' demographic information

Demographic info variables		Frequency	Percentage (%)
Gender	Male	168	43.4%
	Female	219	56.6%
Major	Medicine	114	29.5%
	Natural Sciences	115	29.7%
	Computer sciences	158	40.8%
Language proficiency level	A1	4	1.03%
	A2	110	28.42%
	B1	113	29.19%
	B2	101	26.10%
	C1	51	13.18%
	C2	8	2.08%

DATA COLLECTION INSTRUMENTS

THE LANGUAGE PROFICIENCY TEST

The Oxford Quick Placement Test (version 1.1), consisting of 60 multiple-choice questions assessing reading, vocabulary, and grammar skills, was administered in class. On average, students took 35-45 minutes to complete the test. Scores between 1 and 10 equated to beginner level (breakthrough, A1), 11 to 17 indicated elementary proficiency (A2), 18 to 29 denoted lower intermediate (B1), 30 to 39 signified upper intermediate (B2), 40 to 47 represented advanced proficiency (C1), and 48 to 60 reflected very advanced levels (C2).

CRITICAL DIGITAL LITERACY AND LEARNING ENGAGEMENT QUESTIONNAIRE

The researcher developed a structured four-part cross-sectional questionnaire. The first part of the questionnaire focused on the demographic details of the participants, such as gender, age, and academic major. Information on the participants' technological background, in particular, device usage, internet browsing habits, self-assessed search competencies, and the frequency of technology use, was also collected. The second part presented 33 items distributed across three 5-point Likert scales. Scale One, with 15 items, assessed the participants' CDL practices across four key domains: evaluating information source reliability, utilising effective search strategies, understanding intellectual property and ethics, and applying critical evaluation techniques (Šorgo et al., 2017). Scale Two included ten items that measured participants' perceptions of their level of engagement in learning English, covering the three primary dimensions of language learning engagement outlined in Kahu's (2013) conceptual framework. Scale Three, comprising 12 items, aimed to capture the perceived influence of CDL on language learning engagement. The third part consisted of two open-ended questions probing into the key factors that facilitate or hinder the development and practice of CDL. The questionnaire's reliability was confirmed through Cronbach's alpha, with each scale demonstrating acceptable internal consistency ($\alpha = .71$, .80, and .79) and an overall reliability coefficient for the questionnaire at $\alpha = .81$, reflecting good reliability.

ADMINISTERING THE QUESTIONNAIRE

The questionnaire was administered in a classroom environment to safeguard privacy and ensure the confidentiality of the students' responses. Participants were allowed approximately 25 minutes to complete the questionnaire, with firm instructions to keep their responses confidential and to

avoid using any external resources. Before administering the questionnaire, participants received comprehensive information in Arabic about the study's main aim, the purpose of the questionnaire, and the expectations for their input on each part of the survey, ensuring they were fully informed and equipped to participate effectively. They were reminded that their participation was entirely voluntary and that they had the option to withdraw at any point without any negative consequences, reinforcing informed consent and their active engagement in the research process.

DATA ANALYSIS

First, the questionnaire data underwent a quantitative analysis using SPSS software (version 29). Descriptive statistics were utilised to summarise the survey responses and provide a comprehensive overview of the data regarding students' practices and perceptions. Mean scores and Pearson correlation analysis were used to answer research questions one to four. Additionally, the Kolmogorov-Smirnov and Shapiro-Wilk tests were employed to assess the normality of the data distribution. According to both tests, the data did not follow a normal distribution (P= .026). Consequently, non-parametric tests (Mann-Whitney U, regression, and Kruskal-Wallis) were employed to investigate the potential significant differences in CDL practices based on the participants' gender, language proficiency level, and academic major (Q5).

To address the fourth research question, responses to the two open-ended questions in the survey were analysed qualitatively. Responses were subjected to thematic content analysis to identify perceived challenges, barriers, and facilitators related to CDL practices. The responses were systematically coded using NVivo software to categorise the factors influencing CDL practice. This involved capturing frequently occurring keywords, sentiments, and viewpoints and organising them into themes, such as 'motivation' and 'syllabus and textbooks', and the frequency of each theme was calculated. These frequencies were calculated. Disagreements in coding were resolved through discussion and consensus between the primary researcher and an assistant. Inter-rater reliability was assessed, resulting in a high level of agreement on the identified themes and their frequency, as indicated by a Pearson correlation coefficient of 0.95. Table 2 presents examples of how participant comments were coded, ranging from single-coded responses to those with multiple codes, thus quantifying the qualitative data to highlight the primary factors influencing CDL practices among Saudi EFL undergraduates.

TABLE 2. Example responses to the open questions and corresponding codes within responses

Response	Code
a passionate teacher who inspires us to do this.	teacher
A syllabus that introduces a variety of viewpoints and supplements learning with digital resources enhances engagement with CDL.	syllabus
Critical analysis and self-confidence are vital for CDL development.	critical analysis, self-confidence
how far one is confident that he/she can critically analyse a text in English	confident, critically analysis
Project work that necessitates online search helps.	project work

RESULTS

QUANTITATIVE RESULTS

SAUDI EFL STUDENTS' CDL PRACTICES

Participants' responses to the CDL practices scale revealed diverse practices, yielding a mean score of 3.57 (SD = 1.25). This average score suggests a prevalent presence of high CDL practices among the participants despite the inclusion of some medium-level items, as depicted in Table 3.

To better interpret the findings, the mean scores were evaluated based on the Mean Range Level Interpretation: very low (1-1.80), low (1.81-2.60), average (2.61-3.40), high (3.41-4.20), and very high (4.21-5) levels. Notably, table 3 highlights that the items explicitly related to searching strategies received the highest scores, with item 4, 'Searching specialised digital sources', obtaining a high mean score of 4.02 (SD = 1.140). This searching practice was closely followed by using various relevant keywords (item 2; M = 3.89, SD = 1.256) and selecting digital resources that are both suitable for their needs and actively engaging them in language learning (item 14; M=3.89, SD=1.137). However, it is noteworthy that students did not appear to engage in online discussions or forums related to EFL to exchange ideas and perspectives, as indicated by the relatively medium mean score of 2.73 on item 5.

TABLE 3. CDL practice levels of the participants

N	Items	M	SD
1.	I compare different digital tools and online materials, among others, to select the one that aligns with my language learning aims.	3.59	1.267
2.	I use diverse and relevant keywords to find a wide range of beneficial online resources for language learning.	3.89	1.256
3.	Before using new digital tools and technologies, I make sure to read about them and understand their features and applications.	3.56	1.338
4.	I utilise specialised digital sources and reputable online platforms to enhance my language learning.	4.02	1.140
5.	I actively engage in online discussions or forums related to EFL to exchange ideas and perspectives.	2.73	1.484
6.	I synthesise information from multiple online texts, combining and integrating ideas to create a cohesive understanding.	3.80	1.182
7.	I critically evaluate the credibility and reliability of digital language learning resources (e.g. websites, Applications, and educational platforms).	3.74	1.245
8.	I assess online content for reliability, validity, and relevance in my information-seeking process.	3.14	1.267
9.	I actively seek out diverse perspectives and alternative viewpoints when engaging with digital resources.	3.42	1.266
10.	I critically analyse and question online information to gain deeper insights and perspectives.	3.27	1.246
11.	I am aware of the potential risks and challenges associated with using digital resources for language learning.	3.61	1.255
12.	I actively practice intellectual property and ethical considerations (respect copyright laws and properly attribute sources) while learning online.	3.74	1.180
13.	I employ strategies like rephrasing and summarisation to uphold academic integrity and avoid plagiarism while using online information.	3.58	1.211
14.	I engage in self-directed learning by selecting suitable digital resources that actively support and engage me in learning.	3.89	1.137
Overall		3.57	1.25

Analysing Differences in CDL Practices by Gender, Proficiency, And Major Among Students (RQ1).

Table 4 shows the results of the Mann-Whitney U test, indicating a slight difference in mean scores for CDL practices between males (x-males = 54.80) and females (x-females = 52.46). However, the p-value of .066 suggests that this difference is not statistically significant.

TABLE 4. Mann-Whitney U test results for gender variable

Gender	N	x	SD	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	Sig
Male	219	54.80	12.407	182.06	30585.50	16389.500	1.841	.066
Female	168	52.46	12.791	203.16	44492.50			

P<0.05

Differences in CDL based on Academic Majors. The results in Table 5 suggest no significant association between academic majors and CDL practices ($\chi^2 = 2.362$, $p = .307$), indicating that variations in CDL practices do not differ significantly based on participants' academic majors, as the p-value exceeds the conventional threshold of .05.

TABLE 5. Kruskal-Wallis test results for academic major variable

Variable	N	x	SD	Mean Rank	df	Chi-square	Sig
Medicine	114	54.59	12.765	202.09	2	2.362	.307
Natural Science	115	52.08	14.176	180.86			
Computer science	158	54.46	11.172	197.73			

P<0.05

Differences in CDL based on Language Proficiency levels. As shown in Table 6, the chi-square analysis results ($\chi^2 = 23.143$, $p < .001$) indicate a significant correlation between language proficiency levels and CDL practices.

TABLE 6. Kruskal-Wallis test results for language proficiency variable

Variable	N	x	SD	Mean Rank	df	Chi-square	Sig.
Beginner (A1)	4	53.75	14.221	173.25	5	23.143	.000
Elementary (A2)	110	49.70	12.413	154.14			
Lower Intermediate (B1)	113	54.21	12.920	200.77			
Upper-Intermediate (B2)	101	57.44	11.331	224.51			
Advanced (C1)	51	53.69	12.820	200.21			
Very Advanced (C2)	8	58.63	11.045	232.06			

PARTICIPANTS PERCEIVED THE IMPACT OF PRACTICING CDL ON LANGUAGE LEARNING

The results in Table 7 indicate students' overall highly positive views on the impact of CDL on language learning, with all items exceeding the median value of 3.41. Specifically, 'providing opportunities for self-directed learning and exploration' (M = 3.93, SD = 1.149) and 'enhancing language skills more effectively' (M = 3.87, SD = 1.139) received particularly high ratings.

TABLE 7. Perceived Impact of Practicing CDL on Language Learning (N=387)

Item		M	SD
1.	Engaging critically with digital resources improves understanding of the English language and its culture.	3.60	1.203
2.	Practising CDL broadens understanding and perspective on language learning.	3.69	1.173
3.	Practising CDL enables the formulation of relevant search terms.	3.80	1.163
4.	Practising CDL improves the ability to find reliable information for language learning.	3.82	1.096
5.	Practising CDL contributes to the development of effective study skills in language learning.	3.74	1.155
6.	Engaging critically with digital resources helps develop higher-order thinking skills.	3.70	1.175
7.	Practising CDL enables effective navigation of embedded hyperlinks and information representations, avoiding getting lost online.	3.65	1.139
8.	Practising CDL helps in practising language skills more effectively.	3.87	1.139
9.	Practising CDL increases engagement and motivation in language learning.	3.82	1.134
10.	Practising CDL enhances language proficiency levels.	3.63	1.232
11.	Practising CDL facilitates opportunities for self-directed learning and exploration.	3.93	1.149
12.	Practicing CDL enhances self-efficacy among language learners	3.78	1.191
Overall		3.75	1.16

CORRELATION BETWEEN STUDENTS' CDL PRACTICES AND ENGAGEMENT IN LEARNING ENGLISH AS A FOREIGN LANGUAGE (RQ3)

In addressing the third research question, the language learning engagement levels of the participants were initially assessed. As depicted in Table 8, the results revealed that the participants exhibited relatively high levels of language learning engagement (M = 3.62, SD = 1.26). The analysis in Table 8 further showed that the utilisation of online resources and applications received the highest rating (M = 3.96, SD = 1.106), followed by active participation in classroom language learning activities (M = 3.30, SD = 1.10). On the contrary, engaging in online discussions and forums received the lowest score (Item 4, M = 2.86, SD = 1.438).

TABLE 8. Engagement levels of the participants

N	Item	M	SD
1.	I am keen to successfully complete my English classroom activities and assignments promptly.	3.83	1.212
2.	I independently utilise online resources to enrich my overall language learning experience.	3.96	1.106
3.	I proactively seek opportunities to practice my English skills outside the classroom.	3.73	1.187
4.	I participate in language learning online discussions and forums.	2.86	1.438
5.	I set goals and monitor my progress in language learning.	3.33	1.379
6.	I actively seek feedback from my teacher regarding my learning progress.	3.53	1.257
7.	I enjoy participating in classroom language learning activities.	3.87	1.168
8.	I am enthusiastic about expanding my vocabulary and improving my grammar accuracy.	3.55	1.313
9.	I actively seek out new learning strategies to independently master the English language.	3.81	1.217
10.	I actively seek connections and collaborations with fellow English learners.	3.74	1.304
Overall		3.62	1.26

Subsequently, the correlation between the participants' language learning engagement levels and their CDL practices was computed. Table 9 reveals a significant positive correlation ($r = .807$, $p < .001$) between these two constructs in the context of language learning.

TABLE 9. Correlation between CDL practices and learning engagement

Correlation between CDL practices and engagement level	N	Pearson Correlation	. Sig.
	387	.807	.000

KEY FACTORS INFLUENCING CDL PRACTICES AMONG SAUDI EFL UNDERGRADUATES

Table 10 presents a range of factors reported by students that contribute to the development and practice of CDL skills. Notably, motivation and self-efficacy in language and critical analysis emerged as crucial factors. One student emphasised the importance of motivation, stating that it is "the primary and most significant factor". Another student highlighted the significance of self-efficacy in language skills for practising CDL, as it "promotes perseverance, readiness to face challenges, and the ability to evaluate contrasting information."

TABLE 10. Frequency count of supporting factors to CDL skill development and practice

N	Factors	Frequency
1.	Motivation	301
2.	Self-Efficacy in Language and Critical Analysis	289
3.	Teachers	231
4.	Syllabus and textbooks	197
5.	Collaborative learning and project work	123
6.	Formal instruction and training	72

Furthermore, students identified teachers, syllabi and textbooks as essential supporting factors. This is evident from their statements such as, 'An effective teacher who integrates critical thinking into language instruction helps students extend beyond mere memorisation of linguistic elements'. Another student remarked, 'A passionate teacher is key in encouraging students to practice CDL, especially when provided opportunities within the syllabus and textbook.' Additionally, students recognised the importance of being exposed to diverse perspectives and digital materials through the course content, as one student stated, 'Exposure to diverse perspectives and digital materials through the course supports the development of CDL'.

Students also highlighted the significance of collaborative online learning and project work as a supporting factor. One student emphasised the benefits of engaging with peers in online assignments and projects, stating, 'Engaging with peers in online assignments and projects involves collectively evaluating and synthesising diverse digital information sources through dialogue.' Other responses included expressions like 'working with peers online" and "participating in a group project'. Furthermore, students recognised formal instruction and training as important contributors to CDL skills, as evidenced by statements such as 'Direct instruction on navigating and critically evaluating digital content provides essential support' 'receiving training on these practices,' and "receiving instruction on how to critically analyse online content is vital.'

Regarding the perceived hindering factors to the development and practice of CDL, students identified four main factors (See Table 11). Among these factors, limited language proficiency was the most frequently reported (336 times). Students highlighted the challenges they face due to advanced vocabulary, complex grammar structures, and difficulties in understanding cultural differences. One student stated, 'Low language proficiency stops me from understanding

the content, let alone evaluating it.' This suggests limited language skills can impede comprehension, leaving students unable to critically evaluate content.

Additionally, according to most students, the educational focus that prioritises rote learning over critical thinking hinders the development of CDL. One student expressed this by stating, 'Our classes focus on answering textbook exercises on vocabulary and grammar.' Another student mentioned, "no space for critical thinking and analysis in the syllabus." Another factor identified by students is the limited scope for autonomous learning, as they perceive a lack of chances to engage in self-directed learning due to the strong emphasis on textbook content to attain high grades. As one student remarked, 'Restricted to the textbook, we have limited scope for exploring digital resources.' Lastly, some students highlighted sociocultural norms in the Saudi context as a contributing factor. They noted that these norms may discourage critical questioning or challenging of information, as it can be seen as disrespectful or inappropriate. As one student explained, 'We are not used to arguing,' while another wrote, 'We're taught to trust only teachers and assigned textbooks," and a third student stated, 'We typically consider teacher is the expert.'

TABLE 11. Frequency count of hindering factors to CDL skill development and practice

N	Factors	Frequency
1.	Limited Language Proficiency	336
2.	Educational Focus	274
3.	Limited Scope for Autonomous Learning	251
4.	Sociocultural norms	166

***Note:** The frequencies in Tables 10 and 11 represent how often specific factors were mentioned by participants, offering a quantitative measure of their prevalence in shaping CDL practices among Saudi EFL undergraduates. While some redundancies may exist, each count reflects a unique instance where a factor was emphasised, aiding in understanding the influences on CDL skill development.*

DISCUSSION

CDL PRACTICES AND LANGUAGE LEARNING ENGAGEMENT AMONG SAUDI EFL UNDERGRADUATES

The study findings showed that Saudi EFL undergraduates in all three academic majors demonstrated an overall high level of CDL practices, with the highest scores observed in items specifically related to searching strategies. Students generally hold positive views regarding the impact of CDL on their language learning experiences. They perceive CDL as providing opportunities for self-directed learning, enhancing language skills more effectively, and benefiting from accessing reliable information, thereby fostering motivation and engagement in language learning. Moreover, the results revealed a significant positive correlation between students' CDL practices and their level of engagement in learning English. These results support the notion that students' inherent familiarity and comfort with digital technologies drive their active engagement in CDL practices, which is influenced by their motivation and passion to use online sources as digital natives in the digital age (Prensky, 2001). Results of the open-ended items of the questionnaire further reinforce this anticipation, as motivation emerged as the most frequently reported supporting factor for CDL practices among the students. This suggests that while students may possess a general fluency in using digital technologies, they specifically recognise the value of practising CDL in enhancing their language learning experiences.

However, it is important to note that not all studies align with the notion of digital natives automatically possessing advanced digital skills. Contrasting findings from previous research (Caverly et al., 2019; Juhaňák et al., 2019) suggest that while digital natives may possess a general fluency in using digital technologies, they may encounter difficulties in transferring and applying these skills to academic contexts, emphasising the need for further investigation and analysis of specific CDL practices among EFL students. Šorgo et al. (2017) stressed the need for hands-on, minds-on activities based on information literacy standards to promote digital literacy. Without these, students may lack critical evaluation skills, leading to misinformed decisions, feeling overwhelmed by information, and negatively impacting learning. Furthermore, Ertürk (2022) also emphasises the need for EFL students to continuously update their technology skills and knowledge to succeed post-graduation as proficient digital consumers in response to emerging technological advancements. Therefore, while Saudi EFL undergraduates in this study exhibited a high level of CDL practices, it is important to recognise the ongoing need for students to adapt and update their digital skills to remain competent in an ever-evolving digital landscape.

Despite the overall high level of practising digital literacy skills observed among students, the study revealed a contrasting result concerning their limited engagement in online discussions or forums related to EFL. This finding suggests a tendency to rely primarily on search practices that align with their sociocultural context, potentially driven by hesitations to participate and a desire to avoid conflicts or violating sociocultural norms. This avoidance may also be influenced by limited language proficiency levels, as identified by students' responses to open-ended items, where language proficiency emerged as the most frequently mentioned hindrance to the development and practice of CDL. These findings underscore the socially and culturally contextualised nature of digital literacies, as emphasised by Liu (2023). Moreover, Kennedy et al. (2008) argue that students' utilisation of ICT can be influenced by their cultural or ethnic background. Liu's (2023) ethnographic case study of a Chinese EFL learner in a transcultural and transnational context reveals that CDL is characterised by interrogating technology's affordances and constraints, negotiating digital capital, and taking agentive action to promote equitable communication. In the subsequent discussion on the influence of sociocultural norms, the specific impact of Saudi sociocultural norms on students' digital practices and language learning engagement will be further explored.

EFFECTS OF DEMOGRAPHIC VARIABLES ON CDL PRACTICES

Regarding the effects of demographic variables on students' CDL practices, the analysis revealed that only language proficiency levels demonstrated a significant impact on CDL levels. While there was a marginal difference in mean scores, with males slightly outscoring females in CDL practices, the difference was not statistically significant. This finding contradicts previous studies, such as the research conducted by Ertürk (2022) on preservice EFL teachers, which demonstrated a significant difference between male and female students in terms of digital literacy levels, favouring the male group. Conversely, Esteve-Mon et al's study (2020) indicated that women were perceived as less digitally competent than men, particularly in terms of technology. Given these varying findings, further exploration is necessary to gain a deeper understanding of the gender dynamics in CDL practices among Saudi EFL undergraduates.

Contrary to expectations, no significant association was found between academic majors (Medicine, Natural Science, and Computer Science) and CDL practices. This result contradicts the findings of Gouseti et al. (2023), which emphasised how CDL practices can be influenced by

demographic factors, including academic majors. However, upon examining the interview findings, certain sub-dimensions of CDL were identified as prominently featured in participants' discussions across all three academic majors, namely Digital media use and Online inquiry process. Conversely, the subdimension of source validation and verification was found to be less prominent across the three major academic groups. These findings highlight the need for further investigation to explore the potential variations in CDL practices within different academic majors and the factors that contribute to these differences.

Consistent with prior research and in line with Al-Seghayer's (2020) findings, the study revealed that students' practice of CDL varied based on their language proficiency levels. Al-Seghayer (2020) attributed the insufficient digital literacy skills among Saudi EFL students to three interrelated factors, including English language proficiency. He emphasised that the level of English language proficiency played a significant role in determining students' ability to effectively perform online tasks involving information searches, critical evaluation, and information synthesis. This finding aligns with the responses provided by students in the open-ended items regarding the factors hindering the development and practice of CDL, as limited language proficiency was the most frequently mentioned obstacle (mentioned 336 times). To address these challenges, it is crucial to implement targeted interventions and support mechanisms that enhance both language proficiency and digital literacy skills among Saudi EFL undergraduates.

FACTORS INFLUENCING THE DEVELOPMENT AND PRACTICE OF CDL AMONG SAUDI EFL UNDERGRADUATES

The study revealed several pivotal factors that support the development and practice of CDL among Saudi EFL undergraduates, including motivation, self-efficacy in language and critical analysis, teachers, syllabi and textbooks, collaborative learning and project work, and formal instruction and training. Notably, the findings suggest that students' engagement with digital resources to improve their English literacy is often self-motivated, as they perceive formal language instruction in college classrooms to be insufficient. This self-motivation encourages them to explore how information flows and is enabled, filtered, and structured in the non-neutral digital world. To surpass the limitations of traditional textbooks, students emphasise the need for autonomous learning and the importance of seeking information from multiple sources. Han and Reinhardt (2022) argue that developing self-confidence and digital empowerment are crucial aspects of practising critical literacy in digital spaces.

On the other hand, the study also identified hindering factors reported by students, including limited language proficiency, the educational focus on rote learning rather than critical thinking, limited opportunities for autonomous learning, and sociocultural norms. These factors align with prior research in the Saudi context, which has illuminated the challenges faced by EFL students in learning English, including constrained self-directed learning opportunities and teacher-centred classroom approaches primarily focused on exam-oriented outcomes (Abdelhalim, 2022; Al-Seghayer, 2014).

The influence of sociocultural norms in Saudi Arabia on students' inclination to critically question and challenge information is noteworthy. These norms often discourage practices that may be perceived as disrespectful or inappropriate. Rooted in the conservative culture of the country, these norms prioritise the importance of respecting the beliefs of others (Al-Seghayer, 2014). Consequently, students may exhibit a reduced inclination to challenge or question

information, even when it is erroneous or misleading. The students' feedback indicates a prevailing educational mindset where they are not accustomed to engaging in arguments in class, heavily rely on teachers and assigned textbooks, and view the teacher as the ultimate authority. Addressing these sociocultural norms becomes essential for fostering a culture of open inquiry and promoting critical thinking, allowing students to actively engage with and question information in the learning process (Abdelhalim & Aldaghri, 2024; Al Zahrani & Elyas, 2017).

In this context, Liu (2023) emphasises the need for teachers to dismantle long-held ideologies about teaching and learning English, recognising that learners come from diverse backgrounds, experiences, and histories. Additionally, cultural and socioeconomic factors play a significant role in blurring the boundaries between informal (e.g., family, peers) and formal educational divisions. Adopting sociocultural perspectives, Watulak (2016) highlighted that an important part of CDL is understanding the social and cultural norms surrounding technology use, as well as the practices that are valued within those norms. Watulak added that we imbue our technologies with particular values and meanings as tools placed inside practices, which may change based on context and use. CDL has been developed based on this understanding of digital literacy. In summary, this study provides comprehensive insights into the perceptions and practices of CDL among Saudi EFL undergraduates. It highlights the influence of language proficiency levels and identifies key factors that either support or hinder the development and practice of CDL skills across different academic majors.

CONCLUSION

Based on the findings of this study, it can be concluded that Saudi EFL undergraduates exhibit an overall high level of CDL practices, which positively impact their engagement in learning English as a foreign language. The students' motivation and familiarity with digital technologies serve as driving forces behind their active engagement in CDL practices. However, some factors, including limited language proficiency, educational focus on rote learning, lack of autonomous learning opportunities, and sociocultural norms, hinder the development and practice of CDL skills among students.

Pedagogically, these findings underscore the need for educational institutions and instructors to acknowledge and leverage students' motivation and digital literacy skills in language learning contexts. By leveraging students' motivation and familiarity with digital technologies, instructors can empower Saudi EFL undergraduates to navigate the digital landscape effectively and engage in critical inquiry and information evaluation. Incorporating CDL practices into the curriculum can enhance students' self-directed learning, language skills, and access to reliable information. Additionally, addressing the language proficiency gap through targeted interventions and providing opportunities for autonomous learning can further enhance students' CDL skills and language learning engagement.

This study acknowledges some limitations. Firstly, the study focused on Saudi EFL undergraduates from specific academic majors, limiting the generalizability of the findings. Future research should include a more diverse sample to capture variations across disciplines. Secondly, the reliance on self-report measures and the cross-sectional nature of the study may have introduced response biases and limited the ability to establish causal relationships. Longitudinal studies and mixed-methods approaches could provide more robust insights into the development and impact of CDL practices over time. Additionally, future research can investigate the actual

practices of Saudi EFL undergraduates in CDL through hands-on activities, such as analysing their online search activities, rather than relying solely on self-reporting questionnaires. This approach would provide more objective and concrete evidence of students' CDL skills and allow for a deeper understanding of their information evaluation and critical inquiry abilities in real-world digital contexts.

ACKNOWLEDGMENT

Sincere gratitude is extended to the participants of this study, whose valuable contributions have significantly enhanced the understanding of critical digital literacy practices among Saudi EFL undergraduates and their impact on learning engagement. The support of individuals and institutions involved in facilitating the data collection process is also acknowledged.

REFERENCES

Abdelhalim, S. (2022). An investigation into English majors' self-regulated writing strategies in an online learning context. *Language Teaching Research*. https://doi.org/10.1177/13621688221100296

Abdelhalim, S., & Aldaghri, A. (2024). Creating Culture of Thinking in Language Classrooms: An Interpretive Inquiry into Saudi University EFL Instructors' Beliefs and Practices. *Journal of Language Teaching and Research (JLTR), 15*(2). https://doi.org/10.17507/jltr.1502.08

Aguilera, E., & Pandya, J. (2021). Critical literacies in a digital age: current and future issues, *Pedagogies: An International Journal, 16*(2), 103-110, DOI: 10.1080/1554480X.2021.1914059

Al-Hoorie, A. H. (2018). The L2 motivational self-system: A meta-analysis. *Studies in Second Language Learning and Teaching, 8*(4), 721–754. https://doi.org/10.14746/ ssllt.2018.8.4.2

Al-Seghayer, K. (2014). The four most common constraints affecting English teaching in Saudi Arabia. *International Journal of English Linguistics*, 4(5), 17–26. http://dx.doi.org/10.5539/ijel.v4n5p17

Al Zahrani, B., & Elyas, T. (2017). The Implementation of Critical Thinking in a Saudi EFL Context: Challenges and Opportunities. *Indonesian Journal of English Language Teaching and Applied Linguistics, 1* (2), 133-141. https://doi.org/10.21093/ijeltal.v1i2.21

Aubrey, S., King, J., & Almukhaild, H. (2022). Language Learner Engagement During Speaking Tasks: A Longitudinal Study. *RELC Journal, 53*(3), 519-533. https://doi.org/10.1177/0033688220945418

Bawden, D. (2008). 'Origins and concepts of digital literacy'. In Lankshear, C. &. Knobel, M. (eds.). *Digital Literacies: Concepts, Policies and Practices*. New York, NY: Peter Lang.

Brocca, N., Masia, V., & Garassino, D. (2024). Empowering critical digital literacy in EFL: Teachers' evaluation of didactic materials involving the recognition of presupposed information. *Language Teaching Research*, 0(0). https://doi.org/10.1177/13621688241235019

Buckingham, D. (2007). Media education goes digital: An introduction. *Learning, Media and Technology, 32*(2), 111–119. https://doi.org/10.1080/17439880701343006

Caverly, D., Payne, E., Castillo, A., Sarker, A., Threadgill, E., & West, D. (2019). Identifying Digital Literacies to Build Academic Literacies, *Journal of College Reading and Learning, 49*(3), 170-205, DOI:10.1080/10790195.2019.1638218

Cladis, A. (2020). A shifting paradigm: An evaluation of the pervasive effects of digital technologies on language expression, creativity, critical thinking, *E-Learning and Digital Media, 17*(5) 341–364. http://dx.doi.org/10.1177/2042753017752583

Dewaele, J. M., & Li, C. (2021). Teacher enthusiasm and students' social-behavioral learning engagement: The mediating role of student enjoyment and boredom in Chinese EFL classes. *Language Teaching Research, 25*(6), 922–945. https://doi.org/10.1177/13621688211014538

Dincer, A., Yeşilyurt, S., Noels, K. A., & Vargas Lascano, D. I. (2019). Self-Determination and Classroom Engagement of EFL Learners: A Mixed-Methods Study of the Self-System Model of Motivational Development. *Sage Open*, *9*(2). https://doi.org/10.1177/2158244019853913

Dörnyei, Z. (2019). Towards a better understanding of the L2 Learning Experience, the Cinderella of the L2 motivational self-system. *Studies in Second Language Learning and Teaching, 9*(1), 21e32. https://doi.org/10.14746/ssllt.2019.9.1.2.

Eerdemutu, L., Dewaele, J., & Wang, J. (2023). Developing a short language classroom engagement scale (LCES) and linking it with needs satisfaction and achievement. *System, 120*, 103189. https://doi.org/10.1016/j.system.2023.103189

Ertürk, G. (2022). Investigation of Preservice EFL Teacher's Digital Literacy Levels and Digital Literacy Skills. *Educational Research Quarterly, 46*(1). 3-32.

Esteve-Mon, F. M., Llopis, M. Ángeles, & Adell-Segura, J. (2020). Digital Competence and Computational Thinking of Student Teachers. *International Journal of Emerging Technologies in Learning* (iJET), 15(02), 29–41. https://doi.org/10.3991/ijet.v15i02.11588

Garcia, A., Mirra, N., Morrell, E., Martinez, A., & Scorza, D. (2015). The Council of Youth Research: Critical Literacy and Civic Agency in the Digital Age, *Reading & Writing Quarterly, 31*(2), 151-167, https://doi.org/10.1080/10573569.2014.962203

Golden, N. A. (2017). "Critical Digital Literacies across Scales and Beneath the Screen." *Educational Media International, 54* (4): 373–387. https://doi.org/10.1080/09523987.2017.1391523.

Gouseti, A., Lakkala, M., Raffaghelli, J., Ranieri, M., Roffi, A., & Ilomäki, L. (2023). Exploring teachers' perceptions of critical digital literacies and how these are manifested in their teaching practices. *Educational Review*. https://doi.org/10.1080/00131911.2022.2159933

Hafner, C. A., Chik, A., & Jones, R. H. (2015). Digital literacies and language learning. *Language Learning & Technology, 19*, 1–7.

Hamat, A., & Abu Hassan, H. (2019). Use of Social Media for Informal Language Learning by Malaysian University Students. 3L: The Southeast Asian Journal of English Language Studies, 25(4), 68 – 83. http://doi.org/10.17576/3L-2019-2504-0568

Han, Y., & Reinhardt, J. (2022). Autonomy in the Digital Wilds: Agency, Competence, and Self-Efficacy in the Development of L2 Digital Identities. *TESOL Quarterly, 56* (3): 985–1015. https://doi.org/10.1002/tesq.3142.

Hatlevik, O. E. (2017). Examining the relationship between teachers' self-efficacy, their digital competence, strategies to evaluate information, and use of ICT at school. *Scandinavian Journal of Educational Research*, *61*(5), 555–567. https://doi.org/10.1080/00313831.2016.1172501

Hauck, M. (2019). Virtual exchange for (critical) digital literacy skills development. *European Journal of Language Policy*, 11(2): 187–210. https://doi.org/10.3828/ejlp.2019.12

Hiver, P., Mercer, S., & Al-Hoorie, A. H. (Eds.). (2020). *Student engagement in the language classroom*. Bristol, England: Multilingual Matters.

Indah, R. N., Budhiningrum, A. S., & Afifi, N. (2022). The research competence, critical thinking skills and digital literacy of Indonesian EFL students. *Journal of Language Teaching and Research*, *13*(2), 315-324.

Jones, R., & Hafner, C. (2021). *Understanding Digital Literacies: A Practical Introduction*. 2nd ed. New York: Routledge. https://doi.org/10.4324/9781003177647

Jones, R. H. (2021). "The Text Is Reading You: Teaching Language in the Age of the Algorithm." *Linguistics and Education,* 62:100750. https://doi.org/10.1016/j.linged.2019.100750.

Juhaňák, L., Zounek, J., Záleská, K., Bárta, O., & Vlčková, K. (2019). The relationship between the age at first computer use and students' perceived competence and autonomy in ICT usage: A mediation analysis. *Computers and Education, 141*(1),103614.

Kahu, E. (2013). Framing Student Engagement in Higher Education. *Studies in Higher Education,* 38, 758-773. https://doi.org/10.1080/03075079.2011.598505

Kang, S., & Kim, Y. (2021). Examining the quality of mobile-assisted, video-making task outcomes: The role of proficiency, narrative ability, digital literacy, and motivation. *Language Teaching Research*, 0(0). https://doi.org/10.1177/13621688211047984

Kang, S., & Kim, Y. (2023). EFL adolescent learners' perceptions of digital multimodal composing tasks and task outcomes: A longitudinal study. *International Journal of Applied Linguistics, 33*(2). https://doi-org.sdl.idm.oclc.org/10.1111/ijal.12473

Kennedy, G., Krause, K.-L., Judd, T., Churchward, A., & Gray, K. (2008). First-year students' experiences with technology: Are they really digital natives? *Australasian Journal of Educational Technology, 24*(1), 108-122.

Knobel, M., & Lankshear, C. (2018). *Researching New Literacies: Design, Theory, and Data in Sociocultural Investigation.* New York: Peter Lang Publishing Group. https://doi.org/10.3726/978-1-4539-1649-0

Lambert, C., Philp, J., & Nakamura, S. (2017). Learner-generated content and engagement in second language task performance. *Language Teaching Research, 21*, 665e680. https://doi.org/10.1177/1362168816683559.

Leu, D., Kinzer, C., Coiro, J., Castek, J., & Henry, L. (2017). New literacies: A dual-level theory of the changing nature of literacy, instruction, and assessment. *Journal of Education, 197*(2), 1–18. https://doi.org/10.1177/002205741719700202

Liu, G. (2023). Interrogating critical digital literacies in the Chinese context: insights from an ethnographic case study, *Journal of Multilingual and Multicultural Development*, https://doi.org/10.1080/01434632.2023.2241859

Marsh, J. (2019). Researching the digital literacy and multimodal practices of young children: A European agenda for change. In Erstad, O., Flewitt, R., Kümmerling-Meibauer, B., & Pereira, Í.S. (Eds.). (2019). *The Routledge Handbook of Digital Literacies in Early Childhood* (1st ed., pp. 17-28). Routledge. https://doi.org/10.4324/9780203730638

McDougall, J., Readman, M., & Wilkinson, P. (2018). The uses of (digital) literacy. *Learning, Media and Technology, 43*(3), 263–279. https://doi.org/10.1080/17439884.2018.1462206

Mercer, S., & Dörnyei, Z. (2020). *Engaging students in contemporary classrooms*. Cambridge: Cambridge University Press.

Mishra, C. (2019). Faculty Perceptions of Digital Information Literacy (DIL) at an Indian University: An Exploratory Study, *New Review of Academic Librarianship, 25*(1), 76-94, https://doi.org/10.1080/13614533.2018.1517102

Mulcahy, C. M. (2008). "Chapter 1: The Tangled Web We Weave: Critical Literacy and Critical Thinking." *Counterpoints 326*: 15–27.

Murray, L., Giralt, M., & Benini, S. (2020). Extending digital literacies: Proposing an agentive literacy to tackle the problems of distractive technologies in language learning. *ReCALL, 32*(3): 250–271. https://doi.org/10.1017/S0958344020000130

Nazanin Dehdary. (2022). On the Path Towards a Critical Literacy-Based Pedagogy in Oman, *Changing English, 29*(3), 297-309. https://doi.org/10.1080/1358684X.2022.2069546

O'Brien, D., & Scharber, C. (2008). Digital literacies go to school: Potholes and possibilities. *Journal of Adolescent & Adult Literacy,* 52, 66–68.

Pangrazio, L. (2016). Reconceptualising critical digital literacy. *Discourse: Studies in the Cultural Politics of Education, 37*(2), 163–174. https://doi.org/10.1080/01596306.2014.942836

Papi, M., & Hiver, P. (2020). Language learning motivation as a complex dynamic system: A global perspective of truth, control, and value. *The Modern Language Journal, 104*(1), 209e232. https://doi.org/10.1111/modl.12624.

Paul, R., & Elder, L. (2005). "Critical Thinking and the Art of Substantive Writing, Part I." *Journal of Developmental Education 29* (1), 40-41.

Pötzsch, H. (2019). Critical digital literacy: Technology in education beyond issues of user competence and labour-market qualifications. *Journal for a Global Sustainable Information Society, 17*(2), 221–240. https://doi.org/10.31269/triplec.v17i2.1093

Prensky, M. (2001). "Digital Natives, Digital Immigrants Part 1", *On the Horizon*, 9 (5), 1-6. https://doi.org/10.1108/10748120110424816

Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion, 28*, 147-169. doi:10.1023/B:MOEM.0000032312.95499.6f

Sauro, S., & Zourou, K. (2019). "What Are the Digital Wilds?" *Language Learning & Technology, 23*(1), 1–7. https://doi.org/10125/44666.

Šorgo, A., Bartol, T., Dolničar, D., & Podgornik, B. B. (2017). Attributes of digital natives as predictors of information literacy in higher education. *British Journal of Educational Technology, 48*(3), 749–767. doi:10.1111/bjet.12451

Tour, E., Creely, E., & Waterhouse, P. (2021). "It's a black hole…": Exploring teachers' narratives and practices for digital literacies in the adult EAL context. *Adult Education Quarterly 71*,. https://doi.org/10.1177/0741713621991516

Watulak, S. (2016). Reflection in action: using inquiry groups to explore critical digital literacy with preservice teachers, *Educational Action Research, 24*(4), 503-518, https://doi.org/10.1080/09650792.2015.1106957

Weber, H., Hillmert, S., & Rott, K. (2018). Can digital information literacy among undergraduates be improved? Evidence from an experimental study, *Teaching in Higher Education, 23*(8), 909-926. https://doi.org/10.1080/13562517.2018.1449740

Zhou, Y., & Wei, M. (2018). Strategies in technology-enhanced language learning, Studies in *Second Language Learning and Teaching, 8*(2), https://doi.org/10.14746/ssllt.2018.8.2.13