A Correlation between EFL Student’s Digital Literacy and Their Reading Comprehension at Higher Education

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Submitted: 11-05-2024 Accepted: 28-05-2024 Published: 09-08-2024

Abstract
Proficient reading abilities are crucial for acquiring a language at an advanced level. Furthermore, students encounter digital information sources in the current technological era, underscoring the importance of digital abilities. Nevertheless, there is a dearth of research investigating the correlation between digital literacy and reading comprehension, particularly within the context of higher education institutions. The aim of the study is to examine whether there is a correlation between higher levels of digital literacy and reading comprehension among English as a Foreign Language (EFL) students in higher education. The research employed a correlational design. Non-probability sampling, specifically saturated sampling, was the sample technique used. The research sample consisted of twenty-five students enrolled in the fifth semester of the English Education Study Program at Universitas Riau Kepulauan. The research utilized questionnaires and test as the instruments to assess digital literacy and reading comprehension. The researcher administered the test to the sample after assessing its validity and reliability using SPSS version 23.0 for windows. The researcher employed the Pearson Product Moment to establish the relationship between digital literacy and reading comprehension. Based on data in a significance level of 5%, the analysis revealed that the r-count value (0.562) is greater than the r-table value (0.039). It approved Ha and declined Ho. The study revealed a significance correlation between students’ digital literacy and reading comprehension. This research suggests integrating digital tools into learning and creating a learning environment that supports both digital skills and reading understanding simultaneously.

Keywords: correlational design, digital literacy, EFL students, higher education, reading comprehension
INTRODUCTION

English as a Foreign Language (EFL) education at the higher education level is an integral part of a global effort to improve language skills in a multilingual and multicultural context. Ajaka (2020) emphasizes that EFL education at the higher education level is a complex and evolving field, influenced by the global dominance of English. The affirmation highlights the complexity and dynamics involved in teaching English as a Foreign Language (EFL) at the higher education level, as well as the influence of the global English dominance on this field. First, the complexity of EFL education in colleges shows that it's not a simple field. In addition, the statement emphasizes that EFL education in higher education institutions is a growing field. It shows that approaches and strategies in teaching English are constantly changing with the evolution of the times and the needs of students. He further explained that EFL students in colleges are often faced with the demand to acquire an in-depth understanding of English, both orally and in writing, for academic, professional, and social purposes (Ajaka, 2020). It affirms that changes in EFL education reflect the constantly changing dynamics in today's global environment.

Thus, in the process of learning English, reading skills become important, because a good understanding of reading is the foundation for higher language skills. A strong understanding of reading is indeed the foundation for higher language skills, as it is closely linked to comprehension (Noviabahari et al., 2023), direct information, and implied meaning (Laily, 2018). Reading involves more than finding words on a page; it requires critical thinking skills that involve evaluating ideas and applying them to everyday life (Riphah, 2021). This means that reading comprehension is critical to developing complex and profound language skills, and strong reading skills enable a person to grasp and analyze information more carefully and in depth. When an individual reads, they are required to engage in the active process of analyzing, evaluating, and connecting the information to their prior knowledge and experience (Maryatiningsih & Abduh, 2024), in addition to passively absorbing it. Therefore, a solid foundation in reading is vital for the development of higher language skills and overall success in education and the workforce.

In line with that, in an increasingly advanced digital age, approaches to reading learning have changed significantly. Students not only rely on printed reading materials, but are also exposed to a variety of digital information sources such as websites, e-books, social media, and online learning platforms. They are increasingly relying on digital resources for studying, research, and recreational purposes (Larhmaid et al., 2020). It means, digital information provides a diverse selection of reading materials, facilitates in-depth topic exploration, and offers interactive courses and specialized applications that improve reading abilities. Additionally, social media is possible to obtain reading recommendations and participate in the learning community. Interactivity and instant feedback are made possible by digital technology, which also necessitates digital literacy.

In this context, digital literacy skills are also becoming important for students, especially college students majoring in education. It is the ability to use digital technology to understand, evaluate, and create information (Silalahi et al., 2022). Digital literacy means more than just knowing how to use technology (Law et al., 2018; Kumi-Yeboah et al., 2020). It also involves having the skills to manage information, think critically, and behave correctly online (Tang, 2020), it is the ability of ethically and responsibly using digital media to access information (Yanuarti et al., 2021). Wati et al. (2023) emphasized that the ability to utilize digital literacy in the era of Society 5.0 is considered important...
not only for college students in their learning but also very supportive in solving the problems students will face in their work in the future. According to Pohan et al. (2023), in the era of Society 5.0, teachers are required to have digital competencies, one of which is digital literacy. Thus, understanding and mastering digital literacy is not only a necessity, but also a crucial element in individual success in today's digital age.

Conversely, although digital literacy and reading understanding are two important skills in higher education, there is still a need to understand the correlation between the two in greater depth. Technological developments have changed the way we access, evaluate, and process information, which may affect the way students understand texts in a second or foreign language context. This change marks the importance of digital literacy in the educational process.

Prior studies have started to address these gaps, but they are still only focusing on high school students (KS, 2022; Rochanaphapayon, 2024). Therefore, research on the correlation between digital literacy and reading understanding in EFL students in higher education becomes crucial. Understanding how digital literacy affects students' ability to understand English text can provide valuable insights for developing more effective learning strategies. Thus, the study aims to fill the knowledge gap in educational literature by investigating the relationship between digital literatures and reading understanding in the context of EFL learning in colleges.

Understanding the relationship between digital literacy and reading skills is crucial, as it is a guideline for teachers or educators in determining the right learning strategies for improving reading comprehension at the age of 5.0. Teachers and educators must understand this shift and incorporate relevant strategies into the curriculum to ensure that students not only understand printed texts, but can also process and evaluate the information they encounter in digital format with in-depth understanding. By paying attention to these changes, educators can prepare students with the necessary skills to face the challenges of an increasingly digitally connected world.

The formula of this research problem is ‘Do higher levels of EFL students’ digital literacy mean the higher levels of their reading comprehension?’ The research investigates the correlation between the digital literacy level of EFL students and their reading comprehension skills. Hence, the objective of the study is to investigate whether an increased level of digital literacy in EFL students has a substantial impact on their comprehension of English reading materials. The findings of this study are anticipated to offer useful insights for educators and practitioners in the realm of English language education to develop more efficient teaching strategies that can strengthen both of these elements concurrently. Therefore, this study can significantly enhance our comprehension of the significance of digital literacy in the realm of acquiring English as a foreign language.

**METHOD**

The quantitative method was used in this study, which used a correlational research design to quantify the relationship between two variables (digital literacy as the independent variable and reading comprehension as the dependent variable). The population in this study is the entire student body of the fifth semester of the English Language Education Studies Program at Universitas Riau Kepulauan in the odd semester of the academic year 2023-2024. Since the population was less than 30 students, this study used non-probability sampling with saturated sampling techniques.
This research employs a data collection technique that involves the distribution of two instruments: a reading comprehension test and a digital literacy questionnaire. We designed the reading comprehension test to assess the students' reading comprehension. In order to assess the students' comprehension of reading, the researcher used a test. However, in order to measure students' reading comprehension, the researcher adapted eight aspects of the reading comprehension test (Brown & Abeywickrama, 2018: 215). The eight aspects include the main idea, expressions or idioms, inference, grammatical features, scanning for detail, excluding facts, supporting ideas, and vocabulary. Barron's TOEFL iBT and ETS TOEFL iBT test questions served as the inspiration for the multiple choice reading comprehension test format.

The digital literacy questionnaire in this study employed closed-ended statements. To measure students' digital literacy the researcher was adapt the indicator of digital literacy competence by (Ferrari, 2013): information, communication, content creation, safety, and problem solving. It is designed with Likert scale measurement. With five options: Strongly Agree (SA) with the score of 5, Agree (A) with the score of 4, Neutral (N) with the score of 3, Disagree (D) with the score of 3, and Strongly Disagree (SD) with the score of 1.

In terms of the instruments validity, the researchers use a content validity test by comparing the content of the instrument with the material that has been taught. The validity test criteria involve comparing the calculated r-count (Pearson Correlation) with the tabled r-table. If the calculated r count > r table, then the research instrument is considered valid. If the calculated r-count < r table, then the research instrument is considered invalid.

Moreover, to know the reliability of the instruments, the researcher used Cronbach Alpha by SPSS 23.0 version for windows and to read the interpretation of the output results, the researcher used the guidebook from (Purnomo, 2016). To know the correlation between students’ digital literacy and reading comprehension of the study, the researcher used Product Moment Correlation in SPSS 23.0 version for windows and to read the interpretation of the output results, the researcher used the guidebook from (Muhid, 2019). The researcher interpreted the correlation by using the interpretation of product moment correlation by Sugiyono (2022, P. 184) such in the Table 1.

<table>
<thead>
<tr>
<th>Coefficient Interval</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,00-0,199</td>
<td>The Correlation is Very Low</td>
</tr>
<tr>
<td>0,20-0,399</td>
<td>The Correlation is Low</td>
</tr>
<tr>
<td>0,40-0,599</td>
<td>The Correlation is Moderate</td>
</tr>
<tr>
<td>0,60-0,799</td>
<td>The Correlation is Strong</td>
</tr>
<tr>
<td>0,80-1,000</td>
<td>The correlation is Very Strong</td>
</tr>
</tbody>
</table>

The statistical hypothesis of this study is there is a significant correlation between students’ digital literacy and reading comprehension among the fifth semester students of English Education Study Program at the University of Riau Kepulauan. (Ha : r_count > r_table = if r_count is higher than r_table)
FINDINGS AND DISCUSSION

The result of students’ reading comprehension

The data description of the Reading Comprehension Test taken by the students can be observed in the provided figure.

![Chart of Frequency Distribution of Students’ Reading Comprehension Test](image)

Figure 1. Chart of Frequency Distribution of Students’ Reading Comprehension Test

Based on the data presented in Figure 1, the lowest recorded score for reading comprehension among students was 39, while the highest score was 89. This variation indicates a difference in the level of students’ ability to understand text. A lowest score indicates that there are a number of students who may need additional help or different learning strategies to improve their reading skills. On the other hand, a higher score indicates students who are highly skilled in reading comprehension. The detail of the range, sum, mean, and standard deviation of Reading Comprehension Test can be seen on the Table 2.

Table 2. Descriptive Statistic of Students’ Reading Comprehension Score

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Maxim</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Range</td>
<td>Minimum</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>5</td>
<td>39</td>
</tr>
<tr>
<td>Valid (listwise)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

The results of data analysis showed that students’ reading comprehension scores range quite wide, ranging from 39 to 89, with a maximum-minimum difference of 50. The total score of all participants was 1543, with an average score of 61.71. A standard deviation of 12.2 indicates a significant variation in the level of reading understanding among the students tested. A wide scale of scores indicates that there is a substantial
variance in reading understanding ability among participants. A relatively high average suggests that the majority of participants have a fairly good understanding ability, although a large deviation from the standard shows that there are a number of participants that are far above or below the average, creating significant variations in the data.

The result of students’ digital literacy

Students’ digital literacy was measured by student responses to the digital literacy questionnaire from (Ferrari, 2013). Digital literacy questionnaire consist of five competences. There are information, communication, content creation, safety, and problem solving. 25 students from fifth semester of English Education Study Program at the University of Riau Kepulauan were the sample of the study. The result of students’ digital literacy can be seen in Figure 2 and Table 3.

![Digital Literacy](image)

Figure 2. Chart of Frequency Distribution of Students’ Digital Literacy Questionnaire

A review of the data provided in Figure 2, the minimum value of digital literacy among students was 106, while the maximum value was 142.

Table 3. Descriptive Statistics of Students’ Digital Literacy Score

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Minim</th>
<th>Maximum</th>
<th>Sum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Literacy</td>
<td>5</td>
<td>36</td>
<td>106</td>
<td>142</td>
<td>3104</td>
</tr>
<tr>
<td>Vali (listwise)</td>
<td>5</td>
<td></td>
<td></td>
<td>124</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 3 outlines the range of digital intelligence scores of 25 participants, with the highest score reaching 142 and the lowest score 106. The scores range is 36, calculated
from the difference between the maximum and minimum scores. The total score of the 25 participants is 3104, with the average score per participant reaching 124.16. In addition, the standard deviation was 8.133, showing how far most of the participants' scores differ from the average. This data provides an overview of the variation in the level of digital literacy among students, with relatively low deviations suggesting that most participants had a fairly consistent score around the average. Nevertheless, a fairly large range from minimum to maximum scores indicates a significant variation in the level of digital skills among the participants. Thus, this information provides a better understanding of the distribution and characteristics of digital literacy scores in the sample of participants analyzed.

**Hypothesis Testing**

The correlation coefficient or number is significantly higher than the critical value of the table (0.562 > 0.396) as evidenced by the Pearson Product Moment results in Table 4. This underscores the importance of the relationship. The level of significance (sig.2-tailed) is 0.003, which is evidently lower than the commonly used threshold of 0.05. In this context, the alternative hypothesis (Ha) is approved, whereas the null hypotheses (Ho) are rejected. In other words, it is possible to infer that there is a substantial correlation between reading comprehension and digital literacy.

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Digital Literacy</th>
<th>Reading Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Literacy Pearson Correlation</td>
<td>1</td>
<td>.562**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.003</td>
<td>.003</td>
</tr>
<tr>
<td>N</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Reading Comprehension Pearson Correlation</td>
<td>.562**</td>
<td>1</td>
</tr>
<tr>
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<td>25</td>
<td>25</td>
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</table>

**. Correlation is significant at the 0.01 level (2-tailed).**

The implications of these discoveries can be extremely significant in the realm of education and learning. The substantial correlation between digital literacy and reading comprehension implies that an individual's comprehension of reading is substantially enhanced by their proficiency in digital literature. This underscores the necessity of cultivating digital literacy as an essential component of the educational process. Educators can enhance the overall performance of students by developing more effective learning strategies that integrate digital literacy and reading learning, which can be achieved by comprehending this relationship. Furthermore, the results could serve as a foundation for the creation of intervention initiatives that are designed to enhance both digital literacy and reading comprehension at the same level.

**Discussion**

The objective of this study is to ascertain the degree of correlation between students' digital literacy and their reading comprehension in the fifth semester of the English Language Education Studies Program at Universitas Riau Kepulauan during the odd
semester of academic year 2023/2024. Table 4 provides the answer. It describes the relationship between digital literacy and reading comprehension in a sample of 25 individuals. The correlation between the two variables was calculated using the Pearson correlation coefficient. The analysis revealed a statistically significant relationship between digital literacy and reading comprehension at a significance rate of 0.01 (2-tailed), with a Pearson correlation coefficient of 0.562. It means, there is a moderately positive relationship between digital literacy and reading comprehension among the individual samples. In other words, the higher a person level of digital literacy, the more likely they are to have a good reading understanding, and vice versa.

It is understandable that digital intelligence encompasses the ability to access, understand, and use information from a variety of digital sources effectively (Silalahi et al., 2022; Law et al., 2018; Kumi-Yeboah et al., 2020; Tang, 2020; Yanuarti et al., 2021). So, with the findings of this study, it can be interpreted that people with high digital intelligences tend to be more skilled in searching, evaluating, and integrating information they find online. They are also more familiar with various digital text formats and are able to navigate the digital environment more efficiently. In addition, those with high digital intelligence usually have good digital literacy skills, such as the ability to read and understand texts in a variety of digital contexts, including articles, e-books, blogs, and social media. They can recognize relevant and credible information, as well as understand how algorithms work and how it affects the information they receive. In contrast, people with low digital intelligence may have difficulty understanding digital text due to lack of skills in navigating and evaluating online information. They may also be less familiar with digital text formats and various platforms that provide information. Therefore, increased digital intelligence can significantly contribute to improve reading understanding, both in academic contexts and in everyday life. Investment in digital literacy education and training is becoming essential to ensuring that individuals have the skills needed to succeed in this digital age.

KS (2022) supported this study by finding a correlation between digital literacy and reading comprehension. Moreover, the results of Rochanaphapayon (2024) who indicated that digital literacy enhances EFL students' reading comprehension. By employing digital literacy, EFL students were able to enhance their reading comprehension both within and outside the classroom. However, KS's and Rochanaphapayon research focuses remains restricted to high school students, whereas this study validates the findings for higher education students. Apart from that, the results of research that has independent variables that are similar to this research are the result of Hafiza et al. (2022), who indicated that there was a relationship between digital literacy and learning outcomes in biology learning at SMP Negeri 12 Pontianak.

Referring to the research results above, it can be concluded that digital literacy correlates with various areas both within English skills and beyond English skills. As explained in Gilster's theory, he said that digital literacy includes the ability to understand and effectively utilize information from a variety of sources in various formats via computer (Gilster, 1997). Digital literacy not only includes the technical ability to use computer devices or other digital technology including smartphones, laptop, computers, iPads, tablet, etc (Kumi-Yeboah et al., 2020), but also involves the ability to understand and manage information from various sources available in various formats in the digital world. In other words, digital literacy includes the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital technologies (Law et al., 2018) and use information wisely in the context of digital
technology. When student has and applies digital literacy, they become more proficient in accessing and utilizing information effectively in various contexts, including reading and comprehending it. These findings provide an understanding of how technological developments and literacy interact among students. Thus, an educational approach that combines digital learning with the development of reading skills can be an effective strategy for improving student academic achievement. Therefore, understanding the relationship between digitalization and reading can help improve the quality of education and prepare students to face the demands of this increasingly digital world.

Taking into account the correlation between understanding reading and digital literacy can be a very relevant step in the context of learning EFL in colleges. In the growing digital age, reading skills are no longer limited to the ability to understand written texts, but also include the capacity to understand and utilize information presented through various digital platforms. The importance of considering the correlation between reading understanding and digital intelligence cannot be ignored. In the context of learning English as a Foreign Language at college, understanding reading is the primary foundation of the learning process. Students should be able to understand complex texts in English to expand their knowledge in various fields of study. By considering the correlation between reading understanding and digital intelligence, colleges can design a more holistic and relevant curriculum for EFL students. For example, integrating digital technology into reading learning can help students develop their reading skills while enhancing their digital intelligences. Using digital learning platforms, such as interactive e-book platforms or online learning resources, can provide a more exciting and relevant learning experience for students.

First, a significant correlation between reading understanding and digital literacy may indicate that students who have a strong reading understanding also tend to have a better ability to understand and use digital text. This may be due to their ability to recognize text structure and meaning, as well as their ability to interpret information well, which is a relevant skill in both contexts. In addition, this correlation can also indicate that students who have good digital literacy tend to be more active in searching for information and reading digital texts, which in turn can improve their overall reading understanding. Still, correlation does not always point to a cause-and-effect relationship. Although there is a relationship between digital literacy and reading comprehension, it does not mean that more digital literate will automatically improve reading comprehension, or vice versa. Still, one may learn a great deal when creating thorough and useful teaching plans for EFL students in higher education by considering the relationship between these two factors.

In higher education institutions, this research results is becoming increasingly urgent. Digital literacy, the ability to use and understand information and communication technologies effectively, has become an integral part of modern life. On the other hand, reading comprehension is a very important core skill in the process of learning English as a foreign language. Therefore, bridging the knowledge gap between digital literacy and reading comprehension among EFL students can have a significant impact on educational development.

The importance of this research lies not only in the individual's understanding, but also in its impact on the development of more effective learning strategies. By understanding how digital literacy affects students' ability to understand English texts, educators can design strategies that are better suited to the needs of today's students living in the digital age. For example, this research can help educators find learning methods
that integrate digital technology more effectively into the curriculum, thereby increasing students’ motivation and involvement in learning. Furthermore, this research can also make a meaningful contribution to our understanding of how the development of digital technology affects the process of learning and teaching languages. By looking at the correlation between digital literacy and reading comprehension, we can identify trends and patterns in EFL students' use of technology, as well as its potential impact on their ability to understand English text. This could pave the way for further research into developing more innovative and adaptive learning methods in line with technological developments.

This research also has important practical implications in the context of higher education. This research shares a meaningful contribution to formulating a more holistic education policy. Understanding the significance of digital literacy in EFL students' reading allows us to design education policies that prioritize the integration of technology into curricula and learning evaluations. This could include allocating greater resources for the development of technological infrastructure in higher education institutions, training teachers in the use of digital technology, and developing curriculum guidelines that integrate digital literature as an essential component.

Overall, research on the correlation between digital literacy and reading comprehension in EFL students in higher education has broad and important implications for the development of English language education. By bridging the knowledge gap in educational literature, this research can make meaningful contributions in developing more effective learning strategies, a better understanding of the impact of digital technology on language learning, and the formulation of more holistic educational policies.

CONCLUSION

The purpose of this study is to identify the level of correlation between the students’ digital literacy and their reading comprehension among the fifth semester of English Education Study Program at the University of Riau Kepulauan in the academic year 2023/2024. This study used SPSS version 23.0 for windows to analyze the data. Conferring to the findings presented, the Pearson product-moment correlation coefficient indicated a significance level (sig.2-tailed) 0.003 was lower than 0.05, then r count (0.562) was higher than r table (0.396). If the sig.2-tailed was lower than 0.05, then the significant level is 5%. It can be concluded that the alternative hypothesis (Ha) was accepted and the null hypothesis was rejected. In other words, there is a significant correlation between digital literacy and reading comprehension among the fifth semester students of English Education Study Program at the University of Riau Kepulauan in the academic years 2023/2024.

By knowing and considering the aspects used to assess digital intelligence, such as information, communication, content creation, security, and troubleshooting, students can understand and master the use of digital tools as tools to improve their language skills, especially in reading comprehension. Thus, integrating digital literacy into the curriculum can be an effective strategy to prepare students to face the demands of an increasingly digitally connected world and help them become more informed and knowledgeable readers in today’s information age. This research implies that educators integrate digital tools into learning and create learning environments that support digital literacy and simultaneous reading understanding. Teachers, therefore, can play a critical role in
facilitating students' digital literacy development while continuously strengthening their understanding of reading.

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