ASIA PACIFIC JOURNAL
OF EDUCATORS AND EDUCATION

Volume 40, Number 2, 2025
https://doi.org/10.21315/apjee2025.40.2.8

Research Article:

A Correlational Study Between Students' Competencies in English as a Foreign Language (EFL) Vocabulary Mastery, Reading Comprehension, and Critical Literacy

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ABSTRACT

Critical literacy has emerged as a crucial ability needed by students, especially those pursuing higher education, as it involves critically evaluating vast amounts of information available today. Reading comprehension is significantly influenced by critical literacy instruction which is a key component to boost critical literacy. However, some studies reported minimal improvement in reading comprehension when students were taught using critical literacy approach compared to the traditional methods. This discrepancy suggests that other factors may affect the relationship between these variables, particularly in vocabulary mastery. This study aims to find the correlation between EFL students' vocabulary mastery, reading comprehension, and critical literacy in higher education. Data were collected from 69 second-semester Indonesian students who enrolled in the Interpretive Reading Course by assessing their vocabulary scores, final exams, and critical literacy tests. The results have indicated a strong correlation between vocabulary, reading comprehension test results, and critical literacy, with reading comprehension being the most influential factor. Additionally, vocabulary and reading comprehension accounted for a low count of the variance in critical literacy, suggesting other factors may have mostly contributed to this. Consequently, further research with a larger sample size is recommended to investigate other potential factors influencing critical literacy.

Keywords: Critical literacy, EFL students, Higher education, Reading comprehension, Vocabulary mastery

Published: 30 September 2025

To cite this article: Muniroh, S., Andreani, S., Anugerahwati, M., Silfia, D. I., Metaria, & Tengku Intan Suzila T.S. (2025). A correlational study between students' competencies in English as a foreign language (EFL) vocabulary mastery, reading comprehension, and critical literacy. *Asia Pacific Journal of Educators and Education, 40*(2),179–196. https://doi.org/10.21315/apjee2025.40.2.8

INTRODUCTION

Critical literacy has been recognised as an essential skill in language and literacy education for the 21st-century (Luke, 2012; Bacon, 2017; Rini, 2018; Kurt-Taşpınar & Çubukçu, 2020), as students are increasingly exposed to a greater variety of information sources resulting from rapid technological advancements. Critical literacy is the analysis, criticism, and transformation of the norms, rule systems, and practices that regulate ordinary social domains through print and other media communication technologies (Luke, 2012). It is an approach to engage students with the information beyond simply understanding the text content. Although linguistic and conceptual comprehension of the text is the foundation of reading information stances, students also need to respond to texts in more sophisticated and varied ways than they are generally acknowledged (Wallace, 2003; Luke, 2012). In other words, comprehending the text is defined as the capacity to comprehend and analyse written materials (Hidayati et al., 2020), while critical literacy expands on this idea by highlighting the significance of questioning assumptions, identifying biases, and connecting with texts on a deeper level (Van Duzer & Florez, 1999). Thus, if students can criticise information, they are likely to have good reading comprehension mastery (Abbasian & Malaee, 2015; Hazaea & Alzubi, 2017; Rashidi & Asgharzadeh, 2017).

The relationship between critical literacy and reading comprehension has been acknowledged in the field of English Language Teaching (ELT) (Park, 2012; Adel & Hassani, 2014; Kurt-Taşpınar & Çubukçu, 2020; Maesaroh & Muzayyin, 2022). Students' ability to understand and critically engage in complex texts is vital for their success and decision-making. It helps students evaluate arguments, recognise biases, and effectively synthesise information by improving their communication, comprehension, and analytical thinking skills. Gaining these skills enables students to think critically and handle challenging texts in both academic and practical settings. This relationship is much more evident among English as a Foreign Language (EFL) learners owing to the added challenges brought on by linguistic and cultural differences (Adel & Hassani, 2014; Kurt-Taşpınar & Çubukçu, 2020; Wexler et al., 2020). Several studies, among others, are Lam et al. (2024), Rahmah et al. (2023), Sholihah and Widyantoro (2021), and Suggate et al. (2018) believe that vocabulary is one of the crucial factors in bridging reading comprehension and predicting early literacy skills. Thus, Rini (2018), Kurt-Taşpınar and Çubukçu (2020), Park (2012), Adel and Hassani (2014), and Maesaroh and Muzayyin (2022) believe that fostering critical literacy coupled with reading comprehension as well as vocabulary knowledge remains a crucial educational endeavour.

Existing research has provided valuable insights into critical literacy and reading comprehension domains (Luke, 2012; Park, 2012; Adel & Hassani, 2014; Bishry, 2018; Hidayati et al., 2020; Kurt-Taşpınar & Çubukçu, 2020; Rini, 2018; Suggate et al., 2018; Maesaroh & Muzayyin, 2022). However, the correlation between vocabulary, reading comprehension, and literacy among EFL learners at the tertiary level remains under-explored (Suggate et al., 2018; Maesaroh & Muzayyin, 2022). Some studies have examined the impact of critical literacy instruction on reading comprehension outside the Indonesian context (Park, 2012; Adel & Hassani, 2014; Kurt-Taşpınar & Çubukçu, 2020) but there is a dearth of research focusing on those variables, specifically on EFL learners in the

university (Rini, 2018; Hidayati et al., 2020). Nevertheless, findings on this relationship remain inconclusive. For instance, Luke (2012) discovered that students taught using a critical literacy approach did not enhance their reading comprehension compared to those taught with conventional methods. Similarly, Bishry (2018) suggested no direct link between vocabulary mastery and reading comprehension, raising questions about how these variables interact in EFL contexts.

Concerning those gaps, the present research objective is to determine whether there was any correlation between vocabulary mastery, reading comprehension, and critical literacy. By bridging the gap between theory and practice, this research can contribute valuable insights to the field of ELT and enhance the quality of language education for EFL learners. Therefore, questions that guided this study are:

1. Is there any correlation between vocabulary mastery and reading comprehension?
2. Is there any correlation between vocabulary mastery and critical literacy?
3. Is there any correlation between reading comprehension and critical literacy?
4. Is there any correlation between vocabulary mastery, reading comprehension, and critical literacy?

Thereby, this research provides valuable information for teachers and curriculum developers to integrate vocabulary development and comprehension strategies into literacy instruction as well as promote support for a literacy strategy that goes beyond simple comprehension to encourage more in-depth critical interaction with texts.

LITERATURE REVIEW

Vocabulary Mastery and Its Role in Reading Comprehension

Vocabulary mastery is fundamental to language proficiency, significantly influencing learners' ability to comprehend texts. Vocabulary mastery, the degree to which a person knows and uses words, is not only a matter of knowing the meanings of words but also understanding their subtleties, connotations, and correct contexts. According to Nation (2001), mastering vocabulary goes beyond knowing word definitions; it is the thorough understanding and effective use of a wide range of words within language as it necessitates understanding the form, meaning, and context of a word in both receptive (word recognised and understood while listening and reading) and productive vocabularies (words utilised effectively in speaking or writing and receptive vocabulary. A strong vocabulary enables learners to grasp the meaning of words within different contexts, making it easier to understand written and spoken language (Masrai, 2019; Sholihah & Widyantoro, 2021; Manihuruk, 2020; Rahmah et al., 2023; Lam et al., 2024). Without sufficient vocabulary knowledge, students may struggle to interpret key ideas, recognise nuances, and make connections between concepts (Zhang & Anual, 2008; Guo & Roehrig, 2011; Yildirim et al., 2011; Suggate et al., 2018; Sholihah & Widyantoro, 2021). Thus, a well-developed vocabulary enhances reading fluency, allowing learners to process information more efficiently.

Given its fundamental role in reading comprehension, vocabulary mastery is often used as a predictor of academic success and early literacy skills. Research conducted by Bleses et al. (2016), Rahmah et al. (2023), and Warnby (2023) indicate that students with a strong vocabulary tend to perform better in reading assessments, as they can engage with more complex and varied texts without excessive cognitive strain. Furthermore, Suggate et al. (2018) mention that vocabulary mastery at 19 months old was found to predict early literacy abilities before starting school, as well as reading comprehension at the age of 12. This highlights the long-term impact of early vocabulary exposure, as it lays the foundation for more advanced literacy skills and overall academic achievement.

Reading Comprehension: The Bridge to Critical Literacy

Reading comprehension is the cornerstone of critical literacy, as it enables readers to move beyond a surface-level understanding of words and sentences to actively analyse, evaluate, and question the meaning of a text. Reading comprehension is a cognitive process that involves understanding and interpreting written text. Rather than deducing meaning from particular words or sentences, it aimed to acquire an overall understanding of what is being discussed in the text (Woolley, 2011; Kendeou et al., 2016; Hall et al., 2020; Hidayati et al., 2020; Lusnig et al., 2023). It involves not only recognising and decoding words but also understanding their meanings and the relationships between them within the context of the passage. According to Abbasian and Malaee (2015), Hazaea and Alzubi (2017), and Rashidi and Asgharzadeh (2017), this progress in comprehension is the middle stop giving way to the higher planes of critical literacy, which includes the ability to analyse, question, and criticise texts to understand deeper societal contexts, power dynamics, and underlying messages of texts. Without a solid foundation in reading comprehension, readers may struggle to interpret texts critically, identify underlying messages, or distinguish between fact and opinion. Research suggests that proficient readers do more than decode words efficiently; they actively engage with texts in ways that foster deeper thinking and reflection (Woolley, 2011; Kendeou et al., 2016; Hall et al., 2020; Hidayati et al., 2020; Lusnig et al., 2023).

At its core, reading comprehension involves multiple cognitive processes, as written by Hall et al. (2020), Kendeou et al. (2016), Lusnig et al. (2023), and Woolley (2011). These include:

1. Decoding, or recognising and understanding written words and their associated sounds.
2. Vocabulary knowledge, which involves understanding the meanings of words and phrases in a text.
3. Grasping syntax and grammar, which govern how words combine to form meaningful sentences.
4. Making inferences by concluding or educated guesses based on textual clues.
5. Identifying main ideas and supporting details to recognise central themes or arguments.
6. Summarising, or concisely restating key points in one's own words.
7. Analysing text structures to understand how different parts, such as paragraphs or chapters, contribute to the overall meaning.
8. Evaluating arguments and evidence to assess the validity and credibility of the information presented.

These skills are fundamental to developing critical literacy, which requires readers to examine texts from multiple perspectives, question the author's intentions, and recognise biases or assumptions (Luke & Freebody, 1999; Wallace, 2003; Luke, 2012; Kaur, 2013; Adel & Hassani, 2014).

Luke and Freebody (1999) provide a comprehensive framework for critical literacy by emphasising four interrelated roles: code breaker, text participant, text analyst, and text user. As a code breaker, readers decode linguistic and structural elements of texts, recognising patterns, syntax, and multimodal features that aid in comprehension. However, comprehension extends beyond decoding; as text participants, readers use prior knowledge, experiences, and cultural context to construct meaning, allowing for deeper engagement with the text. Additionally, as text users, they understand the purpose, audience, and function of texts, recognising different genres and rhetorical structures, which enhances their ability to navigate and apply information effectively. The most critical role, however, is the text analyst, where readers develop an awareness of the biases, ideologies, and perspectives embedded in texts, acknowledging that no text is neutral. Therefore, strong reading comprehension skills are essential for developing critical literacy, as they enable individuals to analyse, interpret, and critically engage with texts.

Correlation between Vocabulary Mastery, Reading Comprehension, and Critical Literacy

Vocabulary plays a complex role in reading comprehension since understanding the text's meaning requires the ability to decode the messages. According to Curtis (1987), and Nation (2001), comprehension might be hampered by a text's high density of unknown words and the readers' inability to recognise them. Reading comprehension can therefore be reliably predicted by vocabulary mastery. Along with this, it is believed that there is a strong correlation between critical literacy and reading comprehension as evidenced by the cognitive process required to comprehend reading text. Abbasian and Malaee (2015), Hazaea and Alzubi (2017), and Rashidi and Asgharzadeh (2017) believe that students who possess critical ability demonstrate their ability to comprehend a text as they need to grasp the text's hidden meaning before criticising. Engaging in greater critical and analytical reading of written texts is one way that critical literacy abilities improve and expand one's comprehension of written materials. How critical literacy can contribute to reading comprehension can be reviewed in several aspects, namely questioning and analysis, inference and interpretation, evaluation of sources, engagement with multiple perspectives, and identification of bias and ideology (Park, 2012; Abbasian & Malaee, 2015; Kendeou et al., 2016; Hazaea & Alzubi, 2017; Rashidi & Asgharzadeh, 2017; Hall et al., 2020; Hidayati et al., 2020; Wexler et al., 2020).

In the questioning and analysis aspect, critical literacy involves questioning assumptions, biases, and power structures within texts. Encouraging readers to analyse texts critically prompts them to delve deeper into the meaning of the text, leading to a more thorough understanding of its content (Park, 2012; Abbasian & Malaee, 2015; Hazaea & Alzubi, 2017; Hidayati et al., 2020; Rashidi & Asgharzadeh, 2017; Wexler et al., 2020). Furthermore, critical literacy often involves making inferences and interpretations based on the text's context, authorial intent, and underlying messages. This skill complements

reading comprehension by encouraging readers to go beyond the text's literal meaning and consider its broader implications (Park, 2012; Kendeou et al., 2016; Hall et al., 2020). Evaluating the credibility and reliability of sources is also essential for effective reading comprehension. Readers who possess critical literacy skills are better equipped to assess the validity of the information presented in a text and determine whether it aligns with their knowledge and understanding (Park, 2012; Rashidi & Asgharzadeh, 2017; Hidayati et al., 2020; Wexler et al., 2020). Thus, readers will consider multiple perspectives and viewpoints, which can enrich their understanding of a text and enhance their ability to comprehend it from various angles. The last, critical literacy involves recognising bias, ideology, and power dynamics within texts (Park, 2012; Abbasian & Malaee, 2015; Kendeou et al., 2016; Hazaea & Alzubi, 2017; Rashidi & Asgharzadeh, 2017; Hall et al., 2020; Hidayati et al., 2020; Wexler et al., 2020). By being aware of these factors, readers can critically evaluate the author's intentions and the potential impact of the text on different audiences. Thus, gaining proficiency in critical literacy can greatly improve one's capacity to successfully understand, evaluate, and interpret written texts. In conclusion, without an abundant vocabulary, the readers will probably be unable to understand the essence and subtleties of the texts, and without good comprehension skills, they might struggle with the synthesis of information and its critique.

METHODOLOGY

Research Design and Instrument

A quantitative approach via a cross-sectional study was adopted to examine the relationship between three variables, namely vocabulary mastery, reading comprehension, and critical literacy, without manipulating the study environment or applying an intervention. The study was conducted only in one setting during the second semester of the 2023/2024 academic year. A statistical descriptive correlation analysis was employed to examine 69 students with similar abilities who were conveniently sampled from a population of 101 students of six parallel Interpretive Reading classes during the second semester of the 2023/2024 academic year at the English Language Education program, Universitas Negeri Malang, Indonesia. Students' performances were tested against the three targeted variables (Creswell & Guetterman, 2019).

Three instruments: (a) a test of vocabulary mastery, (b) a reading comprehension test, and (c) a test of critical literacy, were carefully designed and aligned with the theoretical frameworks (Table 1). The vocabulary mastery test, based on vocabulary level tests, assessed students' knowledge of word frequency levels from the first 1,000 to the fifth 1,000 words, assuring content validity in assessing lexical proficiency. The reading comprehension test was based on Andreani and Oka's (2012) coursebook, which included major topics such as keywords, inferences, figures of speech, culture-bound content and diction, juxtaposition, text organisation and development, text types, and interpretation of short stories. Meanwhile, the critical literacy test was developed using Stambler's (2013) framework, including synonym and antonym, collocation and phrasal verb, word definition, power dynamics and evaluating text, multiple viewpoints, critical reflection and action, historical, social, and cultural context, higher order thinking including analysis and synthesis. Expert validation

was performed to confirm the content and construct validity of the instruments, ensuring that they appropriately measured the required competencies. Moreover, Cronbach's alpha was used to determine the reliability of test scores. A reliability coefficient greater than 0.7 ensured that the test results were accurate and appropriate for further investigation into the relationship between vocabulary mastery, reading comprehension, and critical literacy.

Table 1. Outline of the vocabulary, interpretive reading comprehension, and critical literacy tests

Variable	Aspects		Total number
Vocabulary (X1)	1.	1,000-word level	
	2.	2,000-word level	
	3.	3,000-word level	
	4.	4,000-word level	
	5.	5,000-word level	
Interpretive reading comprehension (X2)	1.	Keywords	5
	2.	Inferences	8
	3.	Figures of Speech	10
	4.	Culture-bound content and diction	5
	5.	Juxtaposition	3
	6.	Text organisation and development	4
	7.	Text types	2
The overall number of items			**37**
Critical literacy (Y)	1.	Synonym and antonym	4
	2.	Collocation and phrasal verb	3
	3.	Words definition	8
	4.	Power dynamics and evaluating text	
	5.	Multiple viewpoints	3
	6.	Critical reflection and action	3
	7.	Historical, social, and cultural context	3
	8.	Higher-order thinking, including analysis and synthesis	13
The overall number of items			**40**

Data Collection and Analysis

The three tests were administered in a classroom to make sure that the students did not cooperate with their friends. The analysis of the quantitative data from the vocabulary, interpretive reading comprehension, and critical literacy tests was conducted in three stages: (a) preparing the data, (b) conducting a normality test on the data, and (c) conducting the correlational analysis. In the research data stage, the student's answers were scored to provide data for the statistical analysis. The results of the vocabulary test are seen from the average at each level. The reading comprehension test consisted of 35 questions, while the

critical literacy consisted of 40 questions. The scoring follows the following formula:

$$\text{Score} = \frac{\text{Correct numbers}}{\text{Total number of questions}} \times 100\%$$

Before the statistical analysis, the normality test was conducted because correlational analysis requires that the variable is approximately normally distributed within each group. In this research, the Shapiro-Wilk test, provided by the SPSS software, was used as the normality test. The third stage of the data analysis was the correlational analysis, using the SPSS programme. According to the normality test, the Spearman test was used to determine the correlation between vocabulary and reading comprehension, and vocabulary mastery and critical literacy. The Pearson correlation was employed to determine the correlation between reading comprehension and critical literacy. In addition, the correlation between the three variables was analysed using multiple regression. The hypotheses testing will be done at an alpha level of .01, while the coefficient of correlation is addressed in Table 2.

Table 2. The level criteria of correlation coefficient

Correlation coefficient	Category
0.81–1.00	Perfect correlation
0.61–0.80	Strong correlation
0.41–0.60	Moderate correlation
0.21–0.40	Weak correlation
0.00–0.20	No correlation

RESULTS

Data Description

The data description in this research covers the score distribution of each variable, which is vocabulary mastery, reading comprehension, and critical literacy. Out of the overall population consisting of 101 students from 6 classes, 69 representative students from each class who were enrolled in the second semester's Interpretive Reading course were involved. In general, participants' test scores on all variables suggested a mean score of approximately 60 to 78, with the vocabulary mastery test receiving the greatest mean score (78.70) and reading comprehension having the lowest mean score (60.09), while the critical literacy test shows an average score of 70.13.

The first result is the vocabulary mastery test score. About 64% of the participants were able to reach the excellent category, with just a few students receiving a maximum score, while 7% gained a B grade, 14% recorded a C grade, 12% obtained a D grade, and a small fraction of 3% students remain at the bottom with a minimum score of 20, as seen in the vocabulary mastery results illustrated in Table 3. Future studies may need to address this problem.

Table 3. Score distribution of vocabulary mastery

Scores	Grade	Category	Number of students	%	Mean	Minimum	Maximum
86–100	A	Excellent	44	64	78.70	20.00	100.00
66–85	B	Good	5	7			
46–65	C	Fair	10	14			
26–45	D	Poor	8	12			
Below 25	E	Very poor	2	3			
Total			69	100			

Table 4 summarises the reading comprehension score distribution. Given that the mean score for the reading comprehension test is only 60.09, with a maximum score of 88, the findings show that students did not perform well compared to other variables. This is, 3% of students gained excellently, 42% of students received fair and good grades, 12% gained poor scores, with the other students falling into the very poor category, with the minimum score of reading comprehension being just 12.

Table 4. Score distribution of reading comprehension

Scores	Grade	Category	Number of students	%	Mean	Minimum	Maximum
86–100	A	Excellent	2	3	60.09	12.00	88.00
66–85	B	Good	29	42			
46–65	C	Fair	29	42			
26–45	D	Poor	8	12			
Below 5	E	Very poor	1	1			
Total			69	100			

According to the Table 5, where the critical literacy test scores are presented, there was only a student who classified as excellent with a score of 88. As most of the students are in the good and fair category with percentages of 68% and 29%, respectively, one gained a minimal critical literacy score of 40%, resulting in no student falling in the very poor category.

Table 5. Score distribution of critical literacy

Scores	Grade	Category	Number of students	%	Mean	Minimum	Maximum
86–100	A	Excellent	1	1	70.13	40.00	88.00
66–85	B	Good	47	68			
46–65	C	Fair	20	29			
26–45	D	Poor	1	1			
Below 5	E	Very poor	0	0			
Total			69	100			

Hypothesis Testing

The correlation between vocabulary mastery and reading comprehension

The Spearman test was run to examine the relationship between vocabulary mastery and reading comprehension, as the normality test indicated that the data were not normally distributed (sig. < 0.005), as shown in Table 6. The significance values of vocabulary and reading comprehension were 0.00 and 0.039, respectively, confirming the non-normal distribution of the data.

Table 6. Normality test of vocabulary mastery and reading comprehension

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Vocabulary	0.259	69	0.000	0.785	69	0.000
RC	0.110	69	0.039	0.962	69	0.036

Note: a. Lilliefors significance correction

In Table 7, the correlation analysis of vocabulary mastery and reading comprehension is presented. In general, there is a moderate correlation between these two variables, with a significance value of 0.00 and a correlation coefficient of 0.49.

Table 7. Correlation result of vocabulary mastery and reading comprehension (RC)

			Vocabulary	RC
Spearman's rho	Vocabulary	Correlation coefficient	1.000	0.487**
		Sig. (2-tailed)	.	0.000
		N	69	69
	RC	Correlation coefficient	0.487**	1.000
		Sig. (2-tailed)	0.000	.
		N	69	69

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

The correlation between vocabulary mastery and critical literacy

The normality test was employed to determine the normality of vocabulary mastery and critical literacy data. Vocabulary mastery data is not normally distributed similar to the previous analysis, yet the critical literacy data is normal with significant values is 0.000 and 0.037, respectively (Table 8). Consequently, the correlation was analysed using Spearman correlation.

Table 8. Normality test of vocabulary mastery and critical literacy (CL)

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Vocabulary	0.259	69	0.000	0.785	69	0.000
CL	0.110	69	0.037	0.953	69	0.011

The data in Table 9 portrays that vocabulary mastery are correlated with critical literacy as the sig value is 0.000 which indicates that the alternative hypothesis is accepted in this circumstance. In addition, vocabulary mastery represents 42.7% of critical literacy, indicating a positive and moderate level of relationship.

Table 9. Correlation result of vocabulary mastery and critical literacy (CL)

			Vocabulary	CL
Spearman's rho	Vocabulary	Correlation coefficient	1.000	0.427**
		Sig. (2-tailed)	-	0.000
		N	69	69
	CL	Correlation coefficient	0.427**	1.000
		Sig. (2-tailed)	0.000	.
		N	69	69

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

The correlation between reading comprehension and critical literacy

In order to examine the relationship between reading comprehension and critical literacy, the Pearson product-moment was run since the normality test result shows that both variables, reading comprehension and critical literacy, are normally distributed with sig. value > 0.005, which can be seen in Table 10. Furthermore, the significant value of the correlation indicates that there is a significant correlation between reading comprehension and critical literacy, which is presented in Table 11. The coefficient reached 0.618, which implies a strong correlation even though it is not perfect. It can be inferred that a student's critical literacy is likely to rise by 61.8% when their reading comprehension level does.

Table 10. Normality test of reading comprehension (RC) and critical literacy (CL)

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
RC	0.110	69	0.039	0.962	69	0.036
CL	0.110	69	0.037	0.953	69	0.011

Table 11. Correlation result of reading comprehension (RC) and critical literacy (CL)

		RC	CL
RC	Pearson correlation	1	0.618**
	Sig. (2-tailed)		0.000
	N	69	69
CL	Pearson correlation	0.618**	1
	Sig. (2-tailed)	0.000	
	N	69	69

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

The correlation between vocabulary mastery, reading comprehension, and critical literacy

Addressing the research objective, multiple regression was employed to examine the relationship between the independent variable (vocabulary mastery and reading comprehension) and the dependent variable (critical literacy). The correlation coefficient (R), which is presented in Table 12, is 0.622, demonstrating a strong correlation between these three variables. Meanwhile, the R-squared value (R^2) indicates that vocabulary mastery and reading comprehension take up 38.6% of critical literacy, with additional factors perhaps accounting for the remaining 61.4%. Additionally, since the F-value in Table 13 is greater than the F table (F-value 20.778 > F Table 3.136), it implies that vocabulary mastery and reading comprehension have a simultaneous impact on critical literacy.

Table 12. Correlation result of vocabulary mastery, reading comprehension, and critical literacy

Model	R	R^2	Adjusted R^2	Std. error of the estimate
1	0.622[a]	0.386	0.368	7.843

Note: a. Predictors: (Constant), reading comprehension, vocabulary mastery

Table 13. F test results for vocabulary mastery, reading comprehension, and critical literacy

Model	Sum of squares	df	Mean square	F	Sig.
1 Regression	2556.105	2	1278.052	20.778	0.000[b]
Residual	4059.721	66	61.511		
Total	6615.826	68			

Notes: a. Dependent variable: Critical literacy (CL); b. Predictors: (Constant), reading comprehension (RC), vocabulary mastery

Additionally, Table 14 shows how each independent variable influences the dependent variable. There is a lack of correlation between vocabulary mastery and critical literacy, as evidenced by the t-value for vocabulary mastery considerably smaller than the t table

(0.682 < 1.996). With a regression coefficient of 0.031, an increase in vocabulary mastery corresponds to a 0.031 increase in critical literacy. Meanwhile, reading comprehension indicates a significant influence on critical literacy since the t-value 5.151 > 1.996. Reading comprehension has a regression coefficient of 0.393, meaning that an increase in reading comprehension will result in a 0.393 increase in critical literacy. In summary, the critical literacy variable is mostly influenced by the reading comprehension variable.

Table 14. Partial influence testing

Model	Unstandardised coefficients		Standardised coefficients	*t*	Sig.
	β	Std. error	*β*		
1 (Constant)	43.663	4.284		10.193	0.000
Vocabulary	0.031	0.046	0.077	0.682	0.498
RC	0.393	0.076	0.579	5.152	0.000

Note: a. Dependent variable: Critical literacy (CL)

DISCUSSION

Three tests, vocabulary mastery, reading comprehension, and critical literacy, were used to gather data from 69 second-semester students who enrolled in an interpretive reading course. The findings reveal that the second-semester students remain challenged in the interpretive reading course since the mean score was about 60 out of 100. Interestingly, the critical literacy test yielded a higher mean score (70.13) despite being a more complex skill. This can be attributed to students' familiarity with the presidential election, which was the topic of the critical literacy test. These results align with previous studies (Adel & Hassani, 2014; Kurt-Taşpınar & Çubukçu, 2020; Wexler et al., 2020), which suggest that cultural and linguistic gaps are key challenges for foreign language learners in text comprehension. The data indicate that students' ability to grasp meaning is significantly influenced by their prior knowledge and engagement with a topic, reinforcing the idea that comprehension improves when learners are familiar with the subject matter. This is in contrast to reading test topics, such as the Israel-Palestine conflict, which contains a large number of new symbols and vocabulary. With the mean vocabulary mastery score of 78.70, which may be interpreted as good, students still need to improve their vocabulary mastery since this score fails to sufficiently represent their understanding of new topics.

The adopted correlational design has allowed this study to analyse the relationship between the targeted variables. Two separate stages of data analysis were conducted: the first looked for a correlation between each two variables (vocabulary mastery and reading comprehension, reading comprehension and critical literacy, and reading comprehension and critical literacy), and the second used multiple regression to look for a correlation between three variables (vocabulary mastery and reading comprehension as independent variables and critical literacy as a dependent variable). Similar results were discovered from two stages of the analysis. Although vocabulary serves as the basis for reading

comprehension and is involved in students' critical literacy skills, the mean score of their reading comprehension test is relatively low compared to other variables. Lam et al. (2024), Rahmah et al. (2023), and Widyantoro (2021) suggested that vocabulary plays a critical role in bridging the gap between reading comprehension and early literacy skills prediction. Thus, the present research findings do not align with these past studies.

As with earlier studies on similar topics, this study also shows that there is a notable, although not strong, relationship between vocabulary mastery and reading comprehension, evidenced by a correlation coefficient of 0.487. As vocabulary mastery increases, reading comprehension also tends to improve, albeit moderately. It strengthens the interdependence between vocabulary mastery and reading comprehension as studies have repeatedly demonstrated that relationships (Zhang & Anual, 2008; Guo & Roehrig, 2011; Yildirim et al., 2011; Suggate et al., 2018; Masrai, 2019; Manihuruk, 2020; Sholihah & Widyantoro, 2021; Lam et al., 2024). Yet, this finding does not justify the findings of Bishry (2018), who found that vocabulary mastery did not predict students' ability to understand a text.

Furthermore, the relationship between vocabulary mastery and critical literacy has not received much attention in the literature, yet this study demonstrates that vocabulary contributes to 42.7% of students' critical literacy skills. This is supported by Suggate et al. (2018) study, which found that vocabulary mastery can predict early literacy skills. Even though vocabulary mastery has a significant role in critical literacy, this moderate correlation implies that it is not the sole factor. Other factors such as critical thinking skills, background knowledge, and reading strategies also likely play significant roles (Luke, 2012; Kaur, 2013; Adel & Hassani, 2014).

Responding to this issue, the current study reveals that the reading comprehension score also explains the critical literacy score since it has a correlation coefficient of 0.618, which indicates a strong correlation. It implies that students who perform better in critical literacy, which entails analysing, evaluating, and interpreting texts, are also substantially more likely to have higher reading comprehension scores. The significant relationship proves the ability to comprehend and analyse textual material serves as an anchor for exploring deeper and more critically into text analysis (Lusnig et al., 2023; Hidayati et al., 2020).

A comprehensive analysis was conducted as well on how vocabulary mastery and reading comprehension explain critical literacy. The results of the multiple regression analysis demonstrate a substantial correlation coefficient of 0.622 between reading comprehension and vocabulary competence, which simultaneously explains critical literacy. Students who excel in critical literacy, which involves analysing, evaluating, and interpreting texts, are likely to have a large vocabulary and excellent reading comprehension skills since mastering vocabulary improves one's ability to comprehend and process texts, which in turn supports deeper critical analysis according to studies by Akpan and Babayemi (2022), Freire and Macedo (2001), and Ramadhani et al. (2024). Additionally, Lam et al. (2024), Manihuruk (2020), Masrai (2019), Rahmah et al. (2023), Guo and Roehrig (2011), Sholihah and Widyantoro (2021), Suggate et al. (2018), Widyantoro (2021), Yildirim et al. (2011), and Zhang and Anual (2008) believe that vocabulary breadth and depth serve as the foundation of reading comprehension, enabling readers to decode, interpret, and construct meaning from texts, which in turn enhances their capacity for critical analysis.

CONCLUSION

This study sheds light on the trend regarding how vocabulary mastery, reading comprehension, and critical literacy are interrelated. As those three variables show a significant correlation, it can be assumed that the development of critical literacy, which entails analysing, questioning, and critiquing texts, requires good reading comprehension skills as well as vocabulary mastery. By identifying biases, thinking critically about the author's intentions, and assessing the reliability and applicability of the material, comprehension empowers students to read at a deeper level than they might otherwise. Besides, the flow and meaning of what students read can be disrupted when they run into unfamiliar vocabulary, as their comprehension may waver. As a result, vocabulary knowledge and reading comprehension are closely related, with vocabulary knowledge serving as the foundation for comprehension. On the other hand, comprehension as the main means of nurturing the fundamentals of critical literacy skills is necessary for both academic success and becoming responsible citizens.

Important pedagogical implications result from the findings, which highlight the necessity of incorporating reading comprehension strategies and vocabulary development into literacy instruction. Critical literacy is greatly influenced by both vocabulary knowledge and reading comprehension. Therefore, teachers should redesign lesson plans that promote a balance between decoding, comprehension, and critical text engagement. Instead of defining critical literacy and reading comprehension as distinct abilities, assessment models must include activities that call for both critical engagement and comprehension, like analysing arguments, contrasting viewpoints, and challenging sources.

From a theoretical standpoint, this study advances literacy research by offering empirical proof of the connections among vocabulary mastery, reading comprehension, and critical literacy in an EFL setting. This research emphasises how vocabulary skills not only promote comprehension but also indirectly shape critical literacy, even if existing theories emphasise the importance of understanding in meaning-making. The findings support the lexical threshold hypothesis, which holds that higher-level reading abilities, such as critical engagement with texts, depend on having a solid vocabulary basis.

Furthermore, future research should explore additional factors influencing critical literacy, as vocabulary mastery and reading comprehension account for only 38.6% of its variance, leaving 61.4% explained by other variables. Additionally, the sample size and test types may affect the generalisability of the findings. To enhance the relevance and validity of the results, future studies should include larger and more diverse participant groups and examine longitudinal effects to track the development of students' literacy skills over time.

ACKNOWLEDGEMENTS

The researchers would like to thank Universitas Negeri Malang, Indonesia for funding this research through the 2024 Research Grant.

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