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Linking thought and text: The relationship between critical thinking and reading performance

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Abstract: The purpose of this study was to determine whether or not there is a correlation between the critical thinking skills of students and the level of reading comprehension that they demonstrate. To examine this relationship, the researchers employed a reading comprehension test adapted from the TOEFL proficiency framework alongside a critical thinking assessment. The data were evaluated using Pearson's Product-Moment Correlation, which demonstrated that there is a relationship between the two variables that is statistically significant. The results demonstrated a strong positive correlation between students' levels of critical thinking and their reading comprehension scores. Moreover, students with high critical thinking abilities had significantly enhanced performance on the reading comprehension assessment relative to their peers with low critical thinking capabilities. These findings suggest that critical thinking plays a crucial role in the process of understanding written texts and may have meaningful implications for students' academic development, particularly in the context of language learning.

Keywords: Reading comprehension, Critical thinking, EFL, Language learning

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INTRODUCTION

The capacity for critical thinking and effectively is widely regarded as a fundamental and indispensable outcome of both life and education. Individuals who possess strong critical thinking skills demonstrate advanced capabilities in analysing and evaluating information, thereby enabling effective problem-solving. Furthermore, critical thinking fosters logical reasoning, the interpretation of evidence, and the discovery of previously overlooked insights. In contemporary education, it is increasingly viewed as a core academic competence essential for lifelong learning and informed decision-making (Zohar & Barzilai, 2015). It involves the capacity to systematically acquire, assess, and apply information with intellectual rigour.

Enhancing students' critical thinking abilities significantly contributes to their academic and professional success, equipping them with essential competencies such as effective communication, leadership, collaboration, and intercultural awareness—attributes necessary for meaningful societal engagement (Zivkovic, 2016).Similarly, Larsson (2017) emphasises that fostering critical thinking is a highly valued educational goal. Despite its growing importance in the modern world, critical thinking has received limited pedagogical attention, particularly within English Language Teaching (ELT) contexts. Recent research has underscored the essential importance of critical thinking in language acquisition; nonetheless, its incorporation into English Language Teaching (ELT) techniques, particularly in English as a Foreign Language (EFL) contexts, is still inadequate. Many learners continue to face challenges in developing these skills. The cultivation of critical thinking among students has become an increasingly central theme in higher education research and policy. Numerous studies underscore the importance of equipping learners with the capacity to thrive in their careers, actively participate in civic life, and engage in lifelong learning. Critical thinking is essential in the educational process (Nosratinia & Hossaini, 2017). The intrinsic link between critical thinking and learning stems from the premise that intentional, reflective thought promotes deeper knowledge acquisition, and conversely, meaningful learning enhances one's capacity for critical analysis. Fahim and Vaseghi (2012) similarly argue that internal factors—most notably the ability to think critically—exert a substantial influence on educational outcomes.

Critical Thinking

According to Wilson (2016), Critical thinking is an essential element that significantly influences both social interaction and academic advancement. It is crucial in the learning process (Golpour, 2014; Lira et al., 2022; Maab et al., 2024; Nguyen & Nguyen, 2020; Yousefi & Mohammadi, 2016). The correlation between critical thinking and learning is deeply interwoven; when individuals engage in critical thought regarding a subject, they inevitably gain a deeper understanding of it. Conversely, effective learning necessitates continuous critical engagement with the subject matter. Din (2020) argues that critical thinking requires the analytical capacity to interpret factual information and integrate the results of this analysis into meaningful, goal-oriented activities. Its primary function is to support reasoned decision-making through deliberate reflection on multiple perspectives and alternative solutions. Similarly, the critical thinking involves structuring information, making informed judgments, and resolving differences through logical reasoning (Kleemola et al., 2021). Critical thinkers are characterised by their ability to evaluate and synthesise information based on sound evidence and coherent argumentation. These cognitive processes include sub-skills such as interpretation, inference, explanation, evaluation, and metacognition, all of which collectively enhance a learner's intellectual autonomy and academic performance (Purba & Lubis, 2019). The development of critical thinking skills not only contributes to students' academic success but also serves as a key

asset in their future professional endeavours. Among the most effective strategies for fostering such skills is reading, which nurtures analytical reasoning, broadens perspectives, and encourages new insights into both personal and global contexts. Through reading, learners are better equipped to critically evaluate arguments, form well-reasoned conclusions, and identify logical flaws in texts. Moreover, these competencies enable students to interpret their surroundings more effectively and prepare themselves for future challenges.

Reading Comprehension

Reading is not a straightforward task—it challenges the reader to bring together what they already know with what the text offers. This blend of past knowledge and new information makes reading a mentally demanding activity. Both the writer and the reader play a part in shaping meaning; the reader interprets the text through the lens of their own experiences and understanding. Reading comprehension is an essential talent in the teaching and learning process (Amumpuni, 2021). It is at the core of education and personal growth, and it is a process that involves a variety of facets, is interactive, and makes use of skills.

For students, reading comprehension is more than just recognising words—it's about engaging with the text, thinking critically, and making sense of what they read (Amumpuni et al., 2024; Marzban & Davaji, 2015; Suyanto et al., 2024). This process is deeply cognitive, involving the active participation of the reader before, during, and after reading. It is through this mental effort that learners gain insights and expand their understanding of various subjects. Critical thinking becomes especially important here because reading comprehension is not just about absorbing information, but also about questioning, analysing, and connecting ideas. Meaning doesn't come solely from the words on the page—it emerges from the interaction between the reader's background knowledge and the content of the text. That's why nurturing critical thinking is essential in helping students become thoughtful, independent readers who truly understand what they read.

In light of these considerations, it might be claimed that a skilled reader needs a broad range of skills and competences in order to do well on reading examinations.Among these, critical thinking plays a particularly vital role. Recent studies, such as that by Zivkovic (2016), have highlighted that critical thinking is essential for effective text comprehension. While much of the existing research has been theoretical in nature, some studies have taken a more practical approach, investigating how critical thinking relates to reading comprehension in real-world contexts. A limited number of correlational studies (Hassani et al., 2013; Yousefi & Mohammadi, 2016; Zubaidah et al., 2018) have identified a positive relationship between an individual's ability to think critically and their reading comprehension skills. However, these studies have predominantly focused on school-aged learners, with relatively few exploring this relationship among university students. To address this gap, the present study aims to examine the correlation between varying levels of critical thinking and reading comprehension abilities among undergraduate students in higher education. Accordingly, the research is guided by the following questions: 1) Is there a correlation between critical thinking and reading comprehension skills?; 2) Do students with high and low levels of critical thinking differ in their reading comprehension performance?

METHODS

Research Design

Correlational research with an explanatory design is used in this study. According to Creswell (2012), correlational design is another type of research that does not involve experiments. In the process of doing this form of research, researchers make use of correlational statistics to characterize and evaluate the degree of connection (or link) that exists between two or more variables or sets of scores. The design is implemented to build a correlation between students' capacities for critical thinking and their abilities to comprehend what they read.

Participant

The sample is the group of subjects or research participants from whom the data are collected. It will become a target of the main point of research sampling. The sample of this study enrolled 30 freshman students.

Material

The critical thinking questionnaire and the reading comprehension test are the two instruments that can be employed to gather the data. An instrument of Critical Thinking Test based on Facione (2016) was applied to know the students' level of critical thinking. The study concerned the participants' reading comprehension using the TOEFL proficiency test in reading passages with four possible answers. There is a 30-question test that includes finding the main idea, specific details, references, and meaning of vocabulary. In thirty items, each containing eight paragraphs, the students were believed to answer multiple-choice questions. The test lasted thirty minutes, and each student worked independently to complete it. We used a dichotomous scoring method, meaning that the correct answer received a score of one (1), while the incorrect response received a zero (0). A percentage was computed to determine the overall score.

Procedure

This study employed a quantitative correlational design to examine the relationship between students' critical thinking skills and their reading comprehension performance. Data from 30 students were collected using a reading comprehension test and a critical thinking questionnaire. After ensuring the normality and linearity assumptions through Shapiro-Wilk testing and scatter plot inspection, a Pearson Product-Moment Correlation analysis was conducted using SPSS version 22. To further assess group differences, an independent samples t-test was conducted to compare reading comprehension scores between students with high and low critical thinking levels.

Data Analysis

A t-test is utilized in this investigation using the Pearson Product Moment (r) calculation. In order to determine whether or not there is a substantial correlation between two variables, a technique that is usually known as the correlation statistic is utilised. This strategy is used to verify the nature of the relationship that exists between two variables that have substantial correlation findings of quantitative qualities, as well as to determine the extent of the connection that exists between two variables when it comes to establishing the nature of the relationship that exists between two variables. An analysis of the Pearson product-moment correlation is carried out in SPSS version 22 to ascertain the

degree of correlation between the outcomes of the reading test and the questionnaires of critical thinking that the students filled out.

RESULTS

One of the primary objectives of the first study question was to evaluate whether or not there is a significant correlation between the critical thinking abilities of students and their reading comprehension abilities. This section presents the findings that shed light on the relationship between students' capacity for critical thinking and their capacity to comprehend the material that they read with comprehension. It is common practice to show the reading comprehension test results by noting the highest and lowest scores. To determine the students' critical thinking levels, the researcher utilized a questionnaire test that would be administered in the classroom setting. The researcher then presents the findings regarding the correlation among students' level of critical thinking and reading comprehension abilities by utilizing the SPSS 22 Version.

Based on the previously outlined data analysis procedure, the relevant findings are presented as follows. Table 1 gives a descriptive summary of the data, which includes the minimum and maximum scores, as well as the mean and standard deviation for the scores that students received in critical thinking and reading comprehension. The following table provides a comprehensive summary of the students' performance across both variables, and these descriptive statistics provide an overview of that performance.

As shown in Table 1, the descriptive data for critical thinking and reading comprehension were obtained from a sample of thirty students. The critical thinking scores ranged from 55 to 92, with an average score of 74.40 and a standard deviation of 10.67, suggesting moderate variation in students' performance levels. The mean score was lower than the standard deviation. Reading comprehension scores, on the other hand, ranged from 58 to 96, with a mean of 78.37 and a standard deviation of 11.04, indicating that there was slightly more variety in performance. The central tendency and variability of both conceptions may be understood with the help of these values, which provide a foundational understanding.

TABLE 1. *Descriptive statistics*

Data	N	Minimum	Maximum	Mean	Std. Deviation
Ctitical Thinking	30	55	92	74.40	10.669
Reading Comprehension	30	58	96	78.37	11.044

TABLE 2. *Tests of normality*

Data	Shapiro-Wilk		
	Statistic	df	Sig.
Ctitical Thinking	.968	30	.494
Reading Comprehension	.962	30	.352

TABLE 3. *Correlations between critical thinking and reading comprehension*

Data		Critical Thinking	Reading Comprehension
Critical Thinking	Pearson Correlation	1	.997
	Sig. (2-tailed)		.000
	N	30	30
Reading Comprehension	Pearson Correlation	.997	1
	Sig. (2-tailed)	.000	
	N	30	30

TABLE 4. *Group statistics of high and low critical thinkers*

Data	Group	N	Mean	Std. Deviation	Std. Error Mean
Critical Thinking	A	15	87.67	5.4729	1.4131
	B	15	69.07	6.1117	1.5780

TABLE 5. *Independent samples test*

Data		F	Sig.	t	df	Sig. (2-tailed)
Reading Comprehension	Equal variances assumed	.268	.608	8.781	28	.000
	Equal variances not assumed			8.781	27.666	.000

The normality test determines if the distribution of data between two variables conforms to the assumption of normality. Normality test used Shapiro-Wilk. Data can be up to normal if the data had Sig. Value < 0,05, and if the data had Sig ≥ 0.05, it was called normal. Based on Table 2 the normality test used Shapiro-Wilk, it has known Sig. Value 0.494 and 0.352, it was more than Sig. 0.05. So, the data above can be said as normally distributed.

The outcomes of the Pearson correlation analysis, assessing how students' critical thinking relates to their reading comprehension performance, are detailed in Table 3. The analysis revealed a robust positive correlation, indicated by a Pearson correlation value of r = .997, which is statistically significant at the 0.01 level (2-tailed). This suggests that students possessing higher critical thinking skills typically attained higher reading comprehension scores. The p-value (p = .000) confirms that this correlation is highly unlikely to have occurred by chance, demonstrating strong statistical significance. The data from 30 students indicate a strong correlation between critical thinking abilities and reading comprehension ability within this group. In summary, the results of the study indicate that critical thinking is a significant factor in determining how well one can comprehend what they read, reinforcing the idea that these two skills are deeply interconnected in the learning process.

The second research question explored whether students demonstrating higher critical thinking abilities differ significantly in their reading comprehension performance compared to those with lower critical thinking skills. The researchers were particularly interested in exploring the potential relationship between these two variables. To investigate this, an independent samples *t*-test was employed. Based on the overall mean score for critical thinking (M = 74.50), participants were divided into two groups: high and low critical thinkers. The criteria for this classification were derived from the average of the highest (87.67) and lowest (69.07) mean scores obtained by the students, as shown in Table 4. This cut-off point was determined using the mean score as a reference. Of the 30 participants, 15 were categorized as high-level critical thinkers, while the remaining 15 were grouped as low-level critical thinkers. The descriptive statistics for both groups are presented in Table 4.

An independent samples t-test was utilized in this study to assess whether a statistically significant difference existed in reading comprehension scores between the two groups. The data in Table 5 shows that students who were good at critical thinking understood what they read a lot more than their classmates who were not so good at it. For this result, the p-value from the two-tailed significance test was less than 0.05 (p <.05), which means that the difference between the groups is statistically significant. The results suggest that students with higher critical thinking skills are more effective at processing and understanding written information.

DISCUSSION

A substantial body of prior research has demonstrated a strong correlation between learners' critical thinking skills and their reading comprehension performance (Albeckay,

2014; Bagherkazemi & Alemi, 2010; Fahim et al., 2012; Karimi & Veisi, 2016; Younis et al., 2023; Zare & Biria, 2018). The findings of the current study show that they are in alignment with the previous research that has been done. Albeckay (2014), for instance, found that the critical thinking skills of English as a Foreign Language (EFL) learners and their ability to understand written texts were positively and closely related. In line with these earlier findings, the present study suggests that learners who demonstrate higher levels of critical thinking are better equipped to process, interpret, and engage with reading passages. This indicates that critical thinking enables students to draw inferences, make reasoned decisions, and thereby enhance their reading comprehension. Consistent with these findings, Bagherkazemi and Alemi (2010) observed significant correlation between reading comprehension and critical thinking but determined that variables such as gender and proficiency level had no significant effect on the correlation.

Kamali and Fahim (2011) investigated the connection between learners' critical thinking skills and reading performance, revealing a strong positive relationship. Their research emphasizes the importance of critical thinking in fostering effective academic reading among language learners. Supporting this view, Talebinezhad and Matou (2012) also discovered a positive relationship between students' critical thinking skills and their reading comprehension proficiency. Similarly, Fahimet all (2012) found that critical thinking exerts a beneficial influence on reading comprehension performance.

Additional empirical evidence reinforces this connection. Studies by Danaye Tous et al. (2015), Yousefi and Mohammadi (2016), and Zare and Biria (2018) consistently indicate a moderately strong correlation between critical thinking and critical reading comprehension The research conducted by Barjesteh and Vaseghi (2012) demonstrated a meaningful association between EFL learners' ability to think critically and their reading comprehension outcomes. Likewise, Hassani and Barbaei (2012) explored this dynamic among Iranian learners, asserting that critical thinking serves as a key component in acquiring language skills effectively. Their findings underline a substantial correlation, suggesting that critical thinking is a key contributor to language mastery and comprehension proficiency.

The results of the study revealed a meaningful and positive association between students' critical thinking skills and their reading comprehension performance. Students who actively engage in critical thinking—through reflection, evaluation, and analytical reading—are more capable of forming reasoned judgments and deriving meaning from texts. Critical thinking involves assessing the credibility of information in relation to prior knowledge and real-world understanding, which enhances their ability to process and comprehend written material.

CONCLUSION

The current research reinforces the notion of a significant and positive connection between students' critical thinking capabilities and their reading comprehension skills. Individuals with more advanced critical thinking are generally more proficient in analyzing, interpreting, and interacting with textual content. Cultivating such cognitive abilities supports learners in making inferences, evaluating information credibility, and constructing coherent interpretations—all of which are essential components of effective reading comprehension. This relationship is evident across diverse educational settings, highlighting the need to embed critical thinking activities within reading instruction, especially in language learning environments. Future investigations should continue examining this connection through experimental or longitudinal studies and consider additional factors such as learner motivation, thinking styles, and instructional strategies. Strengthening critical thinking not only enhances reading skills but also contributes meaningfully to overall academic growth and the pursuit of lifelong learning.

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