

EXAMINING THE RELATIONSHIP BETWEEN DIGITAL LITERACY AND READING COMPREHENSION AMONG EFL STUDENTS AT UNIVERSITAS GRAHA NUSANTARA

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ABSTRACT

Reading comprehension is an essential component of foreign language learning in higher education, while students' increasing use of digital information sources requires adequate digital literacy. However, empirical evidence concerning the relationship between digital literacy and reading comprehension among English Education students remains limited, particularly in higher education institutions outside Java. This study aims to examine the relationship between digital literacy and reading comprehension among English as a Foreign Language (EFL) students in the English Education Study Program at Universitas Graha Nusantara. This study employed a quantitative correlational design using total sampling, involving all 15 fifth-semester students enrolled in the 2025/2026 academic year. Data were collected using a digital literacy questionnaire adapted from the DIGCOMP framework (Ferrari, 2013), covering five competence areas, and a multiple-choice reading comprehension test based on the reading comprehension aspects proposed by Brown and Abeywickrama (2018). The data were analysed using the Pearson Product-Moment correlation coefficient with the assistance of SPSS



version 26.0 for Windows. The results showed a correlation coefficient of 0.639 with a significance value of 0.010 ($p < 0.05$). The correlation was statistically significant, indicating a positive relationship between students' digital literacy and reading comprehension. These findings suggest that higher levels of digital literacy were associated with better reading comprehension among the participants. The study recommends the integration of appropriate digital learning resources into reading instruction to support the development of both digital literacy and reading comprehension skills.

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A. INTRODUCTION

English as a Foreign Language (EFL) education at the higher education level requires students to develop an in-depth mastery of language skills, both spoken and written, for academic, professional, and social purposes (Ajaka, 2020). Among the four language skills, reading comprehension holds a particularly important position because it underlies the development of higher-order language competence. A strong understanding of reading is closely related to the ability to capture explicit information as well as implied meaning within a text (Laily, 2018), and involves critical-thinking processes to evaluate and apply ideas to everyday life (Riphah, 2021). When reading, students are required to actively analyze, evaluate, and connect new information with prior knowledge rather than merely absorbing it passively (Maryatiningsih & Abduh, 2024; Noviabahari et al., 2023). A solid foundation in reading comprehension is therefore a critical prerequisite for the academic success of English Education students.

At the same time, the advancement of digital technology has significantly changed the way students access and process reading materials. Students no longer rely solely on printed texts, but are also exposed to various digital information sources such as websites, e-books, social media, and online learning platforms (Larhmaid et al., 2020). This condition demands digital literacy—the ability to use digital technology to understand, evaluate, and create information (Silalahi et al., 2022). Digital literacy extends beyond the technical ability to operate devices; it also includes the capacity to

manage information, think critically, and behave ethically in digital spaces (Law et al., 2018; Kumi-Yeboah et al., 2020; Tang & Chaw, 2020). Wati et al. (2023) emphasized that digital literacy in the Society 5.0 era is important not only for students' learning processes but also for preparing them to face future workplace challenges, a view echoed by Pohan et al. (2023), who argue that educators in this era must possess digital competence, including digital literacy, as part of their professional skill set.

Nevertheless, empirical studies examining the relationship between digital literacy and reading comprehension among English Education students remain scarce. Prior research has begun to address this issue, but most studies remain confined to secondary-school contexts (KS, 2022; Rochanaphapayon, 2024) or to other disciplines, such as biology learning (Hafiza et al., 2022). Yet, the characteristics of higher education students—including those at small and medium-sized universities outside Java, such as Universitas Graha Nusantara—involve different digital literacy demands and academic reading complexity compared with secondary-school students. This gap makes research within the higher-education context, particularly in the English Education Study Program, both relevant and pressing.

Based on this rationale, the research problem of this study is formulated as follows: “Is there a significant correlation between digital literacy and reading comprehension among EFL students at the English Education Study Program, Universitas Graha Nusantara?” This study aims to determine the degree of correlation between the two variables among fifth-semester students. The findings are expected to contribute theoretically to the literature on the interplay between digital literacy and reading literacy in foreign language learning, as well as practically by informing lecturers in designing reading instruction strategies that effectively integrate digital technology.

B. LITERATUR REVIEW

Reading comprehension is an interactive process between a reader and a text, involving word recognition, meaning interpretation, and the integration of new information with prior knowledge. Brown and Abeywickrama (2018) identify eight key aspects for assessing reading comprehension: main idea, expressions or idioms, inference, grammatical features, scanning for detail, excluding facts, supporting ideas, and vocabulary. These eight aspects are commonly used as a reference for developing multiple-choice reading comprehension instruments, including those adapted from standardized test formats such as the TOEFL iBT.

Digital literacy, according to Gilster (1997), is defined as the ability to understand and effectively use information from a variety of sources accessed through computer devices. The DIGCOMP framework developed by Ferrari (2013) further specifies digital literacy into five core competences: information (the ability to search, evaluate, and manage digital information), communication (the ability to interact and share information through digital technology), content creation (the ability to create and edit digital content), safety (the ability to protect oneself and one's data ethically in digital spaces), and problem solving (the ability to identify digital needs and resolve technical issues). These five competences are relevant for measuring the digital literacy of pre-service English teachers, who are required not only to master the language but also to effectively utilize technology in teaching and learning.

Several prior studies confirm the relationship between digital literacy and reading ability. KS (2022) found a correlation between digital literacy and reading comprehension among senior high school students. Rochanaphapayon (2024) similarly reported that digital literacy enhances EFL students' reading comprehension both inside and outside the classroom. In a different discipline, Hafiza et al. (2022) found a relationship between digital literacy and biology learning outcomes among junior high school students. Although these studies establish an initial foundation confirming the role of digital literacy in learning, none specifically examine the context of higher education English Education students, which positions the present study to address that gap.

Based on the theoretical and empirical review above, the statistical hypothesis proposed in this study is that there is a significant correlation between digital literacy and reading comprehension among fifth-semester students of the English Education Study Program at Universitas Graha Nusantara ($H_a: r\text{-count} > r\text{-table}$).

C. RESEARCH METHOD

This study employed a quantitative approach with a correlational research design to examine the relationship between digital literacy and reading comprehension. Digital literacy was treated as the independent variable (X), while reading comprehension was treated as the dependent variable (Y). The study was conducted in the English Education Study Program at Universitas Graha Nusantara during the odd semester of the 2025/2026 academic year.

The population consisted of all fifth-semester students enrolled in the English Education Study Program at Universitas Graha Nusantara. The total population comprised 15 students. Because the population was relatively small, this study employed total sampling (saturated sampling), in which all members of the population were included as research participants. Thus, the sample consisted of 15 fifth-semester students.

Data were collected using two instruments: a digital literacy questionnaire and a reading comprehension test. The digital literacy questionnaire was adapted from the DIGCOMP framework developed by Ferrari (2013). The questionnaire covered five competence areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem solving. It consisted of 30 statements measured using a five-point Likert scale: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1). The total questionnaire score therefore ranged from 30 to 150.

The second instrument was a reading comprehension test consisting of 30 multiple-choice items. The test was developed based on the reading comprehension aspects proposed by Brown and Abeywickrama (2018). The item formats were adapted to the context of EFL students and referred to the types of reading comprehension tasks commonly used in standardised English proficiency tests, including TOEFL-oriented formats. Each correct answer received one point, while an incorrect answer received zero points. The raw scores were subsequently converted to a 0–100 scale.

The validity of the research instruments was established through content validity and empirical item analysis. Content validity was examined by comparing each item with the relevant indicators and learning materials covered by the instruments. In addition, item validity was tested using the Pearson Product-Moment correlation coefficient. An item was considered valid when its calculated correlation coefficient (r -count) exceeded the critical value (r -table) at the 5% significance level.

The reliability of the digital literacy questionnaire was assessed using Cronbach's Alpha with the assistance of SPSS version 26.0 for Windows. The reliability analysis was conducted to determine the internal consistency of the questionnaire items. The interpretation of the reliability coefficient followed the guidelines proposed by Purnomo (2016).

The collected data were analysed quantitatively using SPSS version 26.0 for Windows. Descriptive statistics were first used to summarise the participants' digital literacy and reading comprehension scores. The relationship between the two variables was then examined using the Pearson Product-Moment correlation coefficient.

Before conducting the correlation analysis, the data were examined to ensure that the assumptions required for Pearson correlation were satisfied, particularly the normality and linearity of the data. The Pearson correlation coefficient was used to determine both the direction and strength of the relationship between digital literacy and reading comprehension.

The strength of the correlation was interpreted according to the following criteria.

Table 1
Correlation Coefficient Interpretation

Coefficient Interval	Interpretation
0.00–0.199	Very Low
0.20–0.399	Low
0.40–0.599	Moderate
0.60–0.799	Strong
0.80–1.000	Very Strong

The statistical hypotheses were formulated as follows:

H_0 : There is no significant relationship between digital literacy and reading comprehension among fifth-semester students of the English Education Study Program at Universitas Graha Nusantara.

H_a : There is a significant relationship between digital literacy and reading comprehension among fifth-semester students of the English Education Study Program at Universitas Graha Nusantara.

The significance level was set at 5% ($\alpha = 0.05$). H_0 was rejected and H_a was accepted when the significance value (p-value) was less than 0.05. Conversely, H_0 was retained when the significance value was greater than or equal to 0.05.

D. RESULT AND DISCUSSION

The Results of Students' Reading Comprehension

The reading comprehension data were obtained from a test administered to the 15 student participants. The frequency distribution of the students' reading comprehension scores is presented in Figure 1.

Figure 1

Frequency Distribution of Students' Reading Comprehension Test Scores

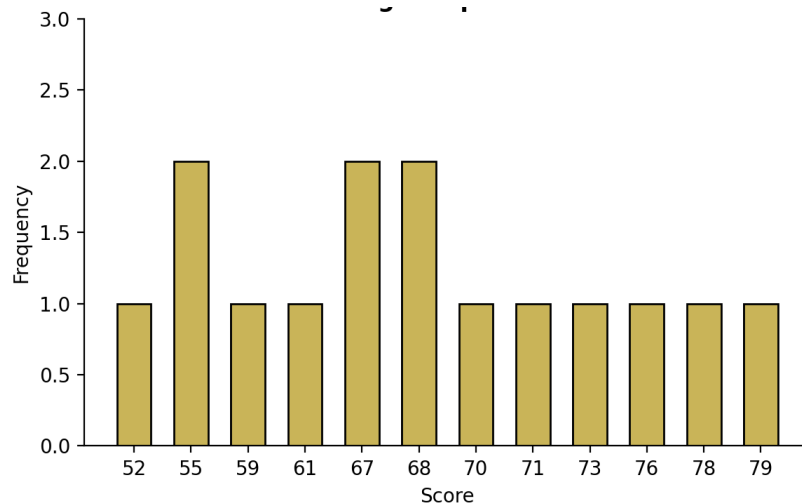


Table 2

Descriptive Statistics of Students' Reading Comprehension Scores

Variable	Range	Min	Max	Sum	Mean	SD
Reading Comprehension	27	52	79	999	66.60	8.53

Based on Figure 1 and Table 2, the students' reading comprehension scores ranged from 52 to 79, resulting in a range of 27 points. The total score obtained by the 15 participants was 999, with a mean score of 66.60 and a standard deviation of 8.53. These results indicate that the students' reading comprehension scores varied around the mean, with individual scores distributed between 52 and 79.

The Results of Students' Digital Literacy

Students' digital literacy was measured using a questionnaire adapted from the DIGCOMP framework developed by Ferrari (2013), covering five competence areas: information, communication, content creation, safety, and problem solving. The frequency distribution of students' digital literacy scores is presented in Figure 2.

Figure 2

Frequency Distribution of Students' Digital Literacy Questionnaire Scores

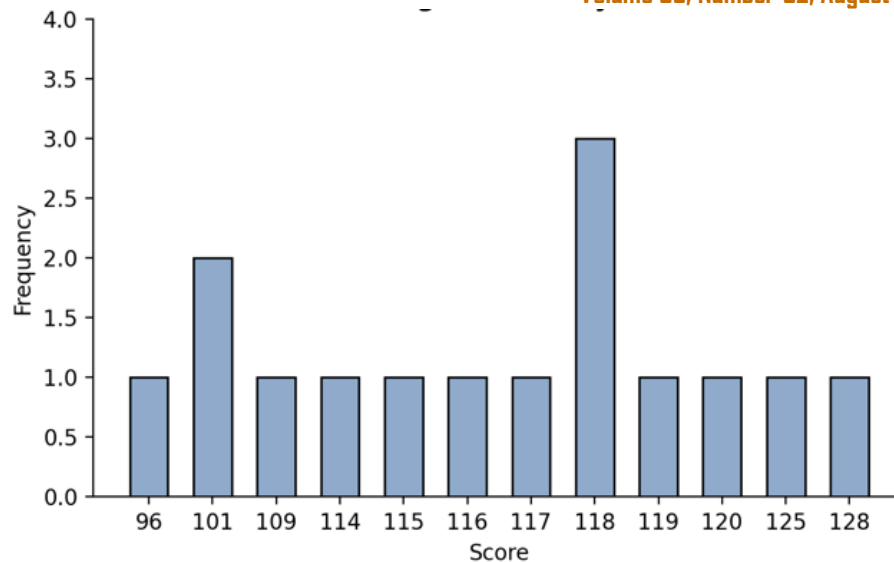


Table 3

Descriptive Statistics of Students' Digital Literacy Scores

Variable	Range	Min	Max	Sum	Mean	SD
Digital Literacy	32	96	128	1715	114.33	8.97

Based on Figure 2 and Table 3, the digital literacy scores of the 15 participants ranged from 96 to 128, with a range of 32 points. The total score obtained by the participants was 1,715, with a mean score of 114.33 and a standard deviation of 8.97.

Figure 2 shows that the distribution of students' digital literacy scores varied across participants. The highest frequency was observed at a score of 118, obtained by three students, while most other scores appeared only once or twice. The distribution indicates that although students generally achieved relatively similar digital literacy scores, individual differences were still present among the participants.

These findings provide an overview of the digital literacy level of fifth-semester English Education students at Universitas Graha Nusantara. The variation in scores suggests that students possessed different levels of competence in using digital technologies, which may influence how they access, evaluate, and utilise digital resources for academic purposes.

Hypothesis Testing

The relationship between digital literacy and reading comprehension was analyzed using the Pearson Product Moment correlation test. The analysis aimed to determine the strength and significance of the relationship between students' digital literacy and reading comprehension. The correlation results are presented in Table 4, while the

relationship pattern between the two variables is illustrated through a scatter plot in Figure 3.

Table 4

Correlation Result between Digital Literacy and Reading Comprehension

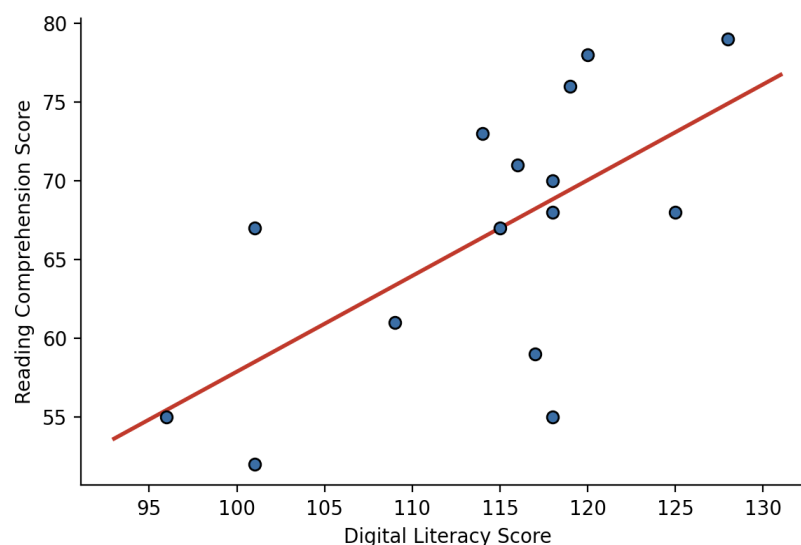
Variable	Pearson Correlation	Sig. (2-tailed)	N
Digital Literacy	1		15
Reading Comprehension	0.639**	0.010	15

Variable	Pearson Correlation	Sig. (2-tailed)	N
Reading Comprehension	0.639**	0.010	15
Digital Literacy	1		15

Note. Correlation is significant at the 0.05 level (2-tailed).

Figure 3

Scatter Plot of the Relationship between Digital Literacy and Reading Comprehension



Based on Table 4 and Figure 3, the Pearson Product Moment correlation analysis shows that the correlation coefficient between digital literacy and reading comprehension was 0.639. The scatter plot in Figure 3 illustrates a positive relationship pattern between the two variables, where students with higher digital literacy scores tend to obtain higher reading comprehension scores.

The hypothesis testing result shows that the obtained correlation coefficient (r -count = 0.639) is higher than the critical value (r -table = 0.514) at a 5% significance

level with degrees of freedom ($df = n - 2 = 13$). In addition, the significance value (Sig. 2-tailed = 0.010) is lower than 0.05, indicating that the correlation is statistically significant.

Therefore, the alternative hypothesis (H_a) is accepted and the null hypothesis (H_o) is rejected. This finding confirms that there is a significant relationship between digital literacy and reading comprehension among fifth-semester students of the English Education Study Program at Universitas Graha Nusantara.

Based on the correlation interpretation criteria used in this study, the coefficient value of 0.639 indicates a strong positive correlation. This means that students with better digital literacy skills tend to demonstrate higher reading comprehension abilities. The scatter plot pattern presented in Figure 3 supports this finding by showing an increasing trend between digital literacy scores and reading comprehension scores.

Discussion

The significant positive relationship between digital literacy and reading comprehension found in this study supports the view that digital literacy involves not only the ability to access digital information but also the capacity to understand, evaluate, and effectively use information from various digital sources (Silalahi et al., 2022; Law et al., 2018; Kumi-Yeboah et al., 2020; Tang & Chaw, 2020). Students with higher levels of digital literacy are generally more capable of searching for relevant information, evaluating online sources, and integrating information from different digital platforms. Moreover, their familiarity with various digital text formats, including electronic articles, e-books, and academic blogs, may contribute to their ability to comprehend English texts by identifying discourse structures, recognizing main ideas, and interpreting implied meanings, which are essential components of reading comprehension (Brown & Abeywickrama, 2018).

The result of this study is consistent with the findings of KS (2022) and Rochanaphapayon (2024), who reported a positive relationship between digital literacy and EFL students' reading comprehension. However, previous studies primarily examined secondary-school students, whereas the present study expands the discussion to the higher education context, particularly among students in an English Education Study Program at a small-scale university, Universitas Graha Nusantara. Furthermore, this result aligns with Hafiza et al. (2022), who demonstrated that digital

literacy is associated with learning outcomes in other academic fields, suggesting that the contribution of digital literacy extends beyond language learning contexts.

The findings can also be interpreted through the perspectives of the DIGCOMP framework (Ferrari, 2013) and Gilster's (1997) concept of digital literacy, which emphasize individuals' abilities to access, manage, evaluate, and use digital information effectively. Students with stronger digital literacy skills may have greater opportunities to interact with diverse digital learning materials and develop strategies for processing information in digital environments (Law et al., 2018). Nevertheless, the correlation identified in this study does not indicate a causal relationship. Higher digital literacy does not necessarily directly improve reading comprehension, and higher reading comprehension does not automatically result in better digital literacy. Instead, the significant correlation indicates that both competencies are closely related and may support each other in the learning process.

From a pedagogical perspective, this finding highlights the importance of integrating digital literacy practices into English Education curricula, particularly in reading-related courses. Lecturers may consider incorporating digital learning resources, such as interactive e-book platforms, online discussion forums, and technology-based reading activities, to provide students with opportunities to engage with various forms of digital texts (Larhmaid et al., 2020). Strengthening digital literacy alongside reading comprehension skills is particularly relevant in preparing future English teachers to meet the literacy demands of the Society 5.0 era (Wati et al., 2023; Pohan et al., 2023). Therefore, developing these two competencies simultaneously can support the preparation of English teachers who are proficient in both language skills and digital technology.

E. CONCLUSION

This study investigated the relationship between digital literacy and reading comprehension among fifth-semester students of the English Education Study Program at Universitas Graha Nusantara during the 2025/2026 academic year. Based on the Pearson Product Moment correlation analysis using SPSS version 26.0 for Windows, the results showed a significant positive correlation between digital literacy and reading comprehension. The significance value (Sig. 2-tailed) was 0.010, which was lower than the significance level of 0.05, while the obtained correlation coefficient ($r = 0.639$) was

higher than the critical value ($r\text{-table} = 0.514$). Therefore, the alternative hypothesis (H_a) was accepted, and the null hypothesis (H_o) was rejected. These findings indicate that students with higher digital literacy levels tend to demonstrate better reading comprehension abilities.

The findings highlight the importance of developing digital literacy competencies, including information literacy, communication, content creation, safety, and problem-solving skills, as part of supporting students' reading comprehension development. In the context of English Education, integrating digital learning resources and technology-based reading activities may provide students with opportunities to engage with diverse digital texts and strengthen both digital literacy and reading skills.

However, this study has several limitations. The sample size was relatively small, involving only 15 students from one study program at a single institution; therefore, the findings should be interpreted within this specific context and cannot be widely generalized. Future studies are recommended to involve larger samples, include participants from multiple institutions, and investigate other factors that may contribute to reading comprehension development, such as learning motivation, digital reading strategies, or students' engagement with digital learning environments.

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