

The Effect of Quora-Based Extensive Reading on EFL Students' Critical Thinking Skills in Higher Education

 <https://doi.org/10.31004/jele.v11i1.2144>

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A B S T R A C T

Critical thinking is a key competence in English as a Foreign Language (EFL) learning, particularly in higher education. This study examines the effect of extensive reading on Quora on EFL students' critical thinking at the English Language Education Department, Universitas Islam Riau. A quasi-experimental design was employed involving 60 second-semester students divided into an experimental group (n = 30) and a control group (n = 30). The experimental group received extensive reading instruction using Quora, while the control group used conventional materials. Data were collected through pre-test and post-test assessments, adapting Facione's critical thinking framework. The outcome revealed that the experimental group's mean score increased from 62.40 to 78.60, and the control group improved from 61.90 to 69.30. An independent samples t-test revealed a significant difference between groups ($t = 4.85, p < 0.05$). These findings indicate that Quora-based extensive reading effectively enhances EFL students' critical thinking.

Keywords: *Extensive Reading, Quora, Critical Thinking, EFL Students, Digital Learning*

Article History:

Received 16th January 2025

Accepted 19th February 2026

Published 20th February 2026



INTRODUCTION

In the context of English Language Education at Universitas Islam Riau, digital technology has gradually influenced learning reading instruction is implemented in higher education. Lecturers are required to integrate digital platforms that are not only accessible but also familiar to students' daily learning practices (Hampel & Stickler, 2019 ; Benson & Reinders, 2020). Students today are immersed in digital environments that provide instant access to information, interaction, and global perspectives. Consequently, EFL pedagogy is increasingly required to integrate digital resources that align with students' learning habits and support higher-order thinking skills (Partnership for 21st Century Skills, 2019). Among these skills, critical thinking is an essential learning outcome in 21st-century education (Facione, 2020).

Reading is essential for developing critical thinking in EFL environments (Wallace, 2019 ; Grabe & Stoller, 2020). Reading is an active cognitive process that includes interpretation, inference, and assessment in addition to being a receptive skill. It is well known that extensive reading is an effective strategy for enhancing vocabulary, reading fluency, and overall language proficiency because it motivates students to read many comprehensible texts for enjoyment (Day & Bamford, 2020 ; Nation, 2020). However, especially at the tertiary level, extended reading habits that rely solely on printed textbooks or simplified texts might not be enough to encourage students' critical engagement.

Several studies have reported that EFL students often demonstrate limited critical thinking skills when engaging with academic texts (Zhang, 2018; Alnofaie, 2020). This fact is caused by teacher-centered instruction, a lack of authentic materials, and insufficient opportunities for students to engage in analytical and evaluative reading tasks. As a result, students may focus more on surface-level comprehension rather than deeper meaning construction. In reading instruction, authentic materials are recommended to develop students' critical thinking (Gilmore, 2019; Akbari & Razavi, 2018). Authentic materials, by using real-world language, encourage students to think critically and present diverse perspectives. In line with Reynolds (2011), students engaged in strong critical thinking give due consideration, for instance, by establishing evidence through reality. Critical thinking also teaches students to be able to analyze, evaluate and interpret information objectively. To answer this challenge, an innovative teaching transformation is needed that integrates authentic, interesting, and interactive reading materials.

Quora, a communal question-and-answer website where users submit questions and provide answers based on their own experiences, knowledge, and reasoning, is one digital medium with potential for extended reading in EFL. Quora provides a wealth of genuine reading material, including contentious texts, opposing points of view, and real-life problems. Despite its potential, there has been little empirical research on extensive reading on Quora in Indonesian EFL higher education. This study aims to close this gap by examining the impact of extensive Quora-based reading on EFL students' critical thinking. Prior research has shown that social media and online platforms can support language learning by increasing motivation, autonomy, and interaction. During preliminary observations in reading classes, the researchers discovered that students were already exposed to Quora outside of formal instruction, but the platform was rarely used as a structured reading resource.

Critical Thinking in EFL Contexts

Critical thinking in an EFL (English as a Foreign Language) classroom is the active, purposeful process of analyzing, evaluating, and questioning information rather than merely accepting it, directly enhancing both language proficiency and higher-order cognitive skills. It empowers learners to move beyond rote memorization, enabling them to construct meaning, solve problems, and form reasoned judgments in English (Ennis, 2018 ; Facione, 2020). It entails not only processing information but also challenging assumptions, evaluating other views, and reaching conclusions based on facts. In educational settings, critical thinking is seen as a higher-order cognitive ability that helps students develop into autonomous, thoughtful, and accountable thinkers. Critical thinking has emerged as a key learning goal across all subject areas, including language instruction, as higher education increasingly emphasizes analytical and problem-solving skills.

Critical thinking is essential to language education because it helps students utilize language in meaningful and intentional ways. In EFL situations, critical thinking entails analyzing texts, challenging underlying presumptions, assessing the viability of arguments, and developing well-supported answers. In order to prepare students for participation in academic discourse and international communication, where the capacity to interact critically with material is highly valued, scholars contend that incorporating critical thinking into EFL training is crucial. Higher-order cognitive functions like analyzing, evaluating, and producing are highlighted in Bloom's updated taxonomy. These functions are intimately linked to critical thinking and are thought to be crucial results of successful language learning (Anderson & Krathwohl, 2019).

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considered crucial outcomes of successful language learning. In EFL reading, critical thinking enables learners to progress beyond surface-level comprehension and connect with texts at a deeper cognitive level. Instead of focusing solely on vocabulary or grammatical structures, students are expected to identify the main idea, analyze arguments, evaluate evidence, assess the reliability of sources, and critically respond to authors' opinions. (Grabe & Stoller, 2020; Wallace, 2019). These abilities are especially crucial for academic reading, as texts often present complex concepts and a range of viewpoints that require critical thinking and analysis. (Hyland, 2016). Critical reading helps students acquire the skills necessary for higher-order thinking in second-language literacy, such as interpreting meaning, identifying bias, and connecting textual information to broader social, cultural, and disciplinary contexts. (Facione, 2020 ; Paul & Elder, 2019).

Despite its significance, many EFL students find it difficult to acquire critical thinking abilities through reading exercises. This difficulty is frequently linked to teacher-centered training, a focus on literal comprehension rather than analysis and evaluation, and a lack of exposure to cognitively demanding materials. As a result, students may find it difficult to engage critically with academic literature and may primarily rely on superficial comprehension (Grabe & Stoller, 2020). This circumstance underscores the need for teaching methods that specifically encourage critical thinking through reading exercises, especially by using real, interesting, and thought-provoking resources that motivate students to actively examine and assess textual information. (Facione, 2020).

Extensive Reading and Critical Thinking

Extensive reading has been extensively utilized in EFL contexts as an effective method to enhance language development through exposure to substantial volumes of meaningful and comprehensible content. (Day & Bamford, 2020; Renandya & Jacobs, 2019). In addition, learner autonomy, leisure reading, self-selected resources, and texts relevant to learners' competence levels are the fundamental tenets of extended reading. Students are expected to improve their vocabulary, reading fluency, and general language proficiency through consistent engagement with reading resources. Reading has always been seen more as a way to enhance language learning's linguistic components than to develop higher-order cognitive abilities.

However, new studies are beginning to demonstrate that extensive reading can foster critical thinking, especially in higher education settings (Renandya & Jacobs, 2019 ; Day & Bamford, 2020). Reading widely can help students engage with concepts, ideas, themes, and viewpoints across many texts, offering opportunities for evaluation, comparison, and interpretation (Grabe & Stoller, 2020 ; Wallace, 2019). When students encounter varied viewpoints and complex issues through extensive reading, they are more likely to engage in deeper cognitive processing and reflective judgment (Facione, 2020 ; Paul & Elder, 2019).

This implies that extended reading can significantly aid the development of analytical and evaluative thinking skills in EFL environments when it is planned beyond simple language exposure and supplemented with cognitively stimulating texts (Zhou & Brown, 2021). The type of reading material significantly affects the cognitive effects of extensive reading. Students are more likely to engage critically with the curriculum when lengthy reading materials feature authentic, thought-provoking texts. Real-world language use and current topics are presented to students through authentic texts, which pique their interest and foster critical thinking. Additionally, literature that offers arguments, viewpoints, or problem-based information inspires students to challenge concepts, evaluate the evidence, and make their own decisions. Therefore, whether prolonged reading promotes language development alone or also nurtures critical thinking depends critically on the choice of reading materials. (Teng, F, 2020).

Comprehensive reading in fostering critical thinking can be further enhanced by incorporating analytical and reflective tasks alongside material selection. Including follow-up exercises such as group discussions, reflective journals, or assessment questions helps students explain their interpretations and provide evidence for their positions. Through these exercises, students can interact with texts more actively and go beyond passive reading. Thus, in EFL

environments, comprehensive reading programs that incorporate learner autonomy, genuine materials, and reflective tasks have a great potential to enhance the development of both language (Wallace, 2019).

Quora as a Digital Authentic Reading Resource

Quora provides a unique digital environment in which users share knowledge, opinions, and personal experiences through written responses to a wide range of questions (Paul & Elder, 2019). Unlike traditional instructional texts, the content available on Quora is generated by real users and reflects authentic language use in diverse communicative contexts. The texts vary in style, length, and level of complexity, and many responses are argumentative in nature, presenting claims supported by reasoning, examples, and evidence. As a result, readers are exposed to multiple perspectives on the same issue, which encourages comparison, evaluation, and reflection. These characteristics closely align with the pedagogical requirements for fostering critical thinking in EFL reading instruction.

From an educational perspective, authentic digital texts such as those found on Quora allow learners to engage with real-world issues and contemporary topics that are relevant to their interests and experiences. This relevance can increase students' motivation to read extensively and sustain engagement over time. Previous studies on the use of digital platforms in EFL learning have reported positive effects on students' motivation, autonomy, and learning involvement (Dörnyei & Ryan, 2019 ; Lai, 2019). When learners are given opportunities to choose reading topics that match their personal interests, they tend to take greater responsibility for their learning and demonstrate higher levels of cognitive engagement.

Social question-and-answer platforms like Quora also foster critical literacy by requiring readers to actively evaluate the credibility and quality of information (Gilmore, 2019 ; Zhou & Brown, 2021). Through extensive reading of Quora threads, students are encouraged to analyze arguments, identify bias, distinguish facts from opinions, and assess the reliability of sources, which are key dimensions of critical thinking in academic reading (Facione, 2020 ; Wallace, 2019). Moreover, exposure to diverse and often conflicting viewpoints enables learners to reflect on their own assumptions and construct more balanced interpretations of complex issues (Paul & Elder, 2019 ; OECD, 2019). Previous studies have also indicated that engagement with authentic digital texts enhances learners' evaluative judgment and critical awareness in EFL contexts (Lai 2019 ; Zhou & Brown, 2021). Therefore, integrating Quora as a digital authentic reading resource in extensive reading programs has strong potential to support the development of EFL students' critical thinking skills in higher education contexts.

To read and interact via Quora, users must understand the algorithm function. Quora uses an algorithm to display content that matches the user's interests. When creating an account, users are asked to choose a topic of interest, such as business, technology, or health. This algorithm will then display relevant questions and answers, enhancing the user experience with content that is interesting and tailored to their preferences. It can be seen in the following figure:

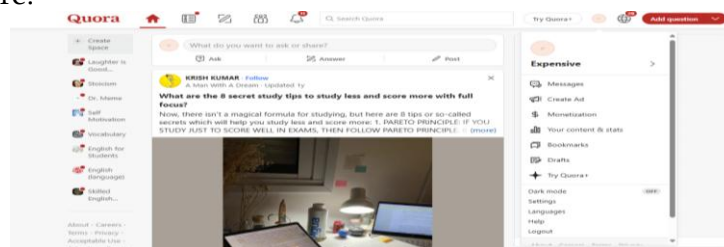


Figure 1.

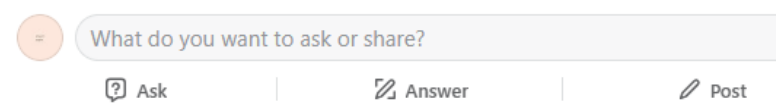


Figure 2. Questions and Answers (Q&A)

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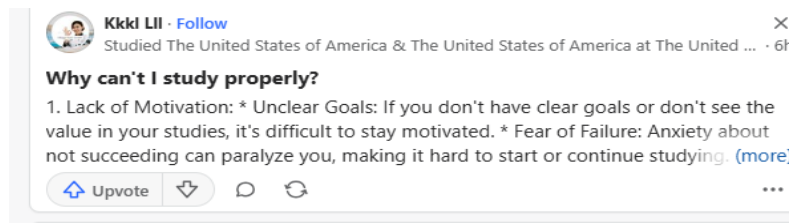


Figure 3. Upvoting and Downvoting

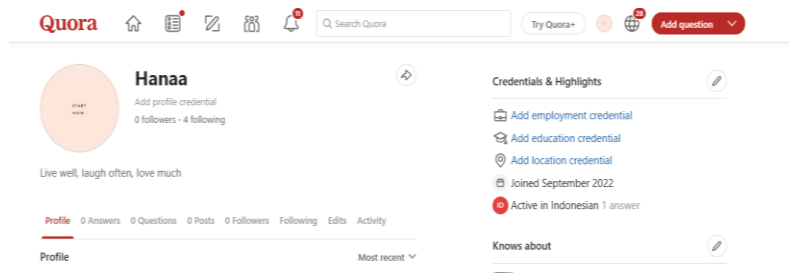


Figure 4. User Profiles and Credentials

Each user has a profile that shows their background, expertise, and areas of interest. This allows readers to judge the credibility of those answering questions, especially when credentials are associated with a particular answer.

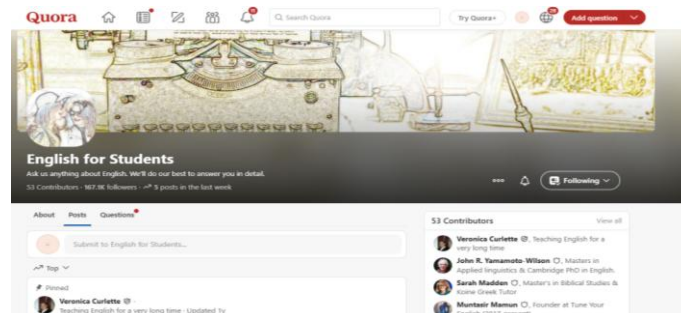


Figure 5. Spaces

Spaces are community-based groups within Quora where users can discuss specific topics in more depth. Spaces allow users to share articles, ask questions, and collaborate on specific areas of interest.

METHOD

The study employed a quasi-experimental design due to institutional constraints that prevented random assignment of participants. Quasi-experimental designs allow researchers to examine the effect of an instructional intervention by comparing outcomes between non-randomized groups while preserving internal validity. Creswell & Creswe (2018) stated that design of quasi-experimental allow researchers to investigate the effect of an instructional intervention by comparing outcomes between non-randomized groups while maintaining a reasonable level of internal validity.

The participants were second-semester students of the English Language Education Department at Universitas Islam Riau. Two intact classes were selected through purposive sampling. The experimental group (n = 30) received an extensive Quora-based reading treatment for 8 weeks, during which students engaged with authentic argumentative texts from Quora and completed structured critical thinking tasks. In contrast, the control group (n = 30) received conventional reading instruction using textbook-based materials covering

similar themes but without exposure to Quora. Both groups were taught by the same lecturer and received equal instructional time to ensure comparability.

Students' critical thinking skills were measured using a researcher-developed test adapted from (Facione, 2020) critical thinking framework. The instrument assessed analysis, inference, and evaluation skills through reading-based questions. Content validity was established through expert judgment, and reliability testing indicated a satisfactory reliability coefficient (Cronbach's α). The illustration of a quasi-experimental research design is shown in Figure 6.

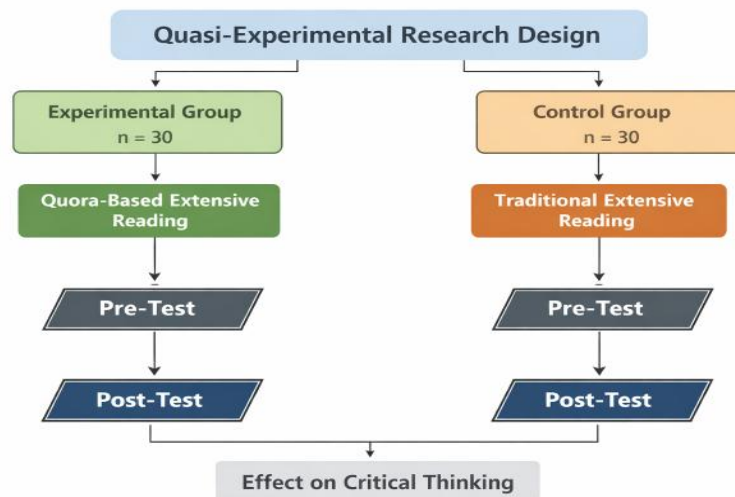


Figure 6. Research design

The study was conducted over eight weeks. Both groups completed a pre-test prior to the treatment. The experimental group participated in Quora-based extensive reading activities, where students read selected Quora threads and engaged in reflective discussions. The control group received conventional extensive reading instruction using printed and PDF texts. At the end of the treatment, both groups completed a post-test.

Descriptive and inferential statistics were used to analyze the data. Mean scores and standard deviations were calculated, and an independent samples t-test was conducted to examine differences between groups.

FINDINGS AND DISCUSSION

This section presents the empirical findings of the study obtained from the analysis of students' critical thinking test scores. The results are organized into descriptive statistics and inferential statistics to provide a comprehensive overview of students' performance before and after the instructional intervention. The analysis focuses on comparing the critical thinking achievement of the experimental group, which received Quora-based extensive reading instruction, and the control group, which was taught using conventional extensive reading materials.

Descriptive statistical analysis was first conducted to examine students' critical thinking performance in both groups at the pre-test and post-test stages. The analysis aimed to identify the initial equivalence between the groups and to observe changes in students' scores after the instructional treatment. Table 1 presents the mean scores and standard deviations of students' critical thinking results for both the experimental and control groups.

Table1. Mean and Standard Deviation of Students' Critical Thinking Scores Group

Group	Test	N	Mean	Std. Deviation
Experimental	Pre-test	30	62.40	6.85
Experimental	Post-test	30	78.60	7.12
Control	Pre-test	30	61.90	6.70
Control	Post-test	30	69.30	6.95

N = number of participants; Std. Deviation = standard deviation.

As shown in Table 1, the pre-test results indicate that the two groups demonstrated similar levels of critical thinking ability prior to the intervention. The experimental group obtained a mean score of 62.40 with a standard deviation of 6.85, while the control group achieved a mean score of 61.90 with a standard deviation of 6.70. The small difference between these scores suggests that both groups started the study with comparable critical thinking proficiency. This similarity indicates that the participants had relatively equivalent baseline abilities, which is an important requirement for ensuring the validity of comparisons in a quasi-experimental design.

After the instructional intervention, both groups showed improvement in their post-test scores. However, the magnitude of improvement differed between the experimental and control groups. The experimental group's mean score increased substantially from 62.40 to 78.60, with a standard deviation of 7.12. This increase reflects a gain of 16.20 points from the pre-test to the post-test. In contrast, the control group's mean score increased from 61.90 to 69.30, with a standard deviation of 6.95, indicating a gain of 7.40 points.

The descriptive results demonstrate that while both instructional approaches contributed to improved critical thinking performance, the experimental group experienced a considerably greater improvement. The higher mean gain observed in the experimental group suggests that the Quora-based extensive reading intervention had a stronger impact on students' critical thinking development compared to conventional extensive reading materials. Additionally, the relatively similar standard deviation values across groups indicate a consistent distribution of scores within each group.

Table 2. Gain Scores of Experimental and Control Groups

Group	Mean Gain	SD
Experimental	15.75	4.20
Control	6.35	3.90

Table 2, indicated that, the experimental group showed a substantially higher mean gain score compared to the control group, indicating a stronger improvement in critical thinking skills following the intervention.

Inferential Statistics: Independent Samples t-Test

To determine whether the difference in post-test scores between the experimental and control groups was statistically significant, an independent samples t-test was conducted. This analysis aimed to examine whether the observed difference in mean scores could be attributed to the instructional treatment rather than chance variation. The results of the independent samples t-test are presented in Table 2.

Table 3. Independent Samples t-Test Results on Students' Critical Thinking Scores

Comparison	Mean Difference	t	df	Sig. (2-tailed)
Post-test (Experimental vs. Control) <i>df = degrees of freedom; Sig. (2-tailed) < .05 indicates a statistically significant difference.</i>	9.30	4.85	58	.000

Table 3 described that the mean difference between the post-test scores of the experimental and control groups was 9.30 points. The t-test analysis produced a t-value of 4.85 with 58 degrees of freedom. The significance value ($p = .000$) was lower than the established alpha level of 0.05, indicating that the difference between the two groups. It mean that t-test results indicate a statistically significant difference between the experimental and control groups ($p < 0.05$), demonstrating that Quora-based extensive reading had a significant effect on students' critical thinking.

The results of the independent samples t-test provide strong statistical evidence that the experimental group outperformed the control group in terms of critical thinking achievement at the post-test stage. This finding indicates that students who participated in Quora-based extensive reading demonstrated significantly higher critical thinking scores than those who received conventional extensive reading instruction.

The findings indicate that Quora-based extensive reading significantly improved students' critical thinking skills. This improvement is attributed to Quora's nature as a platform that provides authentic, argumentative, and opinion-based content. Unlike conventional textbook materials, Quora exposes students to diverse perspectives, claims, counterarguments, and evidence within real-world discussions. Exposure encouraged students to analyze arguments, evaluate credibility, and draw inferences more actively.

Additionally, the interactive, contemporary topics on Quora have increased cognitive engagement, prompting deeper information processing. When learners encounter contrasting viewpoints in authentic digital discourse, they are more likely to engage in higher-order thinking processes rather than merely extracting factual information.

Discussion

This section presents the findings of the study based on descriptive and inferential statistical analyses and discusses their implications for EFL reading instruction. Table 1 summarizes the mean scores and standard deviations of students' critical thinking performance in both the experimental and control groups across pre-test and post-test conditions.

As shown in Table 1, the pre-test results indicate that both groups started with relatively similar levels of critical thinking ability. The experimental group obtained a mean score of 62.40 (SD = 6.85), while the control group achieved a mean score of 61.90 (SD = 6.70). This similarity suggests that the two groups were comparable at the beginning of the study, ensuring the initial equivalence required for a quasi-experimental design. Such comparability strengthens the internal validity of the findings and supports the assumption that any subsequent differences were attributable to the instructional treatment rather than pre-existing ability differences (Creswell, J. W., & Creswell, 2018).

After the eight-week intervention, both groups demonstrated improvement in critical thinking scores; however, the experimental group showed a substantially greater gain. The experimental group's mean score increased from 62.40 to 78.60 (SD = 7.12), while the control group improved from 61.90 to 69.30 (SD = 6.95). Integrating Quora as a digital authentic reading resource produced significant cognitive benefits, even though traditional intensive reading also contributed to some improvement. The data presented here align with prior research indicating that when students engage with real and significant texts, digital prolonged-reading environments can foster greater engagement and higher-order thinking (Xie, Q., & Derakhshan, 2021 ; Renandya, W. A., & Jacobs, 2019; Grabe, W., & Stoller, 2020)

To test the significance of the observed differences in the two samples, an independent samples t-test was conducted on the post-test scores. As shown in table 2, the analysis revealed a mean difference of 9.30 between the experimental and control groups. The t-test value ($t = 4.85$, $df = 58$) with a significance level of $p = .000$ confirms that the difference was statistically significant. This finding demonstrates that Quora-based extensive reading had a meaningful effect on students' critical thinking development. Similar results have been reported in recent empirical studies indicating that exposure to digital authentic texts significantly enhances learners' analytical and evaluative reading abilities (Gilmore, 2019 ; Zhou, M., & Brown, 2021).

From a pedagogical perspective, the findings suggest that Quora-based extensive reading facilitates critical thinking by exposing students to argumentative texts that present multiple viewpoints on real-world issues. Such exposure encourages learners to analyze arguments, evaluate evidence, and reflect on contrasting perspectives, which are essential components of critical reading in higher education (Facione, 2020 ; Wallace, 2019). Furthermore, the learner-centered and interactive nature of Quora allows students to select topics aligned with their interests, fostering greater autonomy and sustained engagement. Recent studies emphasize that autonomy-supportive digital learning environments are crucial in fostering critical thinking engagement in EFL (English as a Foreign Language) contexts (Lai, 2019 ; Benson, P., & Reinders, 2020). Therefore, the integration of Quora into extensive reading instruction represents a pedagogically sound approach to enhancing EFL students' critical thinking skills in contemporary higher education settings.

CONCLUSIONS

Based on the findings of this study, Quora-based extensive reading can be considered a viable instructional alternative for promoting critical thinking among EFL students at the tertiary level. However, the effectiveness of this approach depends on guided reading tasks and instructor facilitation rather than mere exposure to digital texts. Integrating Quora into extensive reading instruction provides meaningful learning experiences and supports the development of higher-order thinking skills. EFL educators are encouraged to incorporate digital authentic materials to enhance reading instruction. The study's findings provide several significant pedagogical implications for EFL reading instruction in higher education. First, incorporating genuine digital platforms like Quora into extensive reading programs can effectively foster higher-order cognitive skills, as evidenced by the notable improvement in students' critical thinking. EFL teachers are urged to switch from simplified or textbook-based materials to authentic digital texts that expose pupils to a variety of viewpoints and real-world problems. Second, Quora-based extensive reading supports learner autonomy by allowing students to select topics aligned with their interests, which can enhance motivation and sustained reading engagement. To maximize its benefits, teachers should provide guided reading tasks that prompt students to analyze arguments, evaluate evidence, and reflect on multiple viewpoints rather than focusing solely on comprehension. Finally, this approach highlights the importance of combining extensive reading with reflective and analytical activities to foster critical thinking. By thoughtfully integrating digital authentic materials into curriculum design, EFL educators can create more meaningful, interactive, and cognitively challenging reading experiences that better prepare students for academic and professional communication in the digital era.

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