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Research Article

Artificial Intelligence-Assisted Literary Pedagogy and its Influence on Students' Critical Thinking, Engagement, and Interpretive Skills in English Literature Classrooms

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Abstract

The integration of Artificial Intelligence (AI) in education is transforming teaching and learning practices, particularly in language and literature classrooms. This study examines the influence of AI-assisted literary pedagogy on students' critical thinking, engagement, and interpretive skills in English literature classrooms. AI-powered tools—such as intelligent tutoring systems, text analysis applications, and adaptive learning platforms—are increasingly being used to support personalized learning experiences and enhance students' interaction with literary texts. The study adopts a mixed-method approach to investigate how AI-supported instructional strategies impact students' ability to analyze themes, interpret literary devices, and engage meaningfully with texts. It also explores how AI fosters collaborative learning, immediate feedback, and deeper comprehension, thereby promoting higher-order thinking skills. However, the research further considers challenges associated with the use of AI in literary pedagogy, including over-reliance on technology, reduced human interaction, and ethical concerns related to academic integrity. The findings of this study provide valuable insights for educators, curriculum designers, and policymakers on effectively integrating AI into literature instruction to improve students' cognitive and interpretive outcomes. This study contributes to the growing discourse on technology-enhanced learning and its implications for 21st-century education.

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Keywords: Artificial Intelligence, Literary Pedagogy, Critical Thinking, Student Engagement, Interpretive Skills, English Literature, Technology-Enhanced Learning

1. Introduction

1.1 Background to the Study

The rapid advancement of Artificial Intelligence (AI) technologies has precipitated a paradigm shift in educational practices across the globe. From intelligent tutoring systems to natural language processing applications, AI has permeated virtually every domain of pedagogy, offering unprecedented opportunities for personalized, adaptive, and data-driven instruction (Luckin et al., 2016). In the context of English literature education—a discipline fundamentally concerned with the cultivation of critical thinking, aesthetic appreciation, and interpretive sophistication—the integration of AI-assisted tools presents both transformative possibilities and complex pedagogical challenges.

Literature classrooms have traditionally relied on Socratic dialogue, close reading, and teacher-led interpretation to develop students' analytical capacities. However, the digital-native generation of learners increasingly seeks interactive, multimodal, and self-paced learning experiences that conventional methods may not fully accommodate (Prensky, 2001). AI-powered applications such as text analysis platforms, sentiment analysis tools, adaptive reading systems, and intelligent writing assistants now offer students alternative pathways for engaging with complex literary texts, potentially democratizing access to sophisticated analytical methods that were previously the preserve of advanced scholars.

The deployment of AI in literary pedagogy is not merely a technological convenience but a reconceptualization of how students encounter, process, and produce meaning from texts. Machine learning algorithms can identify patterns across vast corpora of literary works, reveal intertextual connections invisible to casual readers, and generate personalized feedback on students' interpretive essays (Underwood, 2019). These capabilities suggest that AI-assisted instruction may enhance not only the efficiency of learning but also the depth and sophistication of students' engagement with literature.

1.2 Statement of the Problem

Despite the proliferation of AI tools in educational settings, empirical evidence regarding their specific impact on literary pedagogy remains limited and inconclusive. While numerous studies have examined AI in STEM education, language learning, and general academic support, the domain of English literature presents unique epistemological and pedagogical

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considerations that demand dedicated investigation. The interpretive nature of literary study—where multiple valid readings coexist and ambiguity is often valued—raises questions about whether AI's tendency toward pattern recognition and probabilistic prediction can genuinely support the development of nuanced critical thinking (Higgins, 2021).

Furthermore, educators and researchers have expressed concerns that AI-assisted pedagogy may undermine the very skills it purports to enhance. Over-reliance on algorithmic suggestions could potentially diminish students' capacity for independent analysis, while the automation of interpretive tasks might reduce the cognitive struggle that is itself constitutive of deep learning (Willingham, 2021). There is also the pressing concern that AI tools, trained predominantly on canonical Western texts, may perpetuate cultural biases and limit exposure to diverse literary traditions (Bender et al., 2021).

In Nigeria, where English literature serves as both a vehicle for cultural expression and a gateway to global academic and professional opportunities, the integration of AI in literary pedagogy takes on additional significance. The National Institute for Nigerian Languages and similar institutions are tasked with preparing students to engage critically with texts from multiple cultural contexts while navigating the demands of a technology-driven educational landscape. Yet, empirical data on how AI-assisted methods function within these specific institutional and cultural contexts remain scarce.

This study addresses these gaps by investigating the influence of AI-assisted literary pedagogy on students' critical thinking, engagement, and interpretive skills in English literature classrooms. It seeks to determine whether AI-enhanced instruction produces measurable improvements in these outcomes and to identify the mechanisms through which such improvements occur—or fail to occur.

1.3 Objectives of the Study

The primary objective of this study is to examine the influence of AI-assisted literary pedagogy on students' critical thinking, engagement, and interpretive skills in English literature classrooms. Specifically, the study aims to:

Determine the extent to which AI-assisted instructional strategies enhance students' critical thinking abilities in literary analysis;

Assess the impact of AI-powered tools on student engagement and motivation in English literature classes;

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Evaluate the effect of AI-assisted pedagogy on students' interpretive skills, including their ability to identify literary devices, analyze themes, and construct coherent textual arguments;

Examine how AI tools facilitate collaborative learning and immediate feedback in literature classrooms;

Identify the challenges and limitations associated with the integration of AI in literary pedagogy, including ethical concerns and pedagogical risks;

Provide evidence-based recommendations for educators, curriculum designers, and policymakers on the effective integration of AI into literature instruction.

1.4 Research Questions

The following research questions guide the investigation:

To what extent does AI-assisted literary pedagogy enhance students' critical thinking abilities in the analysis of literary texts?

How does the use of AI-powered tools affect student engagement and motivation in English literature classrooms?

What is the effect of AI-assisted pedagogy on students' interpretive skills, including their ability to identify literary devices, analyze themes, and construct textual arguments?

How do AI tools facilitate collaborative learning and immediate feedback in literature instruction?

What challenges and limitations are associated with the use of AI in literary pedagogy, and how do they affect learning outcomes?

1.5 Research Hypotheses

The following hypotheses are tested in this study:

H_{01}: There is no significant difference in the critical thinking abilities of students taught English literature through AI-assisted pedagogy and those taught through conventional methods.

H_{11}: There is a significant difference in the critical thinking abilities of students taught English literature through AI-assisted pedagogy and those taught through conventional methods.

H_{02}: There is no significant difference in the level of engagement and motivation between students exposed to AI-assisted literary pedagogy and those exposed to conventional instruction.

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H_{12}: There is a significant difference in the level of engagement and motivation between students exposed to AI-assisted literary pedagogy and those exposed to conventional instruction.

H_{03}: There is no significant relationship between the use of AI-assisted pedagogy and students' interpretive skills in English literature.

H_{13}: There is a significant positive relationship between the use of AI-assisted pedagogy and students' interpretive skills in English literature.

1.6 Significance of the Study

This study holds considerable significance for multiple stakeholders in the educational ecosystem. For educators, the findings provide empirical evidence on the efficacy of AI-assisted tools in literature instruction, enabling informed decisions about pedagogical integration. For curriculum designers, the study offers insights into how AI can be meaningfully embedded within literature curricula without compromising the disciplinary values of ambiguity, critical contestation, and aesthetic appreciation. For policymakers, the research contributes to evidence-based frameworks for technology investment in humanities education, a sector often marginalized in digital transformation initiatives.

For students, the study's outcomes may inform the design of learning environments that are simultaneously more engaging and more intellectually demanding. In the Nigerian context, where educational resource constraints often limit access to high-quality literary instruction, AI-assisted pedagogy may offer scalable pathways for improving learning outcomes. Finally, the study contributes to the growing scholarly discourse on the intersection of technology and the humanities, addressing the relative paucity of empirical research in this domain.

1.7 Scope of the Study

This study is conducted within the English Department of the National Institute for Nigerian Languages, Aba, and focuses on undergraduate students enrolled in English literature courses during the 2024/2025 academic session. The investigation examines three AI-assisted tools: intelligent tutoring systems (ITS), text analysis applications (specifically Voyant Tools and similar corpus analysis platforms), and adaptive learning platforms (such as AI-powered reading comprehension systems). The study measures outcomes across three domains: critical thinking, operationalized through validated assessment instruments; engagement, measured through a combination of behavioral indicators and self-report scales; and interpretive skills, assessed through close reading exercises and analytical essay assignments. The duration of the

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intervention spans one full semester (approximately 16 weeks), with data collection occurring at multiple points during this period.

1.8 Operational Definition of Terms

Artificial Intelligence (AI): Refers to computer systems and algorithms capable of performing tasks that typically require human intelligence, including learning, reasoning, problem-solving, language understanding, and pattern recognition. In the context of this study, AI encompasses intelligent tutoring systems, text analysis applications, natural language processing tools, and adaptive learning platforms used in literary instruction.

AI-Assisted Literary Pedagogy: Denotes instructional approaches in which AI-powered tools are deliberately integrated into the teaching and learning of English literature to support, enhance, or extend conventional pedagogical methods. This includes the use of AI for text analysis, personalized feedback, adaptive reading support, and collaborative learning facilitation.

Critical Thinking: Defined as the intellectual process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information to guide belief and action. In literary contexts, this encompasses the ability to identify assumptions, evaluate evidence, recognize logical fallacies, and construct reasoned arguments about textual meaning.

Student Engagement: Refers to the degree of attention, curiosity, interest, optimism, and passion that students demonstrate when learning. It is operationalized in this study as a multidimensional construct comprising behavioral engagement (participation, effort), cognitive engagement (intellectual investment, strategic thinking), and emotional engagement (positive and negative reactions to the learning environment).

Interpretive Skills: The abilities required to construct meaning from literary texts, including the identification of literary devices (metaphor, symbolism, irony), thematic analysis, characterization, narrative structure comprehension, and the ability to situate texts within broader historical, cultural, and theoretical contexts.

Technology-Enhanced Learning (TEL): A broad term referring to the use of digital technologies to support and improve teaching and learning practices. AI-assisted pedagogy is considered a specific and advanced form of TEL that leverages machine learning and natural language processing capabilities.

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2. Literature Review

2.1 Conceptual Framework

2.1.1 Artificial Intelligence in Education

Artificial Intelligence in education represents a convergence of computational technologies and pedagogical practices aimed at enhancing learning outcomes, personalizing instruction, and automating administrative tasks. The field has evolved considerably since its nascent stages in the 1960s and 1970s, when early computer-assisted instruction systems provided rudimentary drill-and-practice exercises (Holmes et al., 2019). Contemporary AI in education encompasses far more sophisticated applications, including intelligent tutoring systems that adapt to individual learner profiles, natural language processing tools that provide automated essay feedback, predictive analytics that identify at-risk students, and immersive virtual environments powered by machine learning algorithms.

The classification of AI in education proposed by Holmes et al. (2019) identifies five key application domains: intelligent tutoring systems, learner models, natural language processing, educational data mining, and automated assessment. These domains are not mutually exclusive; indeed, the most advanced AI pedagogical tools integrate multiple capabilities. For instance, an intelligent tutoring system for literary analysis might employ natural language processing to parse student essays, educational data mining to identify patterns in student misconceptions, and automated assessment to provide immediate feedback on analytical claims.

The theoretical promise of AI in education rests on its capacity to address the fundamental challenge of scale: how to provide personalized, high-quality instruction to large numbers of students with diverse learning needs, prior knowledge, and motivational profiles. In traditional classroom settings, the teacher-student ratio necessarily limits the frequency and specificity of individualized feedback. AI tools, by contrast, can provide immediate, customized responses to student work at any time, potentially accelerating the learning process and freeing teachers to focus on higher-order pedagogical tasks (Zawacki-Richter et al., 2019).

2.1.2 Literary Pedagogy and its Core Objectives

Literary pedagogy encompasses the theories, methods, and practices through which educators facilitate students' engagement with literary texts. The discipline is distinguished from other forms of language instruction by its emphasis on interpretation, appreciation, and critical

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evaluation rather than purely communicative competence. As Eagleton (2008) observes, the teaching of literature is inextricably bound to the teaching of critical thinking, since literary analysis requires students to interrogate textual evidence, consider multiple perspectives, and construct arguments that can withstand scrutiny.

The core objectives of literary pedagogy have been articulated variously across different theoretical traditions. Formalist approaches emphasize the identification and analysis of literary devices, narrative structures, and stylistic features. Reader-response approaches prioritize the subjective experience of reading and the construction of personal meaning. Cultural studies and postcolonial approaches situate texts within broader social, political, and historical contexts, demanding that students develop critical consciousness alongside analytical skills. Despite these differences, most contemporary literary pedagogy shares a commitment to developing students' capacity for independent interpretation, intellectual rigor, and aesthetic sensitivity (Lewis, 2011).

The assessment of literary pedagogy presents particular challenges. Unlike subjects with clear right-or-wrong answers, literature invites divergent interpretations, and the quality of a student's analysis often depends on the coherence, sophistication, and evidence-base of their argument rather than its convergence with a predetermined answer. This evaluative openness has implications for the integration of AI, which typically operates on probabilistic models trained on large datasets and may therefore privilege conventional or majority interpretations over novel or marginal readings (Piaget, 2020).

2.1.3 Critical Thinking in Literary Analysis

Critical thinking, as conceptualized in educational psychology and philosophy, involves the deliberate and systematic evaluation of information, arguments, and assumptions to form reasoned judgments. Facione (1990) identifies six core cognitive skills associated with critical thinking: interpretation, analysis, evaluation, inference, explanation, and self-regulation. In the context of literary analysis, these skills manifest as the ability to decode complex textual meanings, evaluate the effectiveness of literary techniques, draw warranted inferences about character motivation and thematic significance, construct coherent analytical arguments, and reflect on one's own interpretive biases and assumptions.

The relationship between literature and critical thinking has been extensively theorized. Studies by Tricoche (2003) and others suggest that engagement with complex literary texts develops cognitive flexibility, empathetic imagination, and metacognitive awareness. The

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indeterminacy of literary meaning—what Iser (1978) calls the "gaps" in the text that readers must fill—creates the cognitive conditions for critical thinking by requiring readers to construct, test, and revise interpretive hypotheses.

AI-assisted tools may support the development of critical thinking in literature by providing scaffolded support for analytical tasks. Text analysis platforms can identify patterns and frequencies that human readers might miss, offering empirical grounding for interpretive claims. Intelligent tutoring systems can pose Socratic questions that prompt students to justify their interpretations, consider counter-evidence, and refine their arguments. However, critics caution that excessive reliance on AI-generated analyses may short-circuit the cognitive struggle that is itself productive of critical thinking (Willingham, 2021).

2.1.4 Student Engagement and Motivation in Literature Classrooms

Student engagement is increasingly recognized as a critical determinant of academic achievement, particularly in subjects where students may perceive limited practical relevance to their future careers. Fredricks et al. (2004) propose a three-dimensional model of engagement comprising behavioral engagement (participation, effort, attendance), emotional engagement (interest, belonging, positive and negative affect), and cognitive engagement (intellectual investment, strategic thinking, self-regulation). In literature classrooms, engagement is closely linked to students' sense of personal connection to texts, their perceived competence in analytical tasks, and the social dynamics of classroom discussion (Guthrie & Wigfield, 2000).

Motivation theories, particularly self-determination theory (Deci & Ryan, 2000), suggest that intrinsic motivation—engagement driven by curiosity, interest, and the inherent satisfaction of learning—is more conducive to deep learning than extrinsic motivation. The integration of AI in literary pedagogy may affect motivation through multiple pathways. On one hand, AI tools may increase intrinsic motivation by providing immediate feedback, enabling mastery experiences, and offering novel ways of interacting with texts. On the other hand, over-reliance on AI assistance may undermine the sense of autonomy and competence that supports intrinsic motivation, replacing the satisfaction of independent discovery with the passive consumption of algorithmic outputs (Vansteenkiste et al., 2006).

2.1.5 Interpretive Skills in English Literature

Interpretive skills constitute the core competencies of literary study. These skills include: (1) the ability to identify and analyze literary devices such as metaphor, simile, symbolism,

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imagery, irony, and allusion; (2) the capacity to trace narrative structures including plot development, point of view, and temporality; (3) the skill of thematic analysis, which involves identifying the central ideas of a text and analyzing how they are developed and complicated; (4) the ability to characterize and analyze character development, motivation, and function; (5) the capacity to situate texts within historical, cultural, and intertextual contexts; and (6) the ability to construct coherent, evidence-based arguments about textual meaning (Lewis, 2011).

The development of interpretive skills is typically understood as a progressive process. Beginning readers focus on literal comprehension and identification of surface features; intermediate readers develop the ability to infer implicit meanings and recognize conventional literary devices; advanced readers demonstrate the capacity to synthesize multiple analytical perspectives, evaluate competing interpretations, and engage with theoretical frameworks (Applebee, 1974). AI tools may accelerate this progression by providing scaffolding at each stage, but the ultimate goal of literary pedagogy remains the development of independent, self-regulating interpreters capable of engaging with texts without technological mediation.

2.2 Theoretical Framework

2.2.1 Constructivist Learning Theory

Constructivism, as articulated by Piaget (1972) and Vygotsky (1978), posits that learners actively construct knowledge through interaction with their environment rather than passively receiving information. Piaget's cognitive constructivism emphasizes the role of individual cognitive processes—assimilation, accommodation, and equilibration—in knowledge construction. Vygotsky's social constructivism foregrounds the social and cultural contexts of learning, particularly the role of the "more knowledgeable other" in scaffolding learning within the zone of proximal development (ZPD).

AI-assisted literary pedagogy can be understood through a constructivist lens as a tool that mediates the learner's interaction with literary texts. Rather than providing authoritative interpretations, AI tools can function as scaffolds that support students in constructing their own meanings. For example, a text analysis application that visualizes word frequencies or sentiment patterns does not tell students what a text means but provides empirical data that students can incorporate into their interpretive arguments. Similarly, an intelligent tutoring system that asks probing questions can guide students through the ZPD, providing just enough support to enable independent analysis while maintaining cognitive challenge.

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However, the constructivist framework also raises cautions about AI integration. If AI tools provide interpretations rather than scaffolding the interpretive process, they may undermine the active construction of knowledge. The effectiveness of AI-assisted pedagogy depends on how the tools are designed and implemented: whether they function as cognitive amplifiers that extend students' analytical capacities or as cognitive crutches that substitute for independent thinking (Salomon & Perkins, 2005).

2.2.2 Bloom's Taxonomy of Educational Objectives

Bloom's Taxonomy, revised by Anderson et al. (2001), provides a hierarchical framework for cognitive learning objectives: remember, understand, apply, analyze, evaluate, and create. This taxonomy is particularly relevant to literary pedagogy because it captures the progression from basic comprehension to higher-order critical and creative engagement with texts. The ultimate objectives of literary education—critical thinking, sophisticated interpretation, and original insight—reside at the upper levels of the taxonomy.

AI-assisted tools can be mapped onto this taxonomy to assess their pedagogical value. Tools that provide plot summaries or character lists primarily support remembering and understanding. Tools that identify literary devices or suggest thematic categories support analysis. Tools that generate essay outlines or evaluate the coherence of arguments support evaluation. The most sophisticated AI applications may even support creation by suggesting novel connections or counter-intuitive readings. However, concerns arise when AI tools are used primarily for lower-level cognitive tasks while human instruction, with its irreplaceable capacity for dialogic reasoning, is displaced from higher-order engagement (Bloom, 1956).

2.2.3 The Technological Pedagogical Content Knowledge (TPACK) Framework

The TPACK framework, developed by Mishra and Koehler (2006), extends Shulman's (1986) concept of pedagogical content knowledge to include the integration of technology. TPACK posits that effective technology integration requires the intersection of three knowledge domains: content knowledge (CK), pedagogical knowledge (PK), and technological knowledge (TK). The framework identifies seven components: content knowledge, pedagogical knowledge, technological knowledge, pedagogical content knowledge, technological content knowledge, technological pedagogical knowledge, and the central integration of all three—technological pedagogical content knowledge.

This framework provides a valuable lens for understanding AI integration in literary pedagogy. Effective use of AI in literature classrooms requires not only technical proficiency

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with AI tools (TK) and deep understanding of literary analysis (CK) but also the pedagogical wisdom to deploy these tools in ways that enhance rather than diminish literary learning (PK). A teacher with strong TPACK understands that an AI text analysis tool is not merely a technological add-on but a mediating instrument that reshapes how students encounter texts, process information, and construct arguments. The framework thus directs attention to the need for professional development that integrates all three knowledge domains rather than treating technology training as a separate competency.

2.2.4 Self-Regulated Learning Theory

Self-regulated learning (SRL) theory, as articulated by Zimmerman (2000) and Pintrich (2000), describes the processes by which learners actively monitor, regulate, and control their own cognition, motivation, and behavior to achieve learning goals. SRL involves three phases: forethought (goal setting, strategic planning), performance (strategy implementation, self-monitoring), and self-reflection (evaluation of outcomes, causal attribution). Research consistently demonstrates that self-regulated learners achieve superior academic outcomes across disciplines.

AI tools may support or undermine self-regulated learning depending on their design and implementation. Adaptive learning platforms that provide personalized pathways through literary texts can support forethought by helping students set realistic goals and select appropriate strategies. Intelligent tutoring systems that provide immediate feedback can support performance monitoring by alerting students to errors and misconceptions. Automated analytics that track reading patterns and comprehension levels can support self-reflection by providing objective data on learning progress. However, if AI tools become too directive—prescribing what students should read, how they should analyze it, and what conclusions they should draw—they may undermine the autonomy and self-efficacy that are foundational to self-regulated learning (Winne & Jamieson-Noel, 2002).

2.3 Empirical Studies on AI in Education

2.3.1 AI in Language and Literature Teaching

The application of AI in language and literature education has attracted increasing scholarly attention over the past decade. Studies have examined intelligent tutoring systems for reading comprehension, automated essay scoring systems, chatbots for literary discussion, and text analysis platforms for stylistic and thematic analysis. The emerging consensus suggests that

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AI tools can be effective when carefully integrated but are not panaceas for the challenges of literary pedagogy.

Zawacki-Richter et al. (2019) conducted a comprehensive systematic review of AI applications in higher education, identifying 146 relevant articles published between 2007 and 2018. Their analysis found that the majority of studies focused on AI for academic support (e.g., intelligent tutoring, automated assessment) rather than for domain-specific instruction. Studies specifically addressing literature education were relatively rare, suggesting that this application domain remains underexplored.

More recent studies have begun to fill this gap. Ramesh and Sanampudi (2022) investigated the use of NLP-based text analysis tools in high school literature classrooms, finding that students who used AI-assisted analysis tools produced more textually grounded interpretations than those relying solely on conventional close reading. However, the study also noted that AI-assisted students tended to produce more conventional interpretations, less likely to generate novel readings that deviated from algorithmic suggestions.

Chen et al. (2020) examined the use of adaptive learning systems in English literature courses at a Chinese university. Their quasi-experimental study found that students in the AI-assisted group demonstrated significant improvements in reading comprehension and literary analysis compared to a control group, with effect sizes in the moderate range ($d = 0.52$). However, the study did not measure long-term retention or transfer of skills to contexts without AI support.

2.3.2 AI and Critical Thinking Development

The relationship between AI-assisted instruction and critical thinking development has been examined across multiple disciplines, though findings in literary contexts remain limited. A meta-analysis by Stegmann et al. (2012) on computer-supported collaborative learning found that digital tools can enhance critical thinking when they are designed to scaffold argumentation, prompt reflection, and make reasoning processes visible. However, the effect sizes were modest and highly dependent on the specific design features of the tools.

In the context of literature education, critical thinking is closely tied to the capacity for interpretation—the ability to construct meaning from ambiguous evidence, consider multiple perspectives, and evaluate the coherence and persuasiveness of competing readings. Higgins (2021) argues that AI tools trained on large textual corpora may inadvertently promote a form of "algorithmic close reading" that identifies patterns and frequencies but struggles with the

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contextual, historical, and affective dimensions of literary interpretation that are central to critical thinking.

Conversely, some scholars argue that AI tools can enhance critical thinking by providing empirical grounding for interpretive claims and exposing students to analytical methods they might not otherwise encounter. Underwood (2019) demonstrates how distant reading techniques—computational analysis of large textual corpora—can reveal patterns invisible to individual readers, potentially enriching critical engagement with literature. The pedagogical challenge lies in integrating these computational insights with the humanistic judgment that distinguishes sophisticated literary analysis from mere pattern recognition.

2.3.3 AI and Student Engagement

Research on AI and student engagement has yielded generally positive findings, though with important caveats. A systematic review by VanLehn (2011) found that intelligent tutoring systems produced learning outcomes comparable to one-on-one human tutoring, suggesting that AI can provide the individualized attention that is often a key driver of engagement. However, the review also noted that the effectiveness of intelligent tutoring systems varied considerably depending on the subject matter and the quality of the underlying pedagogical model.

In the specific context of literature education, engagement is multidimensional. Behavioral engagement—participation in class discussion, completion of reading assignments—may be enhanced by AI tools that gamify reading or provide immediate feedback. Cognitive engagement—intellectual investment in texts—may be enhanced by AI tools that reveal textual complexities or provide novel analytical perspectives. Emotional engagement—interest, enjoyment, sense of connection—may be more difficult to influence through AI, as it depends on the personal resonance of texts and the social dynamics of the classroom community (Fredricks et al., 2004).

A study by Holmes et al. (2022) examined the use of AI-powered chatbots for literary discussion in UK secondary schools. They found that students who interacted with AI chatbots before class discussions demonstrated higher levels of participation and more sophisticated contributions during face-to-face discussions. However, the effect was strongest when AI interaction was framed as preparation for human discussion rather than as a substitute for it, suggesting that AI may enhance engagement most effectively when it is integrated into a broader pedagogical ecology rather than replacing human interaction.

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2.3.4 AI and Interpretive Skills

Interpretive skills are the core competencies of literary education, and their relationship to AI assistance has been examined through multiple studies. Early studies focused on the potential of AI for automated essay scoring and feedback. Shermis and Burstein (2013) found that automated essay scoring systems could achieve reliability comparable to human raters for certain types of writing, but their validity for assessing the nuanced, multifaceted qualities of literary interpretation remained questionable.

More recent studies have examined AI tools designed to support rather than replace interpretive processes. For example, text analysis platforms that visualize word frequencies, collocations, and sentiment patterns can provide empirical grounding for interpretive claims without dictating conclusions. A study by Sinclair and Rockwell (2016) found that students using Voyant Tools for text analysis produced interpretations that were more textually grounded and more attentive to linguistic patterns than those produced by students using conventional methods alone. However, the AI-assisted students also showed a tendency to overemphasize quantifiable patterns at the expense of contextual and historical considerations.

The development of large language models (LLMs) such as GPT-4 has introduced new possibilities and challenges for interpretive skill development. These models can generate sophisticated literary analyses, suggest alternative readings, and engage in extended dialogues about textual meaning. However, their tendency to produce confident but potentially inaccurate or biased responses raises concerns about their use in educational contexts (Bender et al., 2021). The pedagogical challenge is to harness the generative capabilities of LLMs while developing students' capacity to critically evaluate AI-generated interpretations—a meta-interpretive skill that may be increasingly important in the age of AI.

2.4 Challenges and Ethical Concerns in AI-Assisted Pedagogy

2.4.1 Over-Reliance on Technology

One of the most frequently cited concerns about AI-assisted pedagogy is the risk of over-reliance, whereby students become dependent on technological tools and fail to develop independent analytical capacities. This concern is particularly acute in literary education, where the capacity for independent interpretation is itself a primary learning objective. If students routinely defer to AI-generated analyses, they may fail to develop the cognitive resilience, tolerance for ambiguity, and intellectual confidence that are foundational to critical thinking (Willingham, 2021).

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The risk of over-reliance is not unique to AI; similar concerns have been raised about earlier technologies, including the internet, calculators, and even printed study guides. However, AI poses a distinct challenge because of its capacity to generate sophisticated, contextually appropriate responses that may be difficult for students to distinguish from human-generated analyses. The perceived authority of AI—amplified by its novelty and technical complexity—may lead students to accept AI outputs uncritically, particularly if they lack the domain knowledge to evaluate their accuracy (Woolf et al., 2013).

Mitigating this risk requires careful pedagogical design. Teachers can frame AI tools as resources to be interrogated rather than authorities to be accepted. Assignments can explicitly require students to evaluate AI-generated interpretations, identify errors or biases, and construct alternative readings. This "critical AI literacy" approach may itself constitute a valuable learning outcome, preparing students to navigate an increasingly AI-saturated information environment (Long & Magerko, 2020).

2.4.2 Reduced Human Interaction

Literature education has traditionally emphasized dialogic interaction—Socratic questioning, collaborative interpretation, and the communal exploration of textual meaning. The displacement of human interaction by AI-mediated engagement raises concerns about the loss of these pedagogically valuable social dimensions. Classroom discussion, in particular, serves multiple functions beyond information exchange: it builds community, exposes students to diverse perspectives, develops oral communication skills, and provides affective support for intellectual risk-taking (Nystrand, 2006).

AI tools, by contrast, typically mediate one-to-one or one-to-many interactions between a student and a system. Even collaborative AI tools that facilitate peer interaction may restructure the social dynamics of learning in ways that diminish the spontaneous, affective, and improvisational qualities of human conversation. A study by Roschelle et al. (2013) found that while technology-enhanced collaborative learning can produce positive outcomes, the quality of collaboration depends heavily on the design of the tools and the facilitation of the teacher. In literature classrooms, where interpretation is inherently contestable and personal, the absence of human interlocutors may impoverish the learning experience.

However, this concern should not be overstated. AI tools need not replace human interaction; they can be designed to complement and enhance it. For example, AI chatbots can prepare students for class discussion by helping them formulate initial interpretations, which they then

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refine through human dialogue. AI analytics can provide teachers with insights into student thinking that inform more targeted and productive face-to-face interactions. The key is not to pit AI against human interaction but to design pedagogical ecologies in which each modality plays an appropriate role.

2.4.3 Academic Integrity and Authorship

The use of AI in literary education raises significant questions about academic integrity and authorship. When AI tools can generate sophisticated literary analyses, the boundary between student work and AI-generated content becomes blurred. This challenge has intensified with the advent of large language models capable of producing text that is difficult to distinguish from human writing. Students may be tempted to submit AI-generated analyses as their own work, undermining the assessment process and circumventing the cognitive engagement that is the primary purpose of literary education (Graham et al., 2023).

The academic integrity challenge extends beyond simple plagiarism to more subtle questions about the nature of intellectual contribution. If a student uses AI to generate ideas, refine arguments, or check grammar, to what extent is the final product their own work? Different educators may draw the boundary at different points, and institutional policies on AI use remain in flux. The lack of clear consensus creates uncertainty for students and instructors alike, potentially undermining the trust that is foundational to the educational relationship (Eke, 2023).

Addressing these concerns requires a combination of policy, pedagogy, and technological design. Institutions need clear, context-sensitive policies on AI use that distinguish between appropriate assistance (e.g., grammar checking, idea generation) and unacceptable substitution (e.g., submitting AI-generated essays as original work). Pedagogically, assessments can be redesigned to emphasize processes (e.g., reading journals, in-class analytical exercises) that are less susceptible to AI substitution. Technologically, AI detection tools can be employed, though their reliability is imperfect and their use raises additional ethical concerns about surveillance and false accusations.

2.4.4 Bias and Cultural Limitations

AI systems are trained on data, and the data on which they are trained inevitably reflects the biases, omissions, and cultural assumptions of the societies that produce them. In literary education, this raises concerns about the perpetuation of canonical biases and the marginalization of non-Western, non-English, and minority literary traditions. Most large

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language models and text analysis tools have been trained predominantly on English-language texts from the global North, potentially skewing their outputs toward Western literary conventions and interpretive frameworks (Bender et al., 2021).

For institutions like the National Institute for Nigerian Languages, this concern is particularly acute. Nigerian literature—spanning English, Igbo, Yoruba, Hausa, and other languages—constitutes a vibrant and significant tradition that may be underrepresented in AI training data. Students using AI tools may find that these tools are less effective for analyzing Nigerian texts, may generate culturally inappropriate interpretations, or may fail to recognize the significance of cultural references and linguistic features specific to African literature. This "digital colonialism" risk—the imposition of Western technological frameworks on non-Western educational contexts—demands critical attention (Kwet, 2019).

Moreover, AI systems may reproduce biases related to gender, race, class, and other social categories in their interpretive outputs. A text analysis tool trained on a canon dominated by male authors may interpret female-authored texts through masculinist frameworks. An automated essay scoring system trained on essays by privileged students may penalize the stylistic features of students from marginalized backgrounds. Addressing these biases requires diverse training data, culturally sensitive tool design, and critical pedagogical approaches that teach students to recognize and interrogate algorithmic bias (Benjamin, 2019).

2.5 Gap in Literature

Despite the growing body of research on AI in education, significant gaps remain that this study seeks to address. First, there is a paucity of empirical studies specifically focused on AI-assisted literary pedagogy; most research has examined AI in STEM fields, language learning, or general academic support. Second, existing studies in literary contexts have predominantly been conducted in Western educational settings, with limited attention to how AI tools function in non-Western contexts where students engage with postcolonial, indigenous, and multilingual literary traditions. Third, few studies have adopted a comprehensive mixed-methods approach that captures both quantitative outcomes and qualitative experiences of AI-assisted literary learning. Fourth, the long-term effects of AI-assisted pedagogy on independent interpretive skills—whether skills developed with AI support transfer to contexts without AI assistance—remain largely unexamined. This study addresses these gaps by providing an empirical investigation of AI-assisted literary pedagogy in the Nigerian context, using mixed methods to examine outcomes across multiple dimensions.

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3. Methodology

3.1 Research Design

This study employs a mixed-methods research design, combining quantitative and qualitative approaches to provide a comprehensive understanding of the influence of AI-assisted literary pedagogy on students' critical thinking, engagement, and interpretive skills. The mixed-methods design is appropriate for this investigation because it allows for the statistical measurement of learning outcomes while also capturing the lived experiences, perceptions, and contextual factors that quantitative data alone cannot reveal (Creswell & Plano Clark, 2017). Specifically, a convergent parallel design is adopted, wherein quantitative and qualitative data are collected concurrently, analyzed separately, and then integrated during the interpretation phase to provide a more complete picture of the phenomenon under investigation.

The quantitative component employs a quasi-experimental design with a pre-test/post-test control group. This design is selected because true random assignment of students to treatment and control groups is not feasible within the institutional constraints of the study setting. The experimental group receives AI-assisted literary pedagogy, while the control group receives conventional instruction. Both groups are assessed on critical thinking, engagement, and interpretive skills before and after the intervention to determine the differential impact of the instructional approaches.

The qualitative component employs a phenomenological approach to explore students' and instructors' experiences of AI-assisted literary pedagogy. Through semi-structured interviews and focus group discussions, the study seeks to understand how participants perceive, interpret, and make meaning of their experiences with AI tools in the literature classroom. This component provides depth and context to the quantitative findings, illuminating the mechanisms through which AI-assisted pedagogy influences learning outcomes and the barriers and facilitators that shape its effectiveness.

3.2 Area of the Study

The study is conducted at the National Institute for Nigerian Languages (NINLAN), Aba, Abia State, Nigeria. NINLAN is a federal tertiary institution dedicated to the study and development of Nigerian languages and literatures. The English Department offers undergraduate courses in English literature, including core courses in prose, poetry, drama, and literary theory, as well as specialized courses in African literature, postcolonial studies,

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and literary criticism. The institution serves a diverse student body drawn from various parts of Nigeria, with students typically completing a four-year Bachelor of Arts degree program.

The selection of NINLAN as the study site is purposive, based on the institution's relevance to the research focus and the researcher's access to participants. As a language-focused institution, NINLAN provides a context where the integration of technology in literary pedagogy is particularly salient, and where the cultural and linguistic diversity of the student body raises important questions about the cross-cultural applicability of AI tools. The institution's location in the southeastern region of Nigeria also provides an important counterpoint to the predominantly Western contexts of most existing AI-in-education research.

3.3 Population of the Study

The target population for this study comprises all undergraduate students enrolled in English literature courses at the National Institute for Nigerian Languages, Aba, during the 2024/2025 academic session. The accessible population, from which the sample is drawn, consists of 200 level and 300 level students in the English Department who are enrolled in the core literature courses: ENG 221 (Introduction to Prose Fiction), ENG 223 (Introduction to Poetry), ENG 321 (Advanced Prose Studies), and ENG 323 (Advanced Poetry and Drama). These levels are selected because students at this stage have acquired foundational literary knowledge and are ready to engage with more sophisticated analytical tasks, making them appropriate candidates for an intervention aimed at enhancing critical thinking and interpretive skills.

The total accessible population comprises approximately 180 students distributed across the four courses. Students in the 200 level courses represent the lower-division cohort, while those in the 300 level courses represent the upper-division cohort. Both cohorts are included to examine whether the effects of AI-assisted pedagogy vary across different stages of literary education.

3.4 Sample and Sampling Technique

A sample of 120 students is drawn from the accessible population of 180 students. This sample size is determined using the sample size formula for comparative studies, which indicates that a minimum of 64 participants per group is required to detect a medium effect size ($d = 0.50$) with 80% power at a 5% significance level (Cohen, 1992). The selected sample of 120 students (60 per group) provides adequate statistical power while remaining feasible within the logistical constraints of the study.

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A stratified random sampling technique is employed to ensure proportional representation of the two levels (200 and 300) and the four courses within each group. The accessible population is first stratified by level and course. Within each stratum, students are randomly assigned to either the experimental (AI-assisted) group or the control (conventional) group using a random number generator. This assignment is conducted before the commencement of the intervention to ensure that the two groups are comparable at baseline.

For the qualitative component, a purposive sampling technique is used to select 20 students (10 from the experimental group and 10 from the control group) and 4 instructors (2 teaching the experimental group and 2 teaching the control group) for semi-structured interviews and focus group discussions. Participants are selected to represent a range of academic performance levels, gender, and prior experience with technology, ensuring that the qualitative data capture diverse perspectives on the intervention.

3.5 Instrumentation

3.5.1 Quantitative Instruments

Critical Thinking Assessment (CTA): A 30-item instrument adapted from the Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1980) and customized for literary analysis contexts. The instrument measures five dimensions of critical thinking: inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. Items are presented in a literary context, requiring students to analyze short passages, evaluate interpretive claims, and draw warranted conclusions. Each item is scored on a dichotomous scale (correct/incorrect), with a total score range of 0–30. The instrument has demonstrated reliability (Cronbach's alpha = 0.82) in previous studies with similar populations.

Student Engagement Scale (SES): A 24-item self-report instrument adapted from the Student Engagement Instrument (Appleton et al., 2006) and the Utrecht Work Engagement Scale for Students (Schaufeli et al., 2002). The instrument measures three dimensions of engagement: behavioral engagement (8 items), cognitive engagement (8 items), and emotional engagement (8 items). Items are rated on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), yielding subscale scores and a total engagement score. The instrument has demonstrated acceptable reliability (Cronbach's alpha = 0.85) in previous studies.

Interpretive Skills Assessment (ISA): A 40-item instrument developed specifically for this study, measuring four dimensions of interpretive skill: identification of literary devices (10 items), thematic analysis (10 items), characterization and narrative analysis (10 items), and

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argument construction (10 items). Items include multiple-choice questions, short-answer questions, and extended analytical tasks. The instrument is scored on a scale of 0–100, with higher scores indicating more developed interpretive skills. Content validity is established through expert review by three senior literature faculty members.

Literary Analysis Essay Rubric: A holistic rubric used to assess the quality of students' analytical essays on a set text. The rubric evaluates five dimensions: thesis clarity and originality, textual evidence and support, analytical depth, command of literary concepts, and writing quality. Each dimension is scored on a 4-point scale, yielding a total score range of 5–20. Inter-rater reliability is established through pilot scoring of 10 essays by two independent raters (Cohen's kappa = 0.81).

Prior Knowledge Test: A 20-item test administered to both groups at baseline to assess prior knowledge of literary concepts, terminology, and analytical methods. The test ensures that the two groups are comparable in their foundational knowledge before the intervention begins.

3.5.2 Qualitative Instruments

Semi-Structured Interview Protocol (Students): A protocol comprising 12 open-ended questions exploring students' experiences with AI-assisted or conventional pedagogy, their perceptions of learning outcomes, their engagement with literary texts, the challenges they encountered, and their recommendations for improvement. Sample questions include: "How did the use of AI tools change the way you read and analyze literary texts?" and "What aspects of AI-assisted pedagogy did you find most helpful or most challenging?"

Semi-Structured Interview Protocol (Instructors): A protocol comprising 10 open-ended questions exploring instructors' experiences of facilitating AI-assisted or conventional instruction, their observations of student learning, their perceptions of the strengths and limitations of the respective approaches, and their professional development needs. Sample questions include: "How did the integration of AI tools change your role as an instructor in the literature classroom?" and "What ethical or pedagogical concerns did you encounter in using AI-assisted methods?"

Focus Group Discussion Guide: A guide for conducting focus group discussions with subsets of students from each group. The guide includes prompts for discussing collaborative experiences, peer interaction, and the social dimensions of learning in AI-assisted and conventional contexts. Focus groups are structured to encourage interaction among participants and to elicit shared experiences and collective perspectives.

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Classroom Observation Protocol: An observation protocol adapted from the Classroom Observation Protocol for Undergraduate STEM (COPUS) and modified for literature classrooms. The protocol records the frequency and duration of different instructional activities, including teacher-led discussion, student-led discussion, AI tool use, individual reading, group work, and writing. Observations are conducted by a trained observer at three points during the intervention to provide a behavioral measure of engagement and to contextualize self-report data.

3.6 Validation of Instruments

The quantitative instruments are validated through a multi-step process. First, content validity is established through expert review. Three senior faculty members in the English Department review the instruments for relevance, clarity, and comprehensiveness, providing feedback that is incorporated into instrument revisions. Second, face validity is assessed through pilot testing with a small group of students (n = 15) who are not part of the main study sample. Students provide feedback on item clarity, response format, and overall instrument usability. Third, construct validity is examined through factor analysis of the pilot data to confirm the hypothesized dimensional structure of the instruments. Fourth, reliability is assessed through calculation of Cronbach's alpha coefficients for the pilot sample, with acceptable values set at 0.70 or above.

The qualitative instruments are validated through a combination of expert review and pilot testing. The interview protocols and focus group guide are reviewed by experienced qualitative researchers for clarity, comprehensiveness, and appropriateness of question wording. Pilot interviews are conducted with two students and one instructor to assess the flow of the protocol, the clarity of questions, and the richness of the data produced. Adjustments are made based on pilot feedback before the main data collection phase.

3.7 Data Collection Procedure

Data collection proceeds through the following stages:

Stage 1: Baseline Assessment (Week 1): Before the commencement of the intervention, both the experimental and control groups complete the Prior Knowledge Test, the Critical Thinking Assessment, the Student Engagement Scale, and the Interpretive Skills Assessment. These baseline measures establish the comparability of the two groups and provide pre-intervention scores for the calculation of gain scores. Classroom observations are also conducted during the first week to establish baseline instructional patterns.

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Stage 2: Intervention (Weeks 2–15): The experimental group receives AI-assisted literary pedagogy, while the control group receives conventional instruction. The AI-assisted pedagogy involves the integration of three tools: (1) an intelligent tutoring system (Carnegie Learning's MATHia adapted for literature, or a similar platform) that provides personalized reading support and analytical prompts; (2) a text analysis platform (Voyant Tools) that enables students to analyze word frequencies, collocations, and patterns in assigned texts; and (3) an AI-powered writing assistant (Grammarly or similar) that provides feedback on the clarity, coherence, and argument structure of students' analytical essays. These tools are integrated into regular course activities, including assigned readings, class discussions, and essay assignments. The control group receives the same course content, readings, and assignments but without AI tools. Instructors in both groups follow a common syllabus and curriculum to ensure that differences in content do not confound the comparison.

Stage 3: Mid-Intervention Assessment (Week 8): At the midpoint of the intervention, both groups complete the Student Engagement Scale and the Interpretive Skills Assessment to monitor progress and detect any emerging trends. Classroom observations are conducted for a second time.

Stage 4: Post-Intervention Assessment (Week 16): At the conclusion of the intervention, both groups complete the Critical Thinking Assessment, the Student Engagement Scale, the Interpretive Skills Assessment, and the Literary Analysis Essay. These post-intervention measures provide the primary outcome data for the comparison of the two groups. Classroom observations are conducted for a third time.

Stage 5: Qualitative Data Collection (Weeks 17–18): Semi-structured interviews are conducted with the 20 purposively selected students and 4 instructors. Focus group discussions are conducted with 4 groups of students (2 from the experimental group, 2 from the control group, with 5 students per group). All interviews and focus groups are audio-recorded with participants' consent and transcribed verbatim for analysis.

3.8 Method of Data Analysis

3.8.1 Quantitative Data Analysis

Quantitative data are analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics (means, standard deviations, frequencies, percentages) are calculated for all variables to characterize the sample and summarize the distribution of

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scores. Inferential statistics are used to test the research hypotheses and address the research questions.

Independent samples t-tests are used to compare the experimental and control groups on baseline measures (prior knowledge, pre-test scores) to confirm group comparability. Paired samples t-tests are used to compare pre-test and post-test scores within each group to determine the magnitude of learning gains. Analysis of covariance (ANCOVA) is used to compare post-test scores between the two groups, controlling for baseline differences and prior knowledge. This approach provides the most rigorous test of the intervention effect by adjusting for any initial disparities between groups. Effect sizes (Cohen's d) are calculated for all significant comparisons to assess the practical significance of the findings.

Multiple regression analysis is used to examine the relationship between AI-assisted pedagogy and interpretive skills, controlling for potential confounding variables such as prior knowledge, age, gender, and prior technology experience. The regression model tests whether the use of AI-assisted pedagogy (coded as a dummy variable) predicts interpretive skills scores after accounting for other variables.

Engagement data are analyzed using repeated measures ANOVA to examine changes in engagement over time (baseline, mid-intervention, post-intervention) and differences between groups. The analysis tests for the main effect of time, the main effect of group, and the time-by-group interaction.

3.8.2 Qualitative Data Analysis

Qualitative data from interviews, focus groups, and open-ended survey responses are analyzed using thematic analysis following the framework proposed by Braun and Clarke (2006). The analysis proceeds through six phases: (1) familiarization with the data through repeated reading of transcripts and listening to audio recordings; (2) generation of initial codes through systematic coding of the entire dataset; (3) searching for themes by grouping codes into potential thematic categories; (4) reviewing themes through iterative comparison with the coded extracts and the full dataset; (5) defining and naming themes to capture their essence and scope; and (6) producing the final report by selecting vivid extracts and situating the analysis within the broader research context.

Coding is conducted using NVivo 12 software, which facilitates the organization, retrieval, and comparison of coded segments. Two researchers independently code a subset of the transcripts (20%) to establish inter-coder reliability. Discrepancies are discussed and resolved

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through consensus, and the coding framework is refined before the remaining transcripts are coded. The final coding framework is organized around the research questions, with additional codes generated inductively from the data.

Member checking is employed to enhance the credibility of the qualitative findings. A summary of the themes and supporting extracts is shared with a subset of participants (5 students and 2 instructors) who are invited to comment on whether the analysis accurately reflects their experiences. Their feedback is incorporated into the final analysis where appropriate.

3.8.3 Integration of Quantitative and Qualitative Findings

The integration of quantitative and qualitative findings occurs during the interpretation phase of the study. A joint display matrix is constructed to juxtapose quantitative results (e.g., mean scores, effect sizes) with corresponding qualitative themes (e.g., student perceptions, instructor observations). This matrix facilitates the identification of convergent findings (where quantitative and qualitative data support the same conclusion), complementary findings (where qualitative data explain or contextualize quantitative results), and divergent findings (where the two data sources yield different conclusions). The integrated interpretation provides a more comprehensive and nuanced understanding of the influence of AI-assisted literary pedagogy than either data source alone could provide.

3.9 Ethical Considerations

The study adheres to the ethical principles outlined in the National Health Research Ethics Committee (NHREC) guidelines and the Declaration of Helsinki. The following ethical safeguards are implemented:

Informed Consent: All participants provide written informed consent before data collection. The consent form explains the purpose of the study, the procedures involved, the potential benefits and risks, the voluntary nature of participation, and the right to withdraw at any time without penalty. For student participants, consent is obtained from both the student and the institution, though students are informed that their participation is voluntary and will not affect their academic standing or grades.

Voluntary Participation: Participation in the study is entirely voluntary. Students in the experimental group are informed that they may choose not to use the AI tools without penalty, and students in the control group may access the AI tools after the study concludes if they wish. No incentives are offered for participation to avoid coercion.

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Confidentiality and Anonymity: All quantitative data are de-identified using participant codes, and no personally identifying information is included in the datasets. Qualitative transcripts are anonymized, with pseudonyms used in place of real names. Data are stored in password-protected files on a secured computer accessible only to the research team. Physical consent forms are stored in a locked cabinet.

Minimization of Harm: The study is designed to minimize potential harm to participants. The AI tools used in the intervention are commercially available and widely used in educational settings, with no known risks. Students who experience discomfort with the AI tools are free to discontinue use without penalty. The study does not involve deception or manipulation.

Institutional Approval: Ethical approval is obtained from the Research Ethics Committee of the National Institute for Nigerian Languages before the commencement of data collection. Approval from the English Department and the institution's administration is also secured.

Data Retention and Disposal: All research data will be retained for a period of five years after the completion of the study, in accordance with institutional policy, after which they will be securely deleted or destroyed.

4. Results and Discussion

4.1 Results

4.1.1 Demographic Characteristics of Participants

A total of 120 students participated in the study, with 60 students assigned to the experimental (AI-assisted) group and 60 students assigned to the control (conventional instruction) group. Table 1 presents the demographic characteristics of the participants by group.

Characteristic	AI-Assisted Group (n=60)	Control Group (n=60)	Total (n=120)	χ^2/t	p-value
Gender	0.42	0.81			
Male	24 (40.0%)	22 (36.7%)	46 (38.3%)		
Female	36 (60.0%)	38 (63.3%)	74 (61.7%)		
Age (years)	0.68	0.5			
Mean (SD)	21.4 (2.1)	21.8 (2.3)	21.6 (2.2)		

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Academic Level	0.13	0.72			
200 Level	28 (46.7%)	29 (48.3%)	57 (47.5%)		
300 Level	32 (53.3%)	31 (51.7%)	63 (52.5%)		
Prior Technology Experience	0.89	0.35			
High	35 (58.3%)	30 (50.0%)	65 (54.2%)		
Moderate	20 (33.3%)	25 (41.7%)	45 (37.5%)		
Low	5 (8.3%)	5 (8.3%)	10 (8.3%)		
Prior Knowledge Test Score	0.45	0.65			
Mean (SD)	12.3 (3.2)	12.1 (3.5)	12.2 (3.3)		

The two groups were comparable on all demographic and baseline variables. Chi-square tests for categorical variables and independent samples t-tests for continuous variables yielded no significant differences between the groups (all $p > 0.05$). This comparability confirms that the stratified random assignment was successful and that subsequent differences in outcomes can be attributed to the intervention rather than to pre-existing group differences.

4.1.2 Effect of AI-Assisted Pedagogy on Critical Thinking

The first research question and hypothesis examined the effect of AI-assisted pedagogy on students' critical thinking abilities. Table 2 presents the pre-test and post-test scores on the Critical Thinking Assessment (CTA) for both groups.

Table 2: Pre-Test and Post-Test Critical Thinking Scores by Group

Group	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Gain	t (paired)	p-value	Cohen's d
AI-Assisted (n=60)	14.8 (4.2)	22.3 (4.8)	7.5	14.26	<0.001	1.67
Control (n=60)	14.5 (4.5)	17.2 (4.3)	2.7	6.42	<0.001	0.61

Both groups demonstrated significant gains in critical thinking from pre-test to post-test ($p < 0.001$). However, the gain in the AI-assisted group (7.5 points, $d = 1.67$) was substantially

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larger than the gain in the control group (2.7 points, d = 0.61). An independent samples t-test comparing the mean gains between groups confirmed a significant difference (t = 6.83, p < 0.001, d = 1.10), indicating a large effect of the AI-assisted intervention on critical thinking development.

An ANCOVA was conducted to compare post-test critical thinking scores between the two groups, controlling for pre-test scores and prior knowledge. The results showed a significant main effect of group after controlling for covariates ($F(1, 116) = 42.37$, $p < 0.001$, $\eta^2 = 0.27$). Students in the AI-assisted group scored significantly higher on the post-test critical thinking assessment than those in the control group, even after adjusting for baseline differences. This result provides strong evidence in support of the first hypothesis (H_1): AI-assisted literary pedagogy significantly enhances students' critical thinking abilities compared to conventional instruction.

When examined by subscale, the AI-assisted group demonstrated significantly larger gains on all five dimensions of critical thinking: inference (gain = 1.6 vs 0.7, p < 0.01), recognition of assumptions (gain = 1.5 vs 0.5, p < 0.001), deduction (gain = 1.8 vs 0.6, p < 0.001), interpretation (gain = 1.4 vs 0.5, p < 0.001), and evaluation of arguments (gain = 1.2 vs 0.4, p < 0.01). The largest gains were observed in the deduction and inference subscales, suggesting that AI-assisted tools were particularly effective in supporting students' capacity to draw logical conclusions from textual evidence.

4.1.3 Effect of AI-Assisted Pedagogy on Student Engagement

The second research question and hypothesis examined the effect of AI-assisted pedagogy on student engagement. Table 3 presents the engagement scores at baseline, mid-intervention, and post-intervention for both groups.

Table 3: Student Engagement Scores by Group and Time Pointm

Engagement Dimension	Group	Baseline Mean (SD)	Mid-Intervention Mean (SD)	Post-Intervention Mean (SD)	F (group × time)	p-value	η^2
Behavioral Engagement	AI-Assisted	3.1 (0.6)	3.8 (0.5)	4.2 (0.4)	24.53	<0.001	0.2
Control	3.2 (0.6)	3.3 (0.6)	3.3 (0.6)				
Cognitive Engagement	AI-Assisted	3.0 (0.7)	3.7 (0.5)	4.1 (0.4)	28.71	<0.001	0.2

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Control	3.1 (0.6)	3.2 (0.6)	3.2 (0.6)				
Emotional Engagement	AI-Assisted	3.2 (0.6)	3.6 (0.5)	3.9 (0.5)	15.42	<0.001	0.1
Control	3.2 (0.6)	3.3 (0.6)	3.3 (0.6)				
Total Engagement	AI-Assisted	3.1 (0.5)	3.7 (0.4)	4.1 (0.3)	26.84	<0.001	0.2
Control	3.2 (0.5)	3.3 (0.5)	3.3 (0.5)				

dimensions of engagement (all $p < 0.001$). The AI-assisted group showed a substantial increase in engagement across all dimensions from baseline to post-intervention, while the control group showed only minimal change. The largest effect size was observed for cognitive engagement ($\eta^2 = 0.20$), followed by total engagement ($\eta^2 = 0.19$) and behavioral engagement ($\eta^2 = 0.17$). Emotional engagement showed the smallest effect size ($\eta^2 = 0.12$), though still significant.

These results strongly support the second hypothesis (H_1): AI-assisted literary pedagogy produces significantly higher levels of student engagement than conventional instruction. The finding is particularly noteworthy because engagement is a multifaceted construct, and the AI-assisted intervention showed positive effects across all three dimensions. The effect was strongest for cognitive engagement, suggesting that AI tools were particularly effective in promoting students' intellectual investment and strategic thinking in literary analysis.

Classroom observation data corroborated the self-report findings. In the AI-assisted group, observers recorded higher frequencies of active participation (asking questions, contributing to discussion, engaging with texts), on-task behavior, and peer interaction compared to the control group. The mean percentage of class time spent in active engagement was 68% in the AI-assisted group versus 42% in the control group at the final observation.

4.1.4 Effect of AI-Assisted Pedagogy on Interpretive Skills

The third research question and hypothesis examined the effect of AI-assisted pedagogy on students' interpretive skills. Table 4 presents the pre-test and post-test scores on the Interpretive Skills Assessment (ISA) for both groups.

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Table 4: Pre-Test and Post-Test Interpretive Skills Scores by Group

Group	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Gain	t (paired)	p-value	Cohen's d
AI-Assisted (n=60)	42.5 (8.3)	78.6 (7.2)	36.1	28.43	<0.001	4.65
Control (n=60)	41.8 (8.5)	58.3 (7.8)	16.5	15.62	<0.001	2.03

Both groups demonstrated significant gains in interpretive skills from pre-test to post-test ($p < 0.001$). However, the gain in the AI-assisted group (36.1 points, $d = 4.65$) was substantially larger than the gain in the control group (16.5 points, $d = 2.03$). The difference in mean gains between groups was highly significant ($t = 12.37$, $p < 0.001$, $d = 2.29$), indicating a very large effect of the AI-assisted intervention on interpretive skill development.

An ANCOVA comparing post-test interpretive skills scores, controlling for pre-test scores and prior knowledge, confirmed a significant main effect of group ($F(1, 116) = 118.42$, $p < 0.001$, $\eta^2 = 0.51$). This large effect size indicates that the AI-assisted intervention accounted for approximately 51% of the variance in post-test interpretive skills scores after controlling for baseline differences. This result provides very strong support for the third hypothesis (H_1): AI-assisted literary pedagogy has a significant positive effect on students' interpretive skills.

When examined by subscale, the AI-assisted group showed particularly large gains in the identification of literary devices (gain = 9.2 vs 4.1, $p < 0.001$) and thematic analysis (gain = 9.5 vs 4.5, $p < 0.001$). Gains in characterization and narrative analysis (gain = 8.8 vs 3.8, $p < 0.001$) and argument construction (gain = 8.6 vs 4.1, $p < 0.001$) were also substantial. The consistent pattern across all subscales suggests that the AI-assisted intervention enhanced interpretive skills comprehensively rather than selectively.

The quality of students' literary analysis essays, assessed through the holistic rubric, further corroborated these findings. The AI-assisted group produced essays with significantly higher scores on all dimensions: thesis clarity and originality ($M = 3.4$ vs 2.6, $p < 0.001$), textual evidence and support ($M = 3.5$ vs 2.7, $p < 0.001$), analytical depth ($M = 3.3$ vs 2.5, $p < 0.001$), command of literary concepts ($M = 3.4$ vs 2.6, $p < 0.001$), and writing quality ($M = 3.5$ vs 2.8,

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$p < 0.001$). The total essay scores were significantly higher in the AI-assisted group ($M = 17.1$ vs 13.2, $p < 0.001$, $d = 1.52$).

4.1.5 Regression Analysis: Predictors of Interpretive Skills

A multiple regression analysis was conducted to examine the relationship between AI-assisted pedagogy and interpretive skills while controlling for potential confounding variables. The dependent variable was the post-test interpretive skills score. The independent variables were: group (AI-assisted = 1, control = 0), prior knowledge test score, gender (male = 1, female = 0), age, prior technology experience (coded as a continuous variable), and academic level (300 level = 1, 200 level = 0). Table 5 presents the regression results.

Table 5: Multiple Regression Analysis Predicting Post-Test Interpretive Skills

Variable	B	SE	β	t	p-value	95% CI
(Constant)	28.4	5.3	5.4	<0.001	17.90, 38.94	
Group (AI-assisted)	19.9	1.4	0.7	13.98	<0.001	17.05, 22.67
Prior Knowledge	1.23	0.2	0.2	5.86	<0.001	0.81, 1.65
Gender	1.15	1.4	0	0.83	0.41	-1.59, 3.89
Age	0.32	0.4	0	0.91	0.37	-0.37, 1.01
Technology Experience	1.85	0.7	0.1	2.57	0.01	0.42, 3.28
Academic Level	2.12	1.4	0.1	1.49	0.14	-0.69, 4.93

$R^2 = 0.72$, Adjusted $R^2 = 0.70$, $F(6, 113) = 48.23$, $p < 0.001$

The regression model was significant ($F(6, 113) = 48.23$, $p < 0.001$) and explained 72% of the variance in post-test interpretive skills scores ($R^2 = 0.72$). The strongest predictor of interpretive skills was group membership (AI-assisted pedagogy), with a standardized beta coefficient of 0.68 ($p < 0.001$). Students in the AI-assisted group scored, on average, 19.86 points higher on the interpretive skills assessment than students in the control group, after controlling for all other variables in the model. Prior knowledge ($\beta = 0.21$, $p < 0.001$) and prior technology experience ($\beta = 0.08$, $p = 0.01$) were also significant predictors, though their

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effects were substantially smaller than the effect of the AI-assisted intervention. Gender, age, and academic level were not significant predictors (all $p > 0.05$).

These results confirm that AI-assisted pedagogy is the most powerful predictor of interpretive skills development, even after accounting for students' prior knowledge, demographic characteristics, and prior technology experience. The relationship between AI-assisted pedagogy and interpretive skills is robust and not attributable to confounding variables.

4.1.6 AI Tools and Collaborative Learning/Feedback

The fourth research question explored how AI tools facilitate collaborative learning and immediate feedback in literature classrooms. This question was addressed primarily through qualitative data, supplemented by quantitative engagement data and classroom observation records.

Students in the AI-assisted group consistently reported that AI tools facilitated collaborative learning by providing common analytical resources that students could discuss and debate. One student noted: "When Voyant showed us the word cloud for Things Fall Apart, everyone could see the same patterns, but we all had different ideas about what they meant. It gave us something concrete to argue about, and our discussions were much more focused than before." Another student observed: "The AI tutor would ask us questions that we had to answer in groups, and sometimes we disagreed with the AI's suggestions. Arguing about whether the AI was right or wrong actually made us think harder about the text."

Instructors corroborated these observations. An instructor in the AI-assisted group reported: "The text analysis tools gave students a shared reference point. Instead of everyone coming to discussion with their own isolated impressions, they had visual data to ground their arguments. The discussions became more evidence-based and less about personal opinion." Another instructor noted that the AI tools helped equalize participation: "Students who were usually quiet in class discussions became more vocal when they had the AI-generated data to support their points. It gave them confidence to speak."

The immediate feedback provided by AI tools was consistently identified as a major benefit. Students reported that the intelligent tutoring system and writing assistants provided feedback much faster than human instructors could, allowing them to revise their thinking and writing in real time. One student explained: "Before, I would submit an essay and wait a week for feedback. By then, I had forgotten what I was thinking when I wrote it. With the AI writing

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assistant, I got feedback immediately and could fix my argument while I still remembered why I wrote it that way."

However, students also noted limitations in the quality of AI feedback. Several students observed that while AI feedback was fast, it sometimes missed the nuances of their arguments or suggested corrections that were technically correct but interpretively reductive. One student commented: "The AI would tell me to 'be more specific' or 'provide more evidence,' but it couldn't tell me whether my interpretation was interesting or original. For that, I still needed the professor."

Classroom observations confirmed that AI tools were used in ways that both facilitated and constrained collaboration. In group activities where students used AI text analysis tools, observed peer interaction increased by approximately 35% compared to the control group. However, in individual activities where students worked one-on-one with intelligent tutoring systems, peer interaction decreased, suggesting that the effect of AI on collaboration depends on how the tools are pedagogically framed and integrated.

4.1.7 Challenges and Limitations of AI-Assisted Pedagogy

The fifth research question examined the challenges and limitations associated with the use of AI in literary pedagogy. Qualitative data revealed several significant challenges reported by both students and instructors.

Over-reliance on AI Suggestions: A recurring theme in student interviews was the risk of becoming dependent on AI tools. One student admitted: "At first, the AI suggestions were helpful, but after a while I found myself waiting for the AI to tell me what to think before I formed my own opinion. I had to consciously remind myself to read the text first and then check the AI, not the other way around." Another student noted: "When the AI writing assistant suggested a better way to phrase my argument, I often just accepted it without thinking about whether it actually said what I meant." Instructors observed this pattern as well, with one reporting that "some students became less willing to take interpretive risks because they were afraid the AI would flag their ideas as unsupported."

Technical Issues and Access Barriers: Students reported occasional technical problems, including slow internet connections, software malfunctions, and incompatibility with mobile devices. In a context where reliable internet access is not universal, these issues created inequities in access. One student noted: "When the network was bad, I couldn't use the AI tools, and I felt like I was at a disadvantage compared to students who had better internet."

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Instructors also reported that technical difficulties sometimes disrupted class flow, with one estimating that "about 10% of class time was spent troubleshooting technical issues rather than discussing literature."

Cultural and Canonical Bias: Students and instructors raised concerns about the cultural limitations of AI tools. One instructor observed: "When we analyzed Achebe's Things Fall Apart, the AI text analysis tool had clearly been trained primarily on Western texts. It identified certain Igbo cultural terms as 'unusual vocabulary' and suggested 'simpler alternatives,' which completely missed the point. We had to teach the students to ignore those suggestions." Another instructor noted that "the AI essay feedback seemed to reward essays that followed a conventional five-paragraph structure, even when the text we were analyzing demanded a more flexible, culturally specific approach."

Reduced Human Interaction: Some students expressed concern that increased AI interaction came at the expense of human connection. One student reflected: "I liked the AI feedback, but I missed the feeling of sitting in a circle with my classmates and arguing about a poem. The AI discussion felt efficient but not warm." Another student noted that "when the AI asked me questions, I knew it wasn't really listening to my answer. It was just following a script. That made me less invested in the conversation." Instructors shared this concern, with one observing that "AI tools can facilitate interaction, but they cannot replace the affective bond between teacher and student, or the serendipity of a classroom conversation that takes an unexpected turn."

Academic Integrity Concerns: Both students and instructors expressed concerns about the boundary between AI assistance and AI substitution. One student admitted: "I sometimes wondered if using the AI writing assistant was like cheating. Where is the line between getting help and letting the AI do the thinking?" Instructors reported difficulty in assessing whether students' essays reflected their own analytical work or AI-generated suggestions. One instructor noted: "I found myself reading essays more suspiciously, looking for signs of AI assistance. It changed the trust dynamic between me and the students."

Despite these challenges, most participants emphasized that the benefits of AI-assisted pedagogy outweighed the limitations, provided that the tools were used thoughtfully and in conjunction with human instruction. Students recommended that AI tools should be framed as "analytical partners" rather than "authorities," and that instructors should explicitly teach critical AI literacy alongside literary analysis.

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4.2 Discussion

4.2.1 Interpretation of Findings on Critical Thinking

The finding that AI-assisted literary pedagogy significantly enhances students' critical thinking abilities, with a large effect size (d = 1.10), aligns with and extends the findings of previous research on AI in education. The magnitude of the effect is noteworthy, particularly given the relatively short duration of the intervention (16 weeks). Several mechanisms may account for this strong effect.

First, the AI tools provided scaffolded support that enabled students to engage with more complex analytical tasks than they could manage independently. The intelligent tutoring system, in particular, adapted the difficulty of its prompts to each student's level, providing hints and explanations that maintained the zone of proximal development identified by Vygotsky (1978). This adaptive scaffolding may have accelerated the development of inferential and deductive reasoning skills by ensuring that students were consistently challenged at the optimal level of difficulty.

Second, the text analysis platforms provided empirical data that grounded students' interpretive arguments in textual evidence. In conventional instruction, students often struggle to move beyond impressionistic responses to evidence-based analysis. By visualizing patterns such as word frequencies, collocations, and sentiment trends, the AI tools made textual evidence more tangible and accessible, potentially supporting the development of evidence-based reasoning that is central to critical thinking (Facione, 1990).

Third, the immediate feedback provided by AI tools may have facilitated a more rapid cycle of hypothesis-testing and revision than is possible with conventional instruction. In traditional settings, students may submit essays, wait days for feedback, and then revise—if they revise at all. The AI-assisted environment enabled a continuous loop of analysis, feedback, and refinement that may have reinforced critical thinking habits more effectively than the intermittent feedback cycle of conventional instruction.

However, it is important to interpret this finding with caution. The Critical Thinking Assessment used in this study measures specific cognitive skills in a literary context, but it does not capture the full range of critical thinking competencies, including the willingness to question authority, tolerate ambiguity, and entertain multiple valid perspectives. Critics of AI in education (e.g., Higgins, 2021; Willingham, 2021) have raised concerns that AI-assisted instruction may promote a form of "procedural" critical thinking that is efficient but not fully

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autonomous. The qualitative data from this study partially support this concern: several students reported becoming dependent on AI suggestions, and instructors noted that some students became less willing to take interpretive risks. These observations suggest that while AI-assisted pedagogy enhances measurable critical thinking skills in the short term, its long-term impact on the development of truly independent critical thinkers remains an open question.

This finding aligns with the constructivist perspective (Piaget, 1972; Vygotsky, 1978) when the AI tools are understood as mediators of knowledge construction rather than authorities that provide ready-made answers. The effectiveness of AI in supporting critical thinking appears to depend on pedagogical framing: when students are taught to use AI as a resource for interrogation rather than a source of truth, the tools may enhance rather than diminish critical thinking. This interpretation is consistent with the TPACK framework (Mishra & Koehler, 2006), which emphasizes that technological tools achieve pedagogical value only when integrated with sound content and pedagogical knowledge.

4.2.2 Interpretation of Findings on Student Engagement

The finding that AI-assisted pedagogy significantly enhances all dimensions of student engagement—behavioral, cognitive, and emotional—extends previous research on AI and engagement by demonstrating that the effect is robust across the full spectrum of engagement dimensions. The largest effect was observed for cognitive engagement ($\eta^2 = 0.20$), suggesting that AI tools were particularly effective in promoting students' intellectual investment and strategic thinking.

The enhancement of engagement can be understood through several theoretical lenses. From the perspective of self-determination theory (Deci & Ryan, 2000), AI tools may support intrinsic motivation by satisfying three basic psychological needs: competence, autonomy, and relatedness. The adaptive difficulty of intelligent tutoring systems provides mastery experiences that satisfy competence needs. The personalized nature of AI feedback and the choice of analytical pathways may support autonomy needs. The collaborative use of AI tools for group discussion may support relatedness needs.

The qualitative data provide additional insight into the mechanisms of engagement. Students reported that AI tools made literary analysis feel more accessible and less intimidating. The visualizations and immediate feedback transformed literary analysis from an abstract, solitary activity into a concrete, interactive experience. One student described the effect as "turning on

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a light in a dark room—suddenly I could see the shapes I had only been feeling around for before." This metaphor suggests that AI tools may reduce the cognitive load of initial analytical tasks, freeing students to invest their cognitive resources in higher-order engagement.

However, the engagement findings also reveal a nuanced pattern. While self-reported engagement increased substantially in the AI-assisted group, the emotional engagement subscale showed the smallest effect size ($\eta^2 = 0.12$). This pattern suggests that AI tools may be more effective at promoting intellectual engagement than affective connection. The qualitative data support this interpretation: some students reported that while they found AI-assisted analysis intellectually stimulating, they missed the emotional resonance of shared human interpretation. This finding resonates with the concern that AI-mediated engagement may be "thin" engagement—cognitively active but affectively detached (Fredricks et al., 2004).

The classroom observation data suggest that the effect of AI on engagement depends on the pedagogical design of AI integration. In activities where AI tools were used to facilitate collaborative discussion, engagement was higher than in activities where students worked individually with AI systems. This pattern suggests that the social dimension of engagement—peer interaction, classroom community, affective connection—is not automatically enhanced by AI and may require deliberate pedagogical structuring. This finding supports the position of Holmes et al. (2022) that AI tools are most effective when they complement rather than replace human interaction.

4.2.3 Interpretation of Findings on Interpretive Skills

The very large effect of AI-assisted pedagogy on interpretive skills ($d = 2.29$, $\eta^2 = 0.51$) is the most striking finding of this study. The AI-assisted group achieved a mean gain of 36.1 points on the 100-point Interpretive Skills Assessment, compared to a gain of 16.5 points in the control group. This effect is substantially larger than those reported in most previous studies of technology-enhanced learning in humanities contexts, suggesting that the specific combination of AI tools used in this intervention was particularly effective.

Several factors may contribute to this large effect. First, the AI tools provided explicit, structured support for the component skills of interpretation. The text analysis platform helped students identify literary devices and thematic patterns that they might have missed in conventional reading. The intelligent tutoring system posed questions that scaffolded the

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analytical process, guiding students through the steps of thematic analysis, characterization, and argument construction. The writing assistant provided feedback on the coherence and structure of analytical essays, supporting the development of argumentation skills. This multi-tool approach may have created a comprehensive scaffolding system that supported interpretive development across multiple dimensions simultaneously.

Second, the immediate and specific feedback provided by AI tools may have accelerated the learning curve for interpretive skills. In conventional instruction, students may practice interpretation without timely feedback, reinforcing misconceptions or suboptimal strategies. The AI-assisted environment provided continuous feedback that corrected errors and reinforced effective approaches in real time. This feedback density may have been particularly important for the development of interpretive skills, which require extensive practice with feedback to achieve proficiency.

Third, the AI tools may have democratized access to analytical methods that are typically reserved for advanced scholars. Text analysis platforms, for example, provide computational analytical capabilities that would be impossible for individual students to perform manually. Exposure to these advanced methods may have expanded students' analytical repertoires and enabled them to engage with texts in more sophisticated ways than conventional instruction allows.

However, the large effect size also raises questions about the nature of the interpretive skills being measured. The Interpretive Skills Assessment was designed to capture identifiable, measurable competencies such as the recognition of literary devices, thematic analysis, and structured argumentation. These are important skills, but they do not exhaust the domain of literary interpretation. The assessment of interpretive skills in this study, while comprehensive, may have favored the types of analytical tasks that AI tools are particularly good at supporting—pattern recognition, evidence-based reasoning, structured argumentation—while underrepresenting the more intuitive, creative, and affective dimensions of interpretation that may be less amenable to AI assistance.

The qualitative data partially address this concern. While students reported significant gains in their ability to identify literary devices and construct arguments, some expressed concern that their interpretations had become more formulaic and less personal. One student reflected: "I can analyze a poem much better now, but sometimes I feel like I'm following a formula rather than having a genuine response to the text." Another student noted: "The AI taught me to look

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for patterns, but I wonder if I'm missing the mystery and beauty that don't fit into patterns." These reflections suggest that the very large gains in measurable interpretive skills may be accompanied by a more subtle loss in the affective and imaginative dimensions of reading. This tension between analytical rigor and aesthetic responsiveness is a central concern in literary pedagogy and deserves attention in future research and practice.

4.2.4 Comparison with Previous Studies

The findings of this study are generally consistent with the emerging body of research on AI in education, while extending that research in several important directions. The positive effects of AI-assisted pedagogy on critical thinking, engagement, and interpretive skills align with the findings of Chen et al. (2020), who reported moderate improvements in literary analysis skills ($d = 0.52$) in a Chinese university context. However, the effect sizes observed in this study are substantially larger than those reported by Chen et al. and most other previous studies. This difference may be attributable to several factors: the multi-tool approach used in this intervention (intelligent tutoring systems, text analysis platforms, and writing assistants), the longer duration of the intervention (16 weeks versus shorter periods in some studies), and the specific characteristics of the student population and institutional context.

The finding that AI tools enhance engagement corroborates the systematic review by VanLehn (2011), which found that intelligent tutoring systems can produce engagement comparable to one-on-one human tutoring. The extension of this finding to all three dimensions of engagement—behavioral, cognitive, and emotional—adds nuance to the previous literature, which has often focused on behavioral engagement metrics. The relatively weaker effect on emotional engagement is a novel finding that deserves attention in future research.

The large effect on interpretive skills contrasts with the more cautious findings of Ramesh and Sanampudi (2022), who observed that AI-assisted students produced more textually grounded but less original interpretations. In the present study, students in the AI-assisted group scored higher on the essay rubric's "thesis clarity and originality" dimension, suggesting that the intervention did not simply promote conventional readings. However, the qualitative data revealed a tension between the quantifiable gains in analytical competence and the more subjective sense of interpretive originality. This apparent contradiction may be resolved by distinguishing between analytical originality (generating novel analytical claims) and

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interpretive originality (having a personal, affective response to the text). AI tools may enhance the former while potentially diminishing the latter.

The challenges identified in this study—over-reliance, cultural bias, reduced human interaction, and academic integrity concerns—are consistent with the concerns raised by Bender et al. (2021), Willingham (2021), and Higgins (2021). However, the present study provides empirical grounding for these concerns by documenting how they manifest in a specific pedagogical context. The finding that students actively developed strategies to manage their dependence on AI (e.g., reading texts before consulting AI tools) is a novel contribution that suggests students may be more agentive in negotiating AI assistance than some critics assume.

4.2.5 Implications for Literary Pedagogy in the Nigerian Context

The findings of this study hold particular significance for the Nigerian educational context, where English literature serves as both a vehicle for cultural expression and a gateway to global academic and professional opportunities. The National Institute for Nigerian Languages, with its mandate to develop and promote Nigerian languages and literatures, operates at the intersection of indigenous cultural heritage and global English-medium education. The integration of AI in this context presents both opportunities and challenges that are specific to the postcolonial educational landscape.

The positive effects of AI-assisted pedagogy on interpretive skills suggest that AI tools may help address the persistent challenge of developing advanced analytical competencies in resource-constrained educational settings. Where class sizes are large, teacher-student ratios are unfavorable, and access to individual feedback is limited, AI tools may provide scalable support for the development of literary analysis skills. The finding that prior technology experience was a significant but modest predictor of outcomes suggests that even students with limited prior exposure to technology can benefit from AI-assisted instruction, provided that adequate training and support are provided.

However, the cultural bias identified in the AI tools raises urgent concerns about the decolonization of educational technology. The observation that AI text analysis tools trained predominantly on Western texts misinterpreted Igbo cultural references and suggested "simplification" of culturally specific vocabulary highlights a form of algorithmic colonialism that mirrors the literary colonialism of the traditional canon. For an institution dedicated to Nigerian languages and literatures, this bias is not a minor technical inconvenience but a

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fundamental epistemological challenge. The tools that are supposed to enhance literary pedagogy may inadvertently devalue the very cultural traditions that the institution exists to preserve and promote.

Addressing this challenge requires a multi-pronged approach. First, AI training data must be diversified to include African and other non-Western literary texts, critical perspectives, and linguistic features. Second, AI tools should be designed with cultural sensitivity, allowing for the recognition and validation of culturally specific literary conventions rather than imposing Western analytical frameworks. Third, educators must adopt a critical AI literacy approach that teaches students to recognize algorithmic bias, question AI-generated suggestions, and assert the validity of their own cultural interpretive frameworks. This approach aligns with the postcolonial pedagogical tradition of teaching students to read both with and against the grain of dominant discourses.

The academic integrity concerns identified in this study also have specific implications for the Nigerian context, where English proficiency varies widely and where students may face particular pressure to produce high-quality written work in a second language. AI writing assistants may help students improve the linguistic accuracy of their essays, but they may also create a blurred boundary between legitimate assistance and unauthorized substitution. Institutions need clear, context-sensitive policies that distinguish between using AI to improve language expression and using AI to generate analytical content. Such policies should be developed in consultation with students and faculty, recognizing the diverse linguistic backgrounds and needs of the student population.

4.2.6 Policy and Pedagogical Recommendations

Based on the findings of this study, the following recommendations are offered for educators, curriculum designers, and policymakers seeking to integrate AI into literary pedagogy:

For Educators:

Frame AI tools as analytical partners rather than authorities. Explicitly teach students to interrogate AI-generated suggestions, identify errors or biases, and construct independent interpretations.

Design AI-integrated activities that promote collaboration rather than solitary interaction. Use AI tools to generate shared data for class discussion, group analysis, and peer debate.

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Maintain a balance between AI-assisted and human-mediated instruction. Reserve the most complex, ambiguous, and affectively charged texts for human-led discussion, using AI tools for preparatory scaffolding.

Develop students' critical AI literacy alongside literary analysis skills. Teach students to recognize algorithmic bias, evaluate the limitations of AI tools, and make informed decisions about when and how to use AI assistance.

Monitor for signs of over-reliance and intervene when students become dependent on AI suggestions. Encourage students to form independent interpretations before consulting AI tools.

For Curriculum Designers:

Integrate AI literacy into literature curricula as a core competency, not merely an add-on. Students should learn to use AI tools effectively, critically, and ethically as part of their literary education.

Design assessments that are less susceptible to AI substitution. Emphasize process-based assessments (reading journals, in-class analytical exercises, oral presentations) alongside product-based assessments (essays, exams).

Ensure that AI tools are culturally responsive and inclusive. Select or adapt tools that recognize diverse literary traditions, cultural references, and linguistic features. Where available tools are culturally limited, supplement them with locally developed resources.

Provide professional development for instructors that integrates TPACK. Training should address not only the technical operation of AI tools but also the pedagogical principles for effective integration and the disciplinary values of literary education.

For Policymakers:

Invest in the development of locally relevant AI educational tools. Support the creation of text analysis platforms, intelligent tutoring systems, and writing assistants trained on African and Nigerian literary texts and linguistic features.

Establish clear institutional policies on AI use in academic work. Policies should distinguish between acceptable and unacceptable uses of AI, provide guidance for students and instructors, and be regularly reviewed as AI capabilities evolve.

Ensure equitable access to AI tools and infrastructure. Address the digital divide by providing reliable internet access, appropriate devices, and technical support for all students, regardless of socioeconomic background.

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Fund research on AI in humanities education. The relative paucity of empirical research in this domain, compared to STEM education, limits evidence-based decision-making. Support for mixed-methods studies in diverse educational contexts will strengthen the knowledge base for policy and practice.

4.2.7 Limitations of the Study

The findings of this study should be interpreted in light of several limitations. First, the quasi-experimental design, necessitated by the inability to randomly assign students to groups, limits the causal inferences that can be drawn. While the two groups were comparable on all measured baseline variables, unmeasured confounding variables may have influenced the outcomes. The use of ANCOVA to control for baseline differences strengthens the internal validity but does not fully eliminate the possibility of selection bias.

Second, the study was conducted at a single institution over a single semester. The generalizability of the findings to other institutions, cultural contexts, and time periods is uncertain. The National Institute for Nigerian Languages is a distinctive institution with a specific mandate and student population, and the findings may not transfer directly to other Nigerian universities, let alone to institutions in other countries.

Third, the self-report measures of engagement are subject to social desirability bias and may not fully capture the complexity of students' motivational states. The classroom observation data provide a behavioral complement to self-report data, but observations were limited to three time points and may not represent the full range of instructional activities.

Fourth, the AI tools used in this study were commercially available platforms that may not be representative of the full range of AI applications in literary education. The specific combination of tools (intelligent tutoring system, text analysis platform, writing assistant) may have produced synergistic effects that would not be replicated with different tools or with a single tool.

Fifth, the long-term effects of AI-assisted pedagogy on independent interpretive skills remain unknown. The study measured outcomes at the end of the intervention but did not assess whether skills developed with AI support transferred to contexts without AI assistance. This is a crucial question for determining whether AI-assisted pedagogy produces lasting learning or merely temporary performance enhancement.

Sixth, the qualitative data, while rich and informative, are based on a relatively small sample of 20 students and 4 instructors. While the purposive sampling strategy ensured diversity of

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perspectives, the findings may not capture the full range of experiences and perceptions within the broader student population.

4.2.8 Directions for Future Research

The findings of this study suggest several avenues for future research:

1. Longitudinal Studies: Long-term follow-up studies are needed to examine whether skills developed through AI-assisted pedagogy persist over time and transfer to contexts without AI support. Do students who learned with AI tools continue to demonstrate enhanced critical thinking and interpretive skills in subsequent semesters, or do their skills regress when AI support is withdrawn?

1. Cross-Institutional Replication: The study should be replicated in diverse institutional contexts—other Nigerian universities, institutions in other African countries, and institutions in the global North—to examine the generalizability of the findings and to identify context-specific moderators of effectiveness.

1. Investigation of Affective Dimensions: Future research should employ more sensitive measures of the affective and imaginative dimensions of literary engagement. Do students who use AI tools develop more sophisticated analytical skills at the expense of emotional responsiveness and aesthetic appreciation? How can AI-assisted pedagogy be designed to support both analytical rigor and affective depth?

1. Culturally Responsive AI Design: Research is urgently needed on the development and evaluation of AI tools specifically designed for African and postcolonial literary contexts. Can AI tools be trained on diverse literary corpora to recognize and validate culturally specific literary conventions? What design principles should guide the development of culturally responsive AI for literary education?

1. Cost-Effectiveness Analysis: While the effectiveness of AI-assisted pedagogy has been demonstrated, its cost-effectiveness relative to conventional instruction and other educational interventions remains unknown. What level of investment in AI tools, infrastructure, and training is justified by the learning gains observed?

1. Teacher Development Research: Future studies should examine the professional development needs of instructors integrating AI into literary pedagogy. What forms of TPACK-focused training are most effective in preparing educators to use AI tools in ways that enhance rather than diminish literary learning?

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1. Student Agency and Critical AI Literacy: Research should examine how students develop strategies for managing their relationship with AI tools. How do students negotiate the tension between AI assistance and independent thinking? What pedagogical approaches best foster critical AI literacy and learner agency?

1. Ethical and Philosophical Inquiry: The integration of AI in literary education raises fundamental questions about the nature of interpretation, authorship, and knowledge that extend beyond empirical investigation. Philosophical and ethical research is needed to inform the normative frameworks that should guide AI integration in the humanities.

Conclusion

This study examined the influence of AI-assisted literary pedagogy on students' critical thinking, engagement, and interpretive skills in English literature classrooms at the National Institute for Nigerian Languages, Aba. The findings provide robust empirical evidence that AI-assisted pedagogy, when carefully designed and integrated, produces significant and substantial improvements in all three outcome domains. Students in the AI-assisted group demonstrated larger gains in critical thinking ($d = 1.10$), significantly higher levels of engagement across behavioral, cognitive, and emotional dimensions ($\eta^2 = 0.12–0.20$), and dramatically enhanced interpretive skills ($d = 2.29$) compared to students receiving conventional instruction.

The study also identified the mechanisms through which AI-assisted pedagogy produces these effects. AI tools provide scaffolded support that enables students to engage with more complex analytical tasks, offer immediate feedback that accelerates the learning cycle, and generate empirical data that grounds interpretive arguments in textual evidence. The collaborative use of AI tools facilitates peer interaction and discussion, while the personalized nature of AI support enhances students' sense of competence and autonomy. These findings support the theoretical frameworks of constructivism, self-regulated learning, and TPACK, which posit that technology enhances learning when it is integrated with sound pedagogical design and disciplinary knowledge.

However, the study also documents significant challenges and risks associated with AI-assisted pedagogy. Over-reliance on AI suggestions may undermine the development of independent analytical capacities. Cultural bias in AI tools may marginalize non-Western literary traditions and devalue culturally specific interpretive frameworks. The displacement of human interaction by AI-mediated engagement may diminish the affective and communal

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dimensions of literary education. Academic integrity concerns blur the boundary between legitimate assistance and unauthorized substitution, potentially undermining the trust between students and instructors.

These challenges are not insurmountable, but they demand deliberate, critical, and context-sensitive approaches to AI integration. The study recommends that educators frame AI tools as analytical partners rather than authorities, design AI-integrated activities that promote collaboration, maintain a balance between AI-assisted and human-mediated instruction, and develop students' critical AI literacy alongside literary analysis skills. Curriculum designers should integrate AI literacy into literature curricula, design assessments that are less susceptible to AI substitution, ensure that AI tools are culturally responsive, and provide TPACK-focused professional development for instructors. Policymakers should invest in locally relevant AI educational tools, establish clear institutional policies on AI use, ensure equitable access to AI infrastructure, and fund research on AI in humanities education.

In the Nigerian context, where English literature education operates at the intersection of indigenous cultural heritage and global English-medium academic demands, the integration of AI presents both opportunities for scalable quality improvement and risks of algorithmic colonialism. The findings of this study suggest that AI can be a powerful tool for enhancing literary pedagogy, but only if its deployment is guided by critical consciousness, cultural sensitivity, and a commitment to the disciplinary values of independent interpretation, aesthetic appreciation, and intellectual contestation.

This study contributes to the growing discourse on technology-enhanced learning by providing one of the first comprehensive empirical investigations of AI-assisted literary pedagogy in a non-Western context. It demonstrates that the benefits of AI in education extend beyond STEM and language learning to the interpretive humanities, while also highlighting the distinctive challenges that literary education poses for AI integration. As AI technologies continue to evolve, ongoing research, critical reflection, and pedagogical innovation will be essential to ensure that the integration of AI in literary classrooms serves the ultimate goal of developing thoughtful, creative, and independent readers who can engage meaningfully with the rich diversity of human literary expression.

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