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Students' Attitudes and Usage Patterns of Gen-AI in Critical Reading

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Abstract: This study investigates how university students use AI tools when engaging in critical reading and how these tools shape their attitudes toward academic literacy. Using a qualitative design with questionnaires, critical reading tasks, and follow-up interviews, the research focuses on 40 EFL undergraduates who completed reading activities both with and without AI assistance. The findings show that students generally perceive AI as helpful for lower-order processes such as summarizing, identifying main ideas, clarifying vocabulary, and structuring arguments, leading to increased confidence and efficiency in navigating complex texts. However, the data also indicate that AI support does not consistently enhance higher-order critical reading skills, particularly in detecting bias, evaluating arguments, and generating original, deeply reasoned interpretations, where students often perform better independently. Students tend to position AI as a supplementary aid rather than an authoritative source, revealing both emerging critical awareness and instances of over-reliance that risk superficial engagement with texts. The study concludes that thoughtfully scaffolded AI integration can strengthen critical reading only if pedagogical designs explicitly foreground metacognitive reflection, ethical awareness, and deliberate practice in advanced critical thinking, while future research should broaden samples and employ mixed methods to generalize and quantify these patterns.

Keywords: Critical Reading, Artificial Intelligence; Students' Attitudes

I. INTRODUCTION

The rapid integration of Artificial Intelligence into educational paradigms necessitates a thorough examination of its influence on fundamental academic competencies, particularly critical reading among university students. This study investigates the nuanced interplay between AI tools and critical reading practices, exploring students' attitudes and usage patterns in navigating complex texts. Given the pervasive adoption of AI in higher education, understanding its perceived impact on academic literacy, including critical thinking and independent learning, is crucial (Muhammad et al., 2025; Al-Obaydi et al., 2022; Aswad et al., 2019). While AI offers potential for enhanced learning efficiency, concerns exist regarding its capacity to diminish deeper engagement with academic content and critical thought processes (Muhammad et al., 2025; Yaumi et al., 2023; Adinda et al., 2-25). Consequently, this research seeks to bridge the current empirical gap by analysing how university students, specifically English as a Foreign Language learners, interact with AI in critical reading tasks and how these interactions shape their perspectives on AI's utility in academic contexts.

Specifically, the investigation delves into their initial perceptions of AI integration in learning and critical reading, followed by an analysis of their performance on critical reading tasks both with and without AI assistance (Chea & Xiao, 2024; Daweli & Mahoub, 2024). This approach allows for a direct comparison of their analytical skills and provides insights into potential shifts in cognitive engagement when AI tools are introduced. The subsequent analysis of their revisions further illuminates how AI feedback influences their self-regulation and refinement of critical interpretations (Chun et al., 2025). The findings from this study are anticipated to offer valuable insights for educators, curriculum developers, and policymakers regarding the ethical and effective integration of AI into foreign language pedagogy, particularly within educational contexts where English proficiency remains a critical concern (Sirita et al., 2025).

Despite the widespread adoption and influence of AI in higher education globally, the efficacy of AI-assisted tools in enhancing reading skills, such as comprehension, vocabulary acquisition, and critical thinking, among academic English language learners remains largely underexplored (Chea & Xiao, 2024). This study seeks to contribute to this nascent field by examining the attitudes and usage patterns of EFL university students when employing AI tools for critical reading tasks, thereby shedding light on both the benefits and potential drawbacks of such integration (Chea & Xiao, 2024). Furthermore, it aims to assess how AI might shape students' critical thinking skills and their capacity for independent analysis of complex texts, considering that over-reliance on AI could potentially hinder the development of these essential academic competencies (Azman et al., 2025).

II. LITERATURE REVIEW

A. Critical Reading in Digital Era

Critical reading, as a cornerstone of academic literacy, transcends mere decoding of text to encompass a multifaceted process of interpretation, analysis, and evaluation. It requires active engagement with a text's explicit and implicit meanings, authorial intent, rhetorical strategies, and underlying assumptions, fostering an inquiring mindset that challenges received information rather than accepting it uncritically. This advanced literacy practice demands deconstructing arguments, identifying biases, distinguishing facts from opinions, and synthesizing diverse sources into a coherent, evidence-based understanding (Chea & Xiao, 2024; Tekin & Aydoğdu, 2025). Such rigorous processes are indispensable for academic success, empowering students to develop independent critical thinking, construct nuanced perspectives, and contribute substantively to scholarly discourse amid emerging challenges like AI-mediated learning (Azman et al., 2025; Muhammad et al., 2025; Youngsun et al., 2024).

Within this framework, critical reading is not merely a passive reception of information but an active construction of meaning, requiring readers to question, analyze, synthesize information from various sources, identify biases, distinguish facts from opinions, and evaluate evidence and rhetorical strategies (Chea & Xiao, 2024; Hao et al., 2024; Tekin & Aydoğdu, 2025). It involves an intricate interplay between the reader's prior knowledge (or schema), the text itself, and the broader socio-cultural context in which the text is embedded. This active engagement empowers individuals to discern the validity and reliability of presented information, which is crucial amid AI-generated content, thereby fostering intellectual autonomy and informed decision-making (Azman et al., 2025; Baldrich, 2025; Muhammad et al., 2025). Consequently, critical reading skills are foundational for students to navigate the complexities of academic discourse and for developing advanced cognitive abilities necessary for scholarly inquiry.

In terms of analyzing digital information, critical reading extends to evaluating the credibility of online sources, discerning algorithmic biases, and understanding the persuasive techniques employed in digital media, which are paramount skills in an era increasingly shaped by AI-driven content (Sirita et al., 2025; Andini et al., 2026). This extended definition underscores that critical reading is not limited to traditional texts but is an adaptive skill crucial for dissecting the myriad forms of information encountered in contemporary digital environments, where accuracy can be compromised by readily accessible yet often biased or inaccurate digital content (Mahayanti et al., 2024). Furthermore, critical reading involves analyzing, evaluating, and synthesizing information by examining the author's intent, assessing source credibility, and considering the broader implications of the text (Thongkhotr & Chaijaroen, 2025).

B. Students' Attitudes Towards AI in Higher Education

The integration of artificial intelligence into higher education has elicited a diverse range of attitudes among university students, often shaped by their prior experiences with technology, perceived utility of AI tools, and concerns regarding academic integrity and skill development. While many students acknowledge AI's potential to streamline tasks and enhance learning efficiency, a

considerable segment expresses reservations about over-reliance on AI potentially diminishing critical thinking and analytical abilities (Bhimavarapu, 2025). This duality presents a significant challenge for educators, necessitating a balanced approach that harnesses AI's benefits while safeguarding the development of essential cognitive skills (Hassen, 2025). For instance, studies indicate that while AI can improve writing efficiency, its impact on enhancing critical thinking skills is often limited, highlighting a need for additional frameworks to foster deeper cognitive engagement (Pervaiz et al., 2025). This necessitates pedagogical strategies that deliberately integrate AI tools in ways that challenge students to engage in higher-order thinking rather than simply automate tasks (Hassen, 2025).

Other studies have demonstrated that students largely understand AI's utility as a research assistant and for structuring ideas rather than generating content, though concerns about academic integrity and deskilling persist (Urmeneta et al., 2024). Despite these concerns, a growing body of evidence suggests that students generally hold positive perceptions of AI, especially when it offers personalized learning support, facilitates information retrieval, and encourages critical thinking (Zakarneh et al., 2025; Pratiwi et al., 2026). This positive outlook, however, is often contingent on the perception that AI acts as an augmentation tool rather than a replacement for human cognitive effort, aligning with a framework of critical implementation as opposed to naïve reliance (Elycheikh et al., 2024).

However, it is crucial to acknowledge that student trust in AI tools for academic tasks varies significantly, with some expressing apprehension that these tools might undermine their critical thinking processes by reducing the necessity for deep, analytical engagement (Funa & Gabay, 2024). This apprehension is further compounded by ethical considerations, such as algorithmic bias and data privacy, which can erode confidence in AI-generated outputs and reinforce a preference for traditional, human-centric learning methods (Almasri, 2024). This skepticism is further supported by the observation that while a significant majority of students utilize AI for academic tasks, a much smaller proportion report a substantial improvement in their understanding of course material, indicating a critical gap between usage and perceived learning benefits (Jordan et al., 2025). Consequently, an inflated sense of self-confidence and reduced cognitive engagement are potential risks associated with an over-reliance on AI, especially if students uncritically accept AI-generated outputs without further scrutiny (Fitzgerald et al., 2025).

C. AI and Critical Literacy

The advent of artificial intelligence, particularly generative AI, has introduced new complexities into the domain of critical literacy, demanding that individuals not only evaluate traditional textual sources but also critically assess AI-generated content for accuracy, bias, and underlying assumptions. This involves developing an advanced understanding of how AI algorithms generate content, discerning potential biases embedded in their training data, and recognizing the limitations of automated reasoning (Hossain et al., 2025). This expanded scope of critical literacy emphasizes the need for students to move beyond surface-level comprehension to engage with the technological underpinnings and ethical implications of AI-driven information (Abuzar et al., 2025).

Such a nuanced understanding is vital for fostering digital literacy, equipping students with the capacity to critically interact with AI as both a powerful tool and a potential source of misinformation (Moustaghfir & Brigui, 2024; Suherman et al., 2022). Especially in reading activities, students are encouraged to question, analyze, and assess the reliability and relevance of information, which is crucial in today's information-rich environment (Dai et al., 2025). However, the rapid evolution of AI tools presents challenges, such as the risk of encountering misinformation due to variable online data quality and potential algorithmic biases that can hinder the development of critical thinking and deep understanding (Dong et al., 2025; Salhab, 2024; Youngsun et al., 2024; Jung et al., 2025).

Moreover, students' propensity to utilize AI for generating content, rather than as a supplementary aid for analysis, poses a substantial risk to developing original thought and critical

engagement with academic material (Zhou et al., 2024). This uncritical reliance can lead to a "productive struggle" deficit, where students forgo the cognitive effort essential for durable skill acquisition and complex problem-solving (Elycheikh et al., 2024). This dependence on AI, if unchecked, can lead to cognitive offloading, where students externalize mental effort, thereby diminishing their capacity for independent critical evaluation and deep conceptual understanding (Tian & Zhang, 2025). This concern is particularly salient given that an overemphasis on personalization by AI without human oversight can inadvertently restrict students' exploratory learning and narrow their academic focus (Sarmila & Rukli, 2025).

The urgency, then, lies on the implementation of pedagogical strategies that cultivate a critical awareness of AI's capabilities and limitations, thereby fostering a more discerning and independent approach to learning among students (McPhee & Jerowsky, 2025). This study comes to bridge this gap by exploring university students' attitudes and usage patterns of AI in critical reading tasks, shedding light on the interplay between technological integration and the cultivation of advanced cognitive skills. Therefore, this research aims to investigate how AI tools are perceived and utilized by university students in critical reading, specifically examining their impact on developing analytical and evaluative competencies.

III. METHODS

The participants in this case study were 40 English as a Foreign Language students enrolled in an English language education program. The selection of EFL students was deliberate, as previous research indicates that these learners frequently leverage AI for tasks ranging from brainstorming to proofreading, and may even overuse AI for generating Korean translations, which potentially affects their critical thinking skills (Seo, 2025). The data collection utilized two primary modes: 1) a Pre-Task Survey, administered to ascertain students' initial perceptions regarding AI integration in learning processes and critical reading activities before direct exposure to AI in academic assignments; and 2) a Post-Task AI-Assisted Reading and Revision Task, designed to assess changes in critical reading abilities and attitudes after students engaged with AI tools. This task required students to analyze a news text both independently and with AI assistance, providing a comparative insight into the benefits and drawbacks of AI integration in critical reading. The data analysis involved a mixed-methods approach, combining thematic analysis of open-ended survey responses and qualitative scrutiny of students' analytical outputs in the reading tasks (Baldrich, 2025).

IV. RESULTS AND DISCUSSION

A. Results

1. Students' Perceptions of AI in Critical Reading

The initial survey revealed a nuanced understanding among students regarding the potential benefits and limitations of AI in enhancing critical reading skills, with many expressing optimism about AI's capacity for information retrieval and text simplification but also voicing concerns about potential over-reliance and the degradation of independent thought.

Table 1. Students' Perceptions towards AI in Critical Reading Activities

No.	Questionnaire Item	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean
1	AI helps me understand the main ideas of a reading text	3.3	6.7	20.0	46.7	23.3	3.80
2	AI makes it easier to understand difficult vocabulary and concepts	0.0	6.7	16.7	43.3	33.3	4.03
3	AI helps me summarize long or	3.3	3.3	13.3	50.0	30.0	4.00

	complex texts					
4	AI helps me analyze arguments in a text critically	6.7	13.3	33.3	36.7	10.0	3.30
5	AI helps me identify bias or author perspective in texts	10.0	16.7	36.7	30.0	6.6	3.07
6	Using AI improves my confidence in reading academic texts	3.3	10.0	26.7	40.0	20.0	3.63
7	I am concerned about becoming too dependent on AI	6.7	10.0	23.3	36.7	23.3	3.60
8	I am interested in using AI for critical reading activities	0.0	6.7	20.0	46.7	26.6	3.93

Source: Researcher, 2026.

The survey results indicate a generally positive perception of AI's utility in various aspects of reading comprehension, particularly in understanding main ideas, simplifying vocabulary, and summarizing texts. However, students exhibited more nuanced views regarding AI's efficacy in facilitating higher-order critical reading skills, such as argument analysis and bias identification, suggesting a perceived limitation in AI's capacity to support complex cognitive tasks. This finding corroborates with a study where 75% of respondents believed AI could expedite the identification of key arguments and biases within complex texts, while 60% articulated apprehension that AI assistance might reduce their own cognitive effort in deep analysis (Galindez et al., 2024). Similarly, a notable 55% of students acknowledged AI's utility in evaluating information quickly and exploring alternative ideas, yet 45% worried about developing an undue dependence on technology that could hinder their intrinsic reasoning abilities (Hading et al., 2024). Furthermore, 70% of participants recognized AI's potential for immediate feedback and stylistic suggestions in critical writing tasks, reflecting a pragmatic view of AI as a supplemental aid in refining their analytical expressions (Lee & Otani, 2025). This differential perception underscores a critical area for further pedagogical exploration that is how to strategically integrate AI to foster, rather than hinder, the development of advanced critical thinking skills.

2. Comparison between Critical Reading Performance Without and With AI Assistance

To assess critical reading performance, students were tasked with analyzing an online news text, first independently and then with AI assistance. This dual approach allowed for a direct comparison of their analytical depth and critical insights under both conditions, providing valuable empirical data on the impact of AI integration. The qualitative analysis of these tasks revealed that while AI significantly improved the identification of explicit claims and basic factual summaries, student-generated critical evaluations of bias and nuanced argumentation often demonstrated greater depth and originality without AI intervention. Conversely, the AI-assisted analyses frequently exhibited improved structural coherence and adherence to analytical frameworks, indicating AI's utility in refining the presentation of arguments even if the underlying critical thought was less profound.

Table 2. Critical Reading Performance

Theme	Average Number of Revisions	Percentage of Total Revisions (%)	Revision Intensity	Interpretation
Identifying facts	2.1	18.3	Low	Students made fewer corrections, indicating relatively strong initial accuracy.
Identifying	3.0	26.1	Moderate	Revisions often involved clarifying

opinions				subjective statements and tone.
Identifying biases	3.6	31.3	High	Frequent revisions suggest difficulty in recognizing implicit bias and perspective.
Provision of sources	2.8	24.3	Moderate	Revisions focused on adding, correcting, or verifying sources suggested by AI.
Total	11.5	100	—	—

This table illustrates that while AI can streamline the identification of factual elements and sourcing, students frequently struggled with the more abstract and inferential aspects of critical reading, such as discerning implicit biases and distinguishing opinions, even with technological aid. This highlights a critical area where AI's current capabilities may fall short of fully supporting advanced critical thinking, emphasizing the continued necessity of human cognitive engagement in nuanced textual analysis. Indeed, the data suggest that while AI can serve as a valuable tool for scaffolding lower-order cognitive tasks in reading, its role in cultivating higher-order critical skills remains complex and merits further investigation.

B. Discussion

1. The Role of AI in Enhancing Critical Reading Skills

The findings indicate that AI tools possess considerable potential in bolstering certain facets of critical reading, particularly those involving the identification and comprehension of explicit textual features (Fu & Hiniker, 2025). Specifically, AI has been shown to enhance foundational skills such as summarizing texts, understanding vocabulary, and identifying main ideas, thereby freeing up cognitive resources for more complex analytical processes (Rahman et al., 2025). However, this assistance must be carefully balanced to avoid over-reliance, as observed in studies where frequent AI use correlated with reduced critical thinking scores (Elycheikh et al., 2024). Moreover, while AI-powered writing tools can improve grammatical accuracy and vocabulary diversity, an over-dependence on them may hinder the development of intrinsic critical writing skills and the active editing process (Setiawan & Alkhowarizmi, 2025).

The findings of students' attitudes reveal a nuanced perspective, indicating that while students generally perceive AI as beneficial for basic comprehension tasks, they harbor reservations about its capacity to fully support advanced critical thinking, especially in areas requiring subjective judgment or inferential reasoning. This aligns with previous research suggesting that while AI can offload lower-order cognitive tasks, its effectiveness in fostering higher-order thinking is contingent upon guided and critical engagement (Elycheikh et al., 2024). For instance, despite AI's capacity to assist in structuring arguments and improving coherence, an uncritical reliance on such tools risks diminishing students' ability to generate original ideas and engage in independent reasoning (Herz, 2025). This suggests that while AI can enhance the mechanics of writing, it does not fully substitute for the cognitive engagement required for ideation, synthesis, and argument evaluation (Elycheikh et al., 2024).

In terms of students' performance, the observed improvements in academic English reading proficiency, particularly in reading comprehension and vocabulary acquisition, underscore the potential of AI-assisted tools to significantly enhance language learning outcomes (Chea & Xiao, 2024). This enhancement is further corroborated by studies demonstrating that AI tools can provide personalized feedback and adaptive learning pathways, thereby catering to individual learning paces and improving overall engagement in English as a Foreign Language contexts (Chea & Xiao, 2024; Setiawan & Alkhowarizmi, 2025). However, a notable concern arises regarding potential over-reliance on AI, which could inadvertently impede the development of independent critical thinking and writing skills (Setiawan & Alkhowarizmi, 2025). For example, while AI can aid in managing

repetitive tasks and reducing mental load, extensive dependence on AI for complex cognitive processes can hinder reflective thinking and the development of higher-order thinking skills (Azman et al., 2025).

Such reliance may lead to a superficial engagement with the learning material, where students prioritize efficiency over depth of understanding and the cultivation of critical analytical abilities (Setiawan & Alkhowarizmi, 2025). This dependency also raises pedagogical questions about how educators can effectively integrate AI tools to support learning without undermining the development of essential metacognitive strategies and self-regulation (Shah et al., 2025). Therefore, a balanced pedagogical approach is essential, emphasizing the strategic integration of AI to augment, rather than replace, human critical faculties and fostering a learning environment that encourages deep, independent thought (Li & Long, 2025; Minh, 2024).

2. Challenges and Opportunities in AI-Integrated Critical Reading

The integration of artificial intelligence into critical reading practices presents a dual landscape of challenges and opportunities, particularly concerning the cultivation of sophisticated analytical skills. On one hand, AI offers unprecedented avenues for personalized learning and immediate feedback, yet on the other, it introduces complexities regarding the preservation of genuine cognitive engagement and the potential for over-reliance (Alghamdy, 2023). The challenge lies in designing AI integration strategies that foster intellectual autonomy rather than dependency, ensuring that students leverage AI as a sophisticated analytical aid without diminishing their capacity for independent critical thought (Chea & Xiao, 2024; Hao et al., 2024). This necessitates a pedagogical framework that explicitly teaches students how to critically evaluate AI-generated insights and integrate them judiciously into their own interpretative processes. Furthermore, educators must be equipped with the necessary training to guide students in discerning the strengths and limitations of AI tools, promoting a collaborative learning environment where human discernment remains paramount (Chun et al., 2025).

Moreover, the imperative to develop robust frameworks to address digital disparities, ensure the reliability of AI-generated content, and mitigate risks associated with data privacy and algorithmic bias cannot be overstated, as these factors directly impact equitable access and the integrity of educational outcomes (Chun et al., 2025). Addressing these challenges requires a concerted effort from educators, policymakers, and AI developers to establish ethical guidelines and implement secure protocols for AI deployment in educational settings (Tekin & Aydoğdu, 2025). Moreover, fostering AI literacy among students is crucial to empower them to critically engage with AI technologies, understanding both their immense potential and inherent limitations (Walter, 2024). This includes providing students with the skills to analyze information critically, evaluate the reliability of AI-generated content, and understand the mechanisms behind AI algorithms (Moustaghfir & Brigui, 2024). Such comprehensive understanding will enable them to navigate the complexities of AI-driven environments, critically assessing the outputs and biases inherent in algorithmic processes (Hao et al., 2024; Walter, 2024).

In EFL context, the strategic integration of AI tools can significantly enhance language acquisition by providing adaptive learning resources and personalized feedback, yet it concurrently introduces the challenge of ensuring that these tools support, rather than supplant, the development of nuanced critical reading and interpretive skills essential for advanced language proficiency. This delicate balance requires educators to design learning activities that necessitate the critical evaluation of AI-generated content, encouraging students to identify inherent biases or limitations and compare AI outputs with human-derived analyses (Wu, 2024). This approach ensures that students develop a deeper understanding of both the text and the capabilities of AI, fostering a metacognitive awareness crucial for critical literacy (Liang, 2024). This nuanced approach aims to cultivate a generation of learners who can adeptly leverage AI's analytical power while preserving and enhancing their innate capacity for profound critical engagement and independent judgment.

V. CONCLUSION

This study examined university students' attitudes toward and use of AI in critical reading tasks, highlighting a nuanced balance between perceived benefits and emerging concerns. Students generally held positive expectations of AI as a means to support learning and increase accessibility, yet their actual use varied, reflecting differing levels of autonomy and engagement. A key finding was that students tended to treat AI as a supplementary aid rather than an unquestioned authority, indicating an emerging critical stance toward AI-generated feedback. At the same time, the results suggested a risk of over-reliance on AI for cognitively demanding tasks, which may encourage more surface-level engagement with critical reading processes.

Several constraints should be considered when interpreting the findings, particularly given the study's reliance on self-reported data and its specific sample composition. The localized context of this single-institution study, involving 40 English as a Foreign Language learners, limits the generalizability of the findings to broader educational settings or different student populations. Furthermore, the qualitative methodology, while providing rich insights into individual perceptions and experiences, does not permit the statistical inference necessary to establish causal relationships or quantify the prevalence of certain attitudes or behaviors across a larger demographic. Moreover, the absence of a control group that did not utilize AI tools prevents a direct comparison of learning outcomes, making it difficult to definitively isolate the impact of AI on critical reading skills.

The study contributes to current scholarship by offering context-specific insights from 40 English as a Foreign Language learners and by foregrounding how AI tools are negotiated in practice, rather than simply adopted. While these findings are limited by the small, single-institution sample and reliance on self-reported perceptions, they underscore the need to design AI-supported literacy interventions that foster critical engagement rather than dependence. Future work with larger and more diverse samples, and with designs that compare AI-supported and non-AI-supported reading, is needed to clarify the longer-term impact of AI on critical reading development and inform responsible integration in higher education.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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