Investigating Students' Reading Strategies and Reading Comprehension Through Digital Literacy Environment

by Asdar Asdar

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ARTICLE INFO	ABSTRACT
	Educational technology provides students the chance to learn online and develop independent learners. The availability of digital learning materials is an attempt to realize exactly a widespread learning strategy. This study aimed to investigate the effect of the impact of providing detailed instructions on reading strategies and reading comprehension through a digital literacy environment (DLE) for university students. The research employed a qualitative approach through survey data, and it was conducted in an undergraduate education department at the State University of Makassar, which had 43 students. The findings indicate that students generally acknowledge the effectiveness of digital technologies, such as a private Facebook group and WhatsApp, in providing inclusive and secure platforms for student involvement. These platforms create a comfortable environment for students to share their thoughts. The students were motivated when using digital tools like e-books, interactive reading platforms, and multimedia resource. It can be concluded that discussion groups on Facebook and WhatsApp offer comprehensive, confidential forums for students to improve their digital reading comprehension.

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1. INTRODUCTION

In a digital environment, students are frequently exposed to an overwhelming amount of information, some of which may be inaccurate or biased. Developing the ability to critically evaluate the credibility and reliability of digital content is a significant challenge for many students. Moreover, the prevalence of digital reading among young people has been steadily rising in the age of information and communication technology (ICT) (Kozina & Metljak, 2022; Agasisti et al., 2023). With the increasing use of dynamic text types and the evolution of innovative reading practices, students must acquire specialized skills to effectively navigate and comprehend content on digital devices (Hu & Yu, 2021). Therefore, it is crucial for educational systems to prioritize the development of digital literacy skills, ensuring that students are equipped to discern credible information and engage in meaningful, informed reading in the digital age.

Therefore, in understanding the basic principles of terminology and concepts (Coiro, 2021), The main objective of a reading activity is to obtain precise information or facts, understand the sequence

or organisational framework of the text, and evaluate and classify the acquired knowledge (Tong et al., 2018; Amal et al., 2022). The integration of information and communication technology (ICT) in classrooms is an essential and urgent reality in the digital era (Delgado et al., 2018; Mulyana & Maylawati, 2024).

Reading promotes the construction of comprehension, starting from the arrangement of letters into words, phrases, and ultimately, sentences. The utilisation of ICT in foreign language education has revolutionised the practice of reading, and online text reading necessitates the adoption of novel methodologies (Sukmawati et al., 2023; Sujarwo et al., 2024). Proficiency in reading is of utmost importance for EFL learners as it is the key skill that enables them to excel academically and make faster progress in other areas of language acquisition.

Therefore, it is widely recognised that one of the main methods to enhance reading comprehension is by effectively utilising reading strategies. The increasing utilisation of the internet has led to online reading being a crucial resource for EFL readers, as it provides them with authentic language input. Presently, the lives of EFL readers are more dependent on the Internet (online) (Adelson & Keen, 2023).

Readers in a web-based setting must possess knowledge of the website's structure and the search engine to comprehend and interpret the content. Digital literacy encompasses the ability to access computer resources on a network and evaluate and utilize information from many sources in different formats when provided through computers. The unique features of reading in a digital context encompass hyperlinks, search functionalities, and access to knowledge. Proficiency in these fundamental abilities is crucial for successfully using the Internet. Metacognitive techniques, which are internal psychological processes, are essential for self-regulated learning and significantly influence readers' reading comprehension (Leino, 2014).

Reading is considered an essential skill for acquiring proficiency in a second language and attaining academic excellence. Strategy-based instruction is a method used to teach reading (Wang & Nurhadi, 2020). Recent study has focused on analysing the effects of reading strategy instruction, primarily investigating its impact on reading comprehension and the utilisation of reading strategies (Li et al., 2022).

The importance of reading comprehension is growing significantly in the current educational context (Sasabone et al., 2023;Samangun & Rosmayanti, 2024). Hence, students in an academic setting would find it difficult to comprehend materials without employing successful strategies. Due to significant advancements in technology (Imran et al., 2022), the act of reading has changed from traditional paper-based formats to digital media (Yaghi, 2019). Readers employ diverse reading methods depending on the specific reading tasks that do, which therefore have unique effects on their reading experiences in both physical and digital media (Wu, 2014).

The issue of digital literacy has received significant attention and is widely recognized as crucial for both the general public and governments, particularly in relation to youths. Due to digital media, youths today have the ability to obtain information and form public opinions in decentralized ways (Syamsuri & Bancong, 2022). People with advanced digital literacy skills will possess a greater capacity to assess information and discern truth from false (Siriwattanarat et al., 2024). The understanding of digital dynamic texts is influenced by elements that also impact conventional or immobile texts, such as overall verbal proficiency and prior knowledge in the subject area.

Today, due to the emergence of new internet-based media, the audience is fragmented, resulting in the reduction of mass culture into distinct individual cultures. The pervasive presence and rapid spread of social media throughout modern life is quite astounding. Facebook group and WhatsApp provide inclusive and safe platforms for students to engage in reading comprehension and apply reading methods.

In contemporary times, mobile phones have become an indispensable component of our everyday existence. Each everyone possesses their own unique mobile device. The advancement of mobile phones has experienced rapid growth since 1995. Smartphones provide multiple functions, including making calls, sending messages, playing music, watching movies, accessing the internet, and using

various programs (Emenike-Azunwo & Uchechi, 2020). Various operating systems, such as Windows Mobile, iOS, Symbian, and Android, have been developed to enhance the capabilities of mobile phones. Android is gaining increasing consumer attention and a multitude of Android applications are now under development. The applications WhatsApp (WA), Skype, and GO SMS Pro are the most popular messenger applications among college students (Gangneux, 2021).

The Facebook application is widespread on nearly every mobile device, and currently, the majority of students in Indonesia possess a Facebook account. The majority of students primarily utilize their FB accounts for social enjoyment, with only a small number using it for academic learning goals. A significant number of students held the mistaken belief that Facebook was primarily intended for social interactions rather than official educational goals, although it was occasionally utilized informally for learning activities (Muhammad & Annamalai, 2022).

Proficiency in language and prior knowledge of a certain subject enable students to read with ease and precision. This also helps them to access the necessary background information to construct a comprehensive understanding of the text, whether it is in conventional or digital format (online) (Mohammadi et al., 2020). The aim of digital literacy is to promote the proficient and discerning utilization of information and communication technology (ICT) in order to actively engage in a knowledge-based society (Siddiq & Scherer, 2019).

In an academic context, reading is considered a vital skill that significantly influences students' academic performance, especially in a particular field of study. Reading strategies are intellectual pursuits that improve skills in reading techniques. Active participation in reading is crucial for promoting reading engagement among students. This entails establishing explicit objectives, closely evaluating their advancement towards these objectives and generating forecasts regarding their understanding of the text they are reading (Mohammadi et al., 2020).

Some previous studies conveyed that the analysis of students' reading comprehension indicated that the teaching in reading strategies had a considerable favourable effect on students' reading comprehension (Li et al., 2022). Numerous studies have tried to develop taxonomies of metacognitive reading strategies to improve reading comprehension (Muhid et al., 2020). In the context of EFL, especially in South Sulawesi, Indonesia, teachers frequently come across challenges regarding students' reading strategies. Consequently, it was determined that students presented inadequate reading techniques, evident in their average score of 5 in reading skill acquisition. Additionally, students shown low desire and struggled to comprehend the reading material. These problems primarily affect children who have not attained standard scores. The observations revealed that the reading skills achieved an average score of 58, which falls below the Minimum Completeness Criteria score of 75%. Support should be offered to address students' unresolved learning challenges in order to proactively address potential issues. Reading techniques must be used effectively if they are to improve reading comprehension (Nuong et al., 2022), and more successful readers use reading strategies than less successful readers do (Pardede, 2022).

From several previous research recommendations, as reading comprehension is crucial for students, online reading strategies have become a crucial issue in EFL learning. In order to fill this theoretical gap, it is found that the aspects of online reading need to be investigated further. For that reason, the researchers intended to investigate how skills developed in digital reading environments transfer to other areas of learning and whether they enhance or hinder traditional literacy skills. through three aspects, include reading comprehension and literacy reading in this era. and the theoretical framework adopted for the study.

In the contemporary educational context, online reading comprehension is becoming increasingly important. As a result, without effective procedures, students in an academic setting would struggle to understand online information. Furthermore, the research objectives are to investigate the impact of providing detailed instructions on reading strategies and comprehension through a digital literacy environment (DLE) for university students in South Sulawesi, Indonesia.

2. METHODS

The research employed a qualitative approach (Creswell, 2013; Richards & Hemphill, 2018). A qualitative survey combines elements of qualitative research methods with the structure of a survey to gather in-depth insights from participants. Unlike traditional surveys, which often use quantitative methods to collect numerical data, a qualitative survey focuses on obtaining detailed, descriptive information about participants' experiences, opinions, and attitude.

This study was conducted in an undergraduate education program in Indonesia at a state institution in Makassar. The original authors taught a course for one semester. The 43 enrolled students as participants can be characterized as avid users of prominent social media networks. For example, an initial poll conducted at the start of the course revealed that all students as participants have active Facebook profiles and were actively engaged on the platform. Each individual possessed digital technology equipment, such as laptops and cell phones, which allowed them to connect to a wireless network and retrieve digital information and data.

This research aims to explore students' digital literacy patterns by examining the relationship between internet usage behavior, reading habits, and reading comprehension. The study employs a survey method with a qualitative approach, following a four-stage research procedure. In the exploration stage, the researcher reviews the general context and selects participants, focusing on fourth-semester students from various study programs as the primary data source. The second stage involves the preparation and testing of research instruments, ensuring their relevance and reliability. The third stage, data collection, is conducted through an online questionnaire designed to capture the necessary information. Finally, the data processing, analysis, and conclusion stage involves organizing the data into tables based on the research questions. The data are processed using percentage techniques and statistical methods, with correlation tests employed for statistical analysis to identify relationships between variables.

The objects of this research are three key variables: internet media literacy, reading literacy, and writing literacy. These variables are measured using an ordinal scale to assess their levels among participants.

The participants in this study met the following criteria: 1) They were registered as active students in the Indonesian Language Education Study Program at Makassar State University, 2) At the time of the study, they were in their fourth semester, 3) They were actively attending classes on campus during the data collection period and were not engaged in off-campus activities such as PPL (teaching practice) or KKN (community service). The students were tasked with investigating accessible and well-known technologies and understanding how these could be utilized for their studies. Assignments were submitted in both physical and digital formats, which served as the primary data sources for this research.

A questionnaire, developed using Google Forms, was the primary research instrument. It included closed-ended questions such as "How frequently do you use digital learning tools for reading?" "Which of the following digital learning tools have you used for learning English?" and "On a scale of 1 to 5, how effective do you find digital learning tools in improving your English reading skills?" This format allowed respondents to complete the questionnaire easily using a mobile phone or laptop.

Data analysis began with tabulating the responses. Once the data were organized, the values of the research variables were calculated using percentages and statistical analysis, specifically correlation tests. The final and most challenging step for the researchers involved interpreting the results of the analysis to draw meaningful conclusions from the data.

3. FINDINGS AND DISCUSSION

3.1 Findings

This study aims to explore the effect of providing detailed instructions on reading strategies and their impact on reading comprehension in a digital literacy environment (DLE) among university students at the State University of Makassar. Specifically, the research examines how social media platforms, such as WhatsApp and Facebook, contribute to the development of key literacy skills, including vocabulary, reading comprehension, and writing.

Table 1. Benefits of WhatsApp and Facebook

No	Benefits	Percentage
1	Increasing new vocabulary	25%
2	Improving reading comprehension	50%
3	Improving writing skill	20%
4	Others	5%
	Total	**100%**

As shown in Table 1, the data from the questionnaire indicate that 50% of the participants reported improvements in reading comprehension through the use of WhatsApp and Facebook. This suggests that reading comprehension is the most significantly enhanced skill when students engage with these digital platforms, making it a dominant benefit for students in the current digital age.

The primary themes identified from the data highlight the significant potential of digital technologies for educational purposes, particularly in teaching language skills. The analysis focused on the types of digital technologies that student teachers are inclined to incorporate into their instructional strategies, with the research specifically examining the use of Facebook closed groups and WhatsApp. These platforms were chosen based on factors such as ease of use, accessibility, and their ability to foster collaborative learning. Feedback from the students revealed that closed Facebook groups provide experiences akin to traditional classroom settings, enabling students to freely share content, including videos, news links, and other resources, while also engaging in discussions. This interactive and flexible environment allowed students to exchange information and participate in group discussions without the pressure of face-to-face interaction. Students noted that the Facebook platform encouraged more active engagement, reduced anxiety, and allowed them to express their ideas more freely compared to conventional classroom settings. This suggests that the digital space created a sense of comfort and inclusivity, making students feel more confident in contributing to discussions.

Furthermore, WhatsApp was found to be an effective tool for facilitating dynamic group activities in real-time. One strategy employed by a student teacher involved using WhatsApp to guide students in a classroom exercise where they explored physical spaces relevant to their learning content. Through continuous communication on WhatsApp, students exchanged images and descriptions of their findings, fostering collaboration and active participation. This real-time interaction not only supported students' learning but also allowed them to construct understanding collaboratively within a community of learners. The immediacy and accessibility of WhatsApp created an intimate learning environment where students felt connected and motivated to engage in the learning process.

The findings suggest that digital technologies such as private Facebook groups and WhatsApp provide inclusive, secure, and collaborative platforms that significantly enhance student involvement and engagement. Students generally acknowledged the effectiveness of these tools in creating environments where they could share their thoughts comfortably and openly, reducing the barriers that often arise in traditional classroom settings. Additionally, the use of digital tools like e-books,

interactive reading platforms, and multimedia resources was found to motivate students, further enhancing their learning experiences.

In conclusion, Facebook discussion groups and WhatsApp offer comprehensive and confidential forums for students to improve their digital reading comprehension and language skills. These platforms not only promote a sense of community and inclusion but also provide students with the tools to actively engage in their learning, fostering both digital literacy and collaborative skills. The study demonstrates the growing role of digital technologies in shaping modern educational practices, particularly in enhancing reading comprehension and fostering a more supportive and interactive learning environment.

3.2 Discussion

In the rapidly evolving digital age, educational practices have increasingly integrated digital tools to enhance learning outcomes, particularly in language acquisition. Social media platforms such as WhatsApp and Facebook, once primarily used for social interaction, are now recognized for their potential to develop key literacy skills among students. The growing importance of digital literacy in educational environments highlights the need for effective strategies that help students navigate and benefit from these tools. This study aims to explore how detailed instruction in reading strategies within a digital literacy environment (DLE) can impact reading comprehension among university students, with a particular focus on the role of WhatsApp and Facebook in enhancing vocabulary, reading comprehension, and writing skills.

The research findings indicate that social media platforms offer significant benefits for student learning, with reading comprehension emerging as the most dominant skill improvement among students using WhatsApp and Facebook. As shown by the data, 50% of participants reported improvements in reading comprehension, demonstrating the powerful role that digital tools play in modern education. This research not only sheds light on the effectiveness of integrating digital technologies into language teaching but also explores the factors that influence student preferences in selecting digital platforms for learning. The study emphasizes the importance of providing structured, detailed instructions in a DLE to maximize the educational potential of social media platforms in fostering critical literacy skills.

The educational potential of platforms like WhatsApp and Facebook lies in their ability to merge students' unique abilities, specific learning contexts, and conversational technologies, facilitating meaningful engagement in the learning process (Susilo, 2014). Both platforms support the educational, social, and technological needs of students, allowing for activities such as posting announcements, sharing resources, and engaging in online discussions (Susilo, 2014). This research emphasizes the importance of digital literacy in improving reading comprehension, particularly for problem-solving and task completion. As supported by previous studies, proficient readers equipped with ICT skills are better able to assess and combine online information effectively (Hahnel et al., 2016). Moreover, educators can enhance student learning by customizing the use of these platforms to fit their cultural, social, and technological contexts, thereby improving accessibility and addressing privacy concerns. Overall, the study underscores the importance of integrating digital tools into educational practices to support diverse learning needs and promote lifelong learning skills among students.

The group features of Facebook and WhatsApp have the potential to serve as complementary tools for online tutorials. These affordances encompass educational, social, and technological capabilities that enable the posting of announcements, sharing of ideas and resources, and facilitation of online debates (Susilo, 2014). Reading encompasses an intricate assortment of procedures, which rely on many abilities (Kim et al., 2021).

This finding emphasizes the importance of digital literacy in enhancing reading comprehension on the Internet for the purpose of problem-solving, completing tasks, or meeting learners' needs. It also

provides an overview of a pedagogical intervention (Girón-García, 2015). Proficient reading and ICT abilities are crucial requirements for digital reading, since they significantly contribute to the overall understanding and effectiveness of this activity. Proficient readers who possess automated computer skills and effective methods for assessing the value of online material can successfully find, evaluate, and combine web-based information (Hahnel et al., 2016).

Facebook has the potential to be used for teaching and learning due to its distinctive built-in features that provide opportunities for pedagogy, social interaction, and technology utilization. The Facebook group served as a learning management system in teacher education courses, facilitating the publishing of announcements, sharing of materials, organization of weekly tutorials, and conducting of online conversations. The Facebook program is widely used on almost every mobile device, and nowadays, the majority of students in Indonesia have a Facebook account. Most students predominantly use their Facebook accounts for social pleasure, while only a minority employ it for academic learning objectives (Muhammad & Annamalai, 2022).

The students were generally content with the educational, social, and technological benefits of using Facebook (FB) as a learning management system (LMS), as it allowed for the seamless integration of essential LMS activities within the FB group. Nevertheless, utilizing the Facebook group as a learning management system (LMS) presented specific constraints. The platform lacked the ability to directly upload files in certain formats, and the debate was not structured in a threaded manner. Furthermore, the students experienced a lack of security and a sense of discomfort due to concerns about potential breaches of their privacy (Susilo, 2014).

Proficiency in reading is crucial for acquiring knowledge, making substantial contributions to society, and understanding the complexities of the world. Many educators prioritize the utilization of technology to enhance the learning experience, especially when it comes to teaching reading in the era of digital advancement. This work may be a considerable problem for educational institutions that promote reading literacy, as the daily sessions often focus on enhancing reading skills. In digital media learning environments, learners have the opportunity to access diverse information presented through many means, which they may effectively take advantage of (Sujarwo et al., 2020).

To succeed, learners must consistently participate in the decision-making process regarding their future actions, as well as assess the importance of the knowledge they have acquired to their learning goals. This approach involves considering their current knowledge and level of being aware of oneself (Martin Daumiller, 2018).

Regularly evaluating the effectiveness of Facebook and WhatsApp in the specific context and gathering feedback from users can help identify and address any issues related to cultural, social, or technological factors. Customizing the use of Facebook and WhatsApp to fit the cultural, social, and technological context can improve their effectiveness. This includes adapting communication styles, ensuring accessibility, and addressing privacy concerns.

Moreover, when utilizing a foreign language serve as a wonderful resource for motivating students to actively participate in the target language within an educational framework that places the teacher as a supportive mentor providing guidance. Proficiency in technological skills, such as the ability to effectively pick, organize, and utilize knowledge to solve problems and adapt to new conditions, is crucial for lifelong learning. Having the ability to effectively handle web-based content in the context of learning is seen as a crucial skill for ongoing and self-directed education.

This study explored the impact of providing detailed instructions on reading strategies and their effect on reading comprehension within a digital literacy environment (DLE) for university students. The findings contribute significantly to the fields of digital literacy and education by advancing theoretical knowledge, offering practical applications, and supporting lifelong learning. In doing so, this research also promotes educational equity and sets the foundation for future studies in this area.

These contributions help shape a more inclusive and effective educational landscape in the digital era. Furthermore, the study emphasizes that educators can effectively leverage digital technologies to enhance reading comprehension, address diverse learning needs, and foster the development of lifelong learning skills in students, ensuring they are well-prepared for the challenges of the digital world.

4. CONCLUSION

This study highlights the multifaceted benefits of digital technologies in enhancing reading comprehension, demonstrating both the positive reception of these tools by students and the tangible improvements they can facilitate in reading skills. Students generally found platforms like Facebook private groups to be inclusive and secure, providing a comfortable space for sharing ideas, while messaging systems such as WhatsApp fostered a sense of community and accessibility. The findings emphasize the importance of equipping students with technological skills for selecting, organizing, and utilizing information, which are crucial for problem-solving and lifelong learning. However, a limitation of this research is the focus on a specific sample and set of technologies, which may not capture the broader impact of digital tools across diverse learning environments. Future research could expand on this by exploring the integration of different digital platforms in various educational settings, as well as examining the long-term effects of digital literacy on student outcomes. As digital literacy and English proficiency become increasingly important, it is essential to continue exploring how technology can be leveraged to prepare students for lifelong learning and global citizenship.

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