

GENERATIVE ARTIFICIAL INTELLIGENCE AND UNDERGRADUATE RESEARCH: EXPERIENCES FROM RESEARCH PROJECT SUPERVISION IN A NIGERIAN COLLEGE OF EDUCATION

**Charles Okon Effiong [PhD] Department of English, College of Education, Afaha Nsit, Nsit Ibom L.G.A., Akwa Ibom State, Nigeria Correspondence E-mail: charleseffiong53@gmail.com
Tel: +2348027966656**

Abstract

Generative artificial intelligence (GenAI) is progressively influencing the methods by which students in higher education search for information, formulate concepts, and compose scholarly articles. Nevertheless, there is limited data regarding the influence of GenAI on undergraduate research methodologies at Nigerian Colleges of Education. This research investigates the application of GenAI in the formulation of undergraduate research projects, drawing from the researcher's experience overseeing 28 students across three academic terms at a Nigerian College of Education. A qualitative practitioner-inquiry methodology was employed in the research. Data were gathered from students' study concepts and their subsequent project drafts, supervisory observations and remarks, casual conversations about AI utilisation, relevant WhatsApp communications concerning project tasks, and reflective journals kept during supervision. The content was thematically analysed to identify patterns in students' AI-assisted study techniques. Four topics surfaced: applications of GenAI within the study methodology; academic and linguistic advantages; epistemological, ethical, and dependency-related risks; and consequences for research oversight and evaluation. GenAI proved beneficial for ideation, topic enhancement, elucidating concepts, condensing information, and enhancing linguistic expression. Students additionally encountered fabricated citations, uncritical acceptance of produced material, diminished interaction with primary sources, challenges in accessing digitally obscure local scholarship, and reliance on AI for tasks intended to foster autonomous research skills. The findings indicate that effective integration of GenAI necessitates AI literacy encompassing critical evaluation, verification of facts, contextual comprehension, ethical judgement, and intellectual accountability. The study advocates for process-focused oversight, AI-informed evaluation, and contextually relevant institutional policies for the responsible use of GenAI in undergraduate research.

Keywords: Generative artificial intelligence, Undergraduate research, AI literacy, Academic writing, Research supervision

1. Introduction

Generative artificial intelligence (GenAI) has emerged as a more prominent element within higher education. Systems adept in generating and modifying text can now facilitate tasks such as ideation, condensation, elucidation of concepts, language refinement, and formulating replies to scholarly enquiries. The swift proliferation of these platforms has generated prospects for both students and educators, although it has simultaneously prompted enquiries on academic honesty, intellectual property, information reliability, evaluation methods, and the cultivation of autonomous thought.

UNESCO (2023) thus advocates for a human-centric methodology wherein educational entities consider both the instructional potential and the ethical and societal hazards linked to GenAI.

These concerns hold significant relevance in undergraduate research endeavours. A research project transcends being merely a lengthy document; it constitutes a systematic educational journey wherein students are anticipated to cultivate skills in recognising researchable issues, articulating enquiries and aims, sourcing and assessing literature, choosing suitable methodologies, analysing data, and delivering a substantiated argument. When GenAI is incorporated into this process, the primary inquiry shifts from whether students utilise the technology to how they engage with it and whether its application enhances or replaces the cognitive effort that the research project aims to cultivate.

Recent studies indicate that learners utilise GenAI for various educational objectives. Kim et al. (2025) discovered that learners perceived GenAI-supported systems as beneficial for academic writing, while also recognizing difficulties associated with the technology, the writing assignment, and the students' individual skills. Ding et al. (2025) also discovered that feedback derived from ChatGPT might enhance several aspects of academic writing, while the integration of both teacher and AI input yielded more extensive advancements than AI feedback in isolation. Chugh et al. (2025) indicated that students appreciated GenAI as a supportive tool for problem-solving and enhancing efficiency, although they also expressed apprehensions over its accuracy, ethical implications, and potential for fostering dependency. These results indicate that GenAI could have educational merit when it enhances rather than supplants human discernment and teaching assistance.

The Nigerian setting holds significant relevance as the evidence from the nation is continually evolving. Yakubu et al. (2025) examined 289 students at a Nigerian public university and discovered that performance expectancy, effort expectancy, and social influence affected students' intents to utilise content-generative AI for educational and research purposes. Nwagbara (2025) indicated, through interviews with 20 Nigerian university students, that AI tools facilitated academic research and writing while also provoking apprehensions over academic integrity, reliance, and insufficient institutional assistance. Data from Ghana indicate that postgraduate students view AI tools favourably for academic writing, while acknowledging the necessity for responsible and context-aware application (Anani et al., 2025).

Despite the significance of these studies, there exists a paucity of study about the interaction with GenAI during the prolonged oversight of undergraduate research initiatives at Nigerian Colleges of Education. A significant portion of the current literature relies on surveys, interviews, focus groups, or regulated interventions. These methodologies are beneficial, although ongoing oversight might uncover issues that only emerge through iterative drafting, continuous discussions, and the gradual evolution of a project. It can also disclose the disparity between students' claims regarding their use of AI and what is apparent in their real research endeavours.

This research investigates the author's experience in overseeing 28 undergraduate research project students across three academic terms at Akwa Ibom State College of Education, Afaha Nsit, Nigeria. The research does not assert statistical representativeness. It provides a qualitative account of practitioner inquiry regarding repeating patterns identified in naturally occurring research supervision. The emphasis is on the way students utilised GenAI, the advantages that surfaced, the challenges that became apparent, and the ramifications for oversight and evaluation.

The study addresses four research questions:

1. How did undergraduate research-project students use GenAI during the development of their research projects?
2. What benefits were associated with students' use of GenAI?
3. What epistemic, ethical, and dependency-related risks became evident during AI-assisted research and writing?
4. What implications do these experiences have for research supervision and assessment?

The research presents three significant contributions. Initially, it offers contextually relevant information from a Nigerian College of Education, broadening existing research beyond university environments and studies predominantly centred on attitudes or intentions. Secondly, it relies on continuous supervisory data gathered over three academic terms instead of a solitary cross-sectional observation. Thirdly, it establishes a pragmatic differentiation between GenAI functioning as a framework and GenAI acting as a replacement for autonomous research endeavours, contending that proficiency in AI is crucial in assessing which of these scenarios is most probable.

2. Literature Review

2.1 GenAI and Academic Writing

Academic writing is one of the higher education activities most significantly influenced by GenAI. Learners may request generative systems to propose concepts, create outlines, refine sentences, elucidate grammatical selections, rephrase content, and offer critiques. These capabilities may be especially appealing to learners who are enhancing their skills in academic English or who are unsure about initiating a writing assignment.

Kim et al. (2025) demonstrate that students view GenAI as fulfilling multiple functions in academic writing, such as a writing aide and a provider of feedback and clarification. Ding et al. (2025) present additional proof that feedback derived from ChatGPT can enhance various elements of writing, including grammar, mechanics, tone, and APA formatting. Simultaneously, their results indicate that AI input does not inherently yield comparable enhancements in structure or substance, and that the participation of educators continues to be crucial.

The difference between linguistic assistance and cognitive output is thus significant. Rectifying grammatical errors or proposing alternate phrasing does not inherently supplant a student's intellectual input. Conversely, requesting an AI system to generate an argument, compile a literature review, or compose significant sections of a research report may transfer the onus of the intellectual endeavour from the student to the technology. The pedagogical worth of GenAI is thus contingent upon the type and extent of support provided.

2.2 GenAI and Undergraduate Research

Research projects are a series of related intellectual activities. Students need to narrow from a broad interest to a researchable subject, find relevant literature, develop questions and objectives, choose methodologies, and interpret findings. GenAI may be used to support each of these stages, although the dependability and educational value of that support differ.

Yakubu et al. (2025) show that Nigerian students are already interested in employing content-generative AI in learning and research. But their study focuses on behavioural intention and the elements related to adoption. The present study addresses a different level of the problem by investigating what becomes obvious in real project supervision.

Generative artificial intelligence can be helpful in the beginning of a study endeavour, in generating potential subjects or queries for students. It can also provide one with a first-time explanation of things one does not know about. However, generated ideas may be generic, redundant, or ill-suited to a specific local environment. A supervisor is still required to judge whether the proposed topic is researchable, whether objectives relate to the situation, and whether the literature and approach are adequate.

Another element requiring care is reference generation. Large language models can generate citations that sound correct but are false or unverifiable. Students who accept such references at face value without checking the actual publications may end up constructing a literature review with sources that do not exist or do not support the claims made about them. The difficulty makes source verification a key part of AI literacy.

2.3 AI Literacy and Critical Evaluation

AI literacy is not about being able to access or manipulate an AI system. In academic research, it means being able to comprehend where the system cannot go, to evaluate its outputs, to fact-check, to identify probable biases, to use sources responsibly, and to make educated choices regarding when to seek AI help. UNESCO (2023) emphasises human agency, ethical use, and the safeguarding of cultural and linguistic variety at the core of its recommendations on GenAI for education and research.

The present study differentiates between technical competence and critical competence. Students may be very good at providing an AI system, but not good enough to know whether the answer is right. Fluency can also breed a false feeling of reliability, since a well-formed answer may sound authoritative even when it is factually wrong, contains unsupported claims, or makes up references.

The New Literacies Theory can be a beneficial way to approach this problem. Lankshear and Knobel (2011) have conceptualised literacy as a range of socially situated practices defined by ever changing technologies. Students thus need new ways of accessing, assessing, comparing, validating and conveying material in an AI-assisted academia. Academic literacy includes AI literacy, not a separate technological talent.

2.4 Academic Integrity and Intellectual Ownership

GenAI hampers traditional methods of maintaining academic integrity. Traditional plagiarism guidelines emphasise the uncredited utilisation of another individual's expressions or concepts. AI-generated content raises a pertinent yet separate concern: although the provided language could not be explicitly replicated from a traditional source, the student could nevertheless showcase machine-generated intellectual output as proof of their research abilities.

The issue is especially critical in undergraduate research as the project aims to showcase the student's capacity for independent investigation. If an AI system generates the main argument, assembles the literature review, offers citations, and composes the final text, the resultant document may provide minimal indication of the student's research proficiency.

Recent findings from Nigeria indicate comparable issues. Nwagbara (2025) discovered that students acknowledged the benefits of AI technologies while expressing apprehensions regarding excessive reliance, academic honesty, and the lack of structured institutional support. These apprehensions underscore the necessity for institutional regulations that differentiate authentic support from the replacement of student efforts.

2.5 GenAI in African and Nigerian Higher Education

Context is important when deploying GenAI in academic research. African higher-education institutions are situated within a range of technological, economic, linguistic, and academic contexts. There may be a substantial body of local scholarship published in local journals, institutional documents, theses, government reports, and other sources that are less visible in large digital databases.

Anani et al. (2025) studied postgraduate students in Ghana and found generally good sentiments about AI tools for academic writing, while stressing the significance of responsible use. Together with Nigerian evidence from Yakubu et al. (2025) and Nwagbara (2025), these results suggest that African students are engaging with GenAI. The results also imply, however, that institutional guidance and critical skills are needed for AI to make a meaningful contribution to academic work.

This study brings a College of Education viewpoint and is particularly focused on research project management. This context is significant since the students in teacher-education institutions are developing not only academic research skills but also professional identities as future educators. In

this way, the ways in which individuals learn to use AI in their own academic growth may affect how they come to interpret and model technology used in traditional educational environments later.

3. Theoretical Framework

3.1 Technology Acceptance Model

According to Davis (1989) Technology Acceptance Model (TAM), perceived utility and perceived ease of use are significant predictors of technology acceptance. TAM is significant to the current research as students are more likely to adopt GenAI when they find it useful to perform academic assignments and easy to access and operate.

Perceived usefulness, however, is not to be confused with educational worth. Technology can be very useful to accomplish a task yet reduce the amount of learning required. Here, TAM is applied to explain the attractiveness of GenAI to students instead of evaluating the pedagogical desirability of all types of use.

3.2 New Literacies Theory

Literacy is seen as a social practice that varies as technologies and communicative settings change (Lankshear & Knobel, 2011). This view helps to explain why GenAI demands students to develop more skills than traditional reading and writing. They need to understand how to engage with artificial intelligence systems, evaluate the information they produce, compare the results with original sources and determine how to use them appropriately.

This approach is especially useful in analysing the gap between access and critical competency. Students are easily able to use new digital resources but are still building the evaluative procedures necessary for proper academic use.

3.3 Zone of Proximal Development

Vygotsky's (1978) concept of the Zone of Proximal Development (ZPD) offers a handy approach to think of AI as a potential scaffold. In educational environments, scaffolding helps students with things they cannot do by themselves yet. GenAI is able to provide explanations, examples, prompts and comments that can assist students gain higher proficiency.

Scaffolding is educationally effective only when it results in eventual independent performance. If students use AI to do the core intellectual work of research, the tool stops being a scaffold and starts

replacing learning. The three theoretical views are complementary, then. TAM offers insights into adoption, New Literacies Theory identifies the skills required for responsible use, and ZPD explains the distinction between help and substitute.

4. Method

4.1 Research Design

The design of the study was qualitative practitioner-inquiry. Practitioner-inquiry is acceptable when a practitioner systematically studies problems of professional practice to develop knowledge that is grounded in context. The study was motivated by the researcher's own experience of supervising undergraduate research projects and seeing students' use of AI tools in their research and writing.

The design does not aim at statistical generalisation. Instead, it aims to discover repeating patterns in naturally existing supervisory evidence that can enrich knowledge of GenAI-assisted undergraduate research and research supervision. This positioning resonates with recent qualitative EAIT research employing thematic analysis to explore students' experiences and activities (Cena et al., 2026; Chugh et al., 2025).

4.2 Research Setting and Participants

The study was carried out in Akwa Ibom State College of Education, Afaha Nsit, Nigeria. The researcher mentored 28 undergraduate students who conducted research projects over three academic terms. Students were not selected using a probability-sampling process, but a naturally occurring, bounded set of students that the researcher oversaw as part of usual academic obligations.

The 28 students are not claimed to be a statistical representation of all the students at the College or in Nigerian higher education, because the group was determined by the researcher's supervisory responsibilities. The evidence is valuable for its sustained, practice-based character rather than for its statistical representativeness.

4.3 Sources of Evidence

The evidence comprised several forms of naturally occurring supervisory material, as summarised in Table 1.

Table 1: Sources of evidence used in the practitioner inquiry

Source	Nature of evidence	Analytical value
Research proposals	Initial topics, problems, questions, objectives and early	Showed how research ideas developed and where AI assistance

	literature work	became visible
Successive project drafts	Drafts produced at different stages of project development	Allowed comparison of changes in writing, argument, literature use and research decisions
Supervisory observations and comments	Observations during normal project consultations	Provided evidence of recurring difficulties and responses to supervisory guidance
Informal discussions	Naturally occurring conversations about AI use during supervision	Provided contextual information about students' reported purposes for using AI
WhatsApp project messages	Relevant messages concerning project work	Provided supplementary evidence of project-related communication and AI-related issues

Two limits are significant. Initially, WhatsApp communications were utilised solely in relation to project tasks; they were not regarded as an independent interview dataset. Secondly, instances where students failed to present the researcher with AI-generated excerpts they might have utilised were regarded as a limitation and a matter of non-disclosure, rather than as proof of the substance of those unexamined passages.

4.4 Data Analysis

The data were examined thematically in accordance with the foundational principles of theme analysis outlined by Braun and Clarke (2006). The investigator initially examined project documentation, supervisory insights, pertinent communications, and reflective notes to discern consistent trends linked to AI use. Preliminary codes included subject creation, formulation of research enquiries, conceptual clarification, literature exploration, summarisation, language refinement, paraphrasing, citation generation, source validation, reliance on AI, and challenges related to locally accessible resources.

Associated codes were further categorised into overarching topics. The themes were analysed in relation to information from various students and during the three academic terms to identify consistent trends versus singular occurrences. Four primary topics were established: (1) GenAI throughout the study methodology; (2) scholarly and linguistic advantages; (3) epistemological, ethical, and dependency-related hazards; and (4) consequences for research oversight and evaluation.

4.5 Trustworthiness

Multiple methodologies enhanced the reliability of the assessment. Initially, the research utilised various types of evidence instead of depending on a single source. Secondly, the data spanned three

academic terms, enabling the identification of consistent trends rather than singular occurrences. The investigator analysed findings across several drafts, consultations, and students instead of considering isolated events as overarching trends. The investigator differentiated between observable practices and interpretations, refraining from attributing numerical frequencies to behaviours that had not been methodically quantified.

4.6 Researcher Positionality

The researcher held a dual position as both supervisor and investigator. This role facilitated continuous engagement with students' research progress and enabled the observation of temporal changes. It also established the potential for interpretive bias and power dynamics influencing students' disclosures. Consequently, reflective consideration was afforded to the differentiation between supervisory assessment and evidence, and no specific student is named in the report.

4.7 Ethical Considerations

The research utilises naturally occurring data produced during the investigator's routine oversight of undergraduate research initiatives. No identifiable information regarding students is disclosed. Student assignments and correspondence are handled with discretion, and the manuscript highlights consistent trends instead of assessing individual learners. The concluding ethics statement is consistent with the relevant institutional regulations governing the use of students' academic work for research purposes.

5. Findings

5.1 GenAI Across the Research Process

5.1.1 Topic Development and Refinement

The supervisory data indicated that students utilised GenAI throughout the initial phases of project development, especially when they were unclear about potential research subjects or how to refine a wide area of interest. AI-generated recommendations may serve as a beneficial foundation by offering different expressions and pertinent fields of investigation. Nevertheless, the recommendations frequently necessitated oversight adjustments, since a subject that appeared academically appealing did not inherently align with a viable local research issue.

This trend indicates that GenAI served mostly as a tool for generating ideas during this phase, rather than functioning as a decision-making entity. Scholars must continue to evaluate the pertinence,

breadth, accessibility of evidence, and appropriateness for their field and research framework.

5.1.2 Research Questions and Objectives

Learners moreover utilised GenAI to acquire instances of research enquiries and aims. Formulated examples occasionally assisted students in identifying the language and organization pertinent to research writing. Nonetheless, a persistent issue was the potential to generate objectives that were linguistically refined yet conceptually detached from the problem statement or study methodology. Oversight involvement was essential to ensure coherence between the issue, goals, enquiries, and methodologies.

5.1.3 Literature Review and Conceptual Explanation

GenAI was beneficial for students when they faced novel subjects or needed an initial clarification prior to consulting academic resources. Learners could acquire streamlined explanations of ideas, concepts, and terminology. The merit of this method hinged on whether students thereafter referred to primary sources and utilised the AI response as a starting point instead of a replacement for academic research.

The findings additionally indicated challenges in verifying sources. AI-generated citations may seem trustworthy yet can be erroneous or challenging to find. This issue was notably important as students occasionally thought that the presence of a title, author, and year indicated the existence of a publication. Supervisory verification consequently emerged as crucial rectification.

5.1.4 Academic Language and Revision

Enhancement of language skills was among the more justifiable uses of GenAI. Learners utilised AI applications to enhance grammar, sentence construction, lexicon, and overall scholarly articulation. In certain instances, this contributed to enhancing the clarity and formality of drafts. The discovery aligns with Ding et al. (2025), who observed enhancements in various facets of academic writing among students who received feedback using ChatGPT. Nonetheless, enhancements in language did not inherently signify an increase in research proficiency. A text that is grammatically refined may nonetheless have feeble logic, unsubstantiated assertions, or erroneous references. A supervisory evaluation is thus required to differentiate between linguistic quality and the quality of the foundational research.

5.1.5 Reference Generation and Verification

The production of references has emerged as a particularly sensitive area. Learners occasionally depended on AI technologies to propose references, which posed a danger of erroneous or fictitious citations. The issue underscored the necessity for a straightforward supervision guideline: an AI-generated citation remains merely a recommendation until the source has been identified and verified. Learners were urged to authenticate authors, titles, publication specifics, page references when applicable, and the connection between the given material and the assertion presented.

5.2 Academic and Linguistic Affordances

Four primary advantages were apparent. First, GenAI enhanced the availability of prompt support beyond designated supervisory sessions. Second, it assisted certain students in surmounting initial challenges in articulating concepts and academic terminology. Third, it offered initial elucidations of foreign notions. Fourth, it shortened the duration needed for certain standard language and drafting activities.

These advantages align largely with recent evidence published in *Education and Information Technologies* (EAIT). Kim et al. (2025) indicate that students acknowledge the utility of GenAI in academic writing, whilst Chugh et al. (2025) highlight time efficiency and problem resolution as perceived advantages of employing GenAI as a learning aid. The current research indicates that these advantages were maximised when students maintained accountability for assessing and refining the results.

5.3 Epistemic, Ethical and Dependency-related Risks

5.3.1 Fabricated or Unverifiable References

The greatest epistemic hazard was the growth of unverifiable references. This problem is important because references have an important evidential role in scholarly research. A wrong citation can ruin the integrity of an entire literature review and spoil the faith in the study document.

5.3.2 Uncritical Acceptance of Generated Information

Another familiar hazard was the acceptance of fluent explanations by AI without enough verification. Students can take confidence of expression as a measure of accuracy. Linguistic fluency and epistemic reliability were therefore disjoined. This event shows why AI literacy needs to incorporate critical questioning and checking sources.

5.3.3 Reduced Engagement with Original Sources

In instances where students depended heavily on AI-generated summaries, there was a danger that they would not engage with the actual academic texts sufficiently to comprehend the arguments, evidence, and limitations. This may erode the fundamental synthesis abilities that research initiatives aim to cultivate. The primary benefit of AI-assisted summarisation is in aiding students in selecting which sources to read, rather than serving as a substitute for reading.

5.3.4 Digital Visibility and Local Scholarship

The experience of supervision also revealed a contextual problem: not all relevant Nigerian academia is of equal visibility in the digital settings on which GenAI platforms draw. Artificial intelligence systems may have difficulty retrieving or representing print books, locally published periodicals, institutional records, government reports, and other materials. Students thus need to appreciate that availability in digital form is not a reliable indicator of intellectual worth.

5.3.5 Dependence and Substitution

The paramount risk was reliance. Certain students progressively anticipated that AI would provide terminology, explanations, or study materials pre-assembled instead of serving as an aid for enhancing their own knowledge. This is the point at which GenAI transitions from a framework to a replacement. This result aligns with concerns articulated by Nwagbara (2025) and with broader EAIT studies emphasising the importance of human oversight, ethical decision-making, and guidance (Chugh et al., 2025; Cena et al., 2026).

5.4 Implications for Research Supervision

Studies suggest that research supervision must adapt to the evolving circumstances presented by GenAI. Assessing a student's independent research only through the final project document has increasingly proven inadequate. Supervisors require documentation demonstrating the progression of the project development.

Curated proposals, detailed bibliographies, iterative drafts, source-validation tasks, concise verbal justifications of research choices, and discussions on the utilisation of AI are effective process-focused techniques. These methods do not necessitate the prohibition of AI by supervisors. Conversely, they enhance the prominence of the student's cognitive input.

6. Discussion

The results confirm that GenAI is increasingly integrated into undergraduate research and academic writing; however, they also indicate that its educational advantages are contingent. Learners employed GenAI to produce concepts, elucidate, refine language, condense information, and cite sources. These applications align with findings from previous investigations in EAIT and related higher education research (Chugh et al., 2025; Ding et al., 2025; Kim et al., 2025). The distinctive contribution of the current research is in the observation of these habits via continuous project oversight instead of relying just on students' retrospective narratives.

The primary notable effect is the distinction between accessibility and essential proficiency. The students typically had access to AI resources and were able to employ them for prompt assistance. The most difficult aspect was determining if the assistance was accurate, appropriate, and pedagogically beneficial. This distinction aligns with the New Literacies framework, which posits that in an AI-driven environment, literacy encompasses evaluation, verification, and contextual interpretation processes, rather than merely technical proficiency (Lankshear & Knobel, 2011).

The subsequent inference pertains to scaffolding. These results align with Vygotsky's (1978) perspective that learning is a process where assistance allows learners to achieve more than they might themselves. GenAI can offer assistance when students use it to elucidate concepts, investigate alternatives, or receive linguistic feedback. However, assistance becomes counterproductive when the learner ceases to engage in fundamental intellectual exertion. The study, therefore, conceptualises GenAI use as a continuum ranging from scaffolding to substitution.

Table 2: GenAI Use as a Scaffold–substitution Continuum

Use position	Typical practice	Likely educational effect
Scaffold	Brainstorming, concept clarification, language feedback	Can support learning and independent performance
Assisted performance	Outline development, preliminary summarisation, alternative formulations	Useful when students evaluate and revise outputs
Critical integration	AI suggestions checked against original scholarship	Can strengthen research judgement and information literacy
Substitution	AI produces substantial research content or argument	May weaken independent research competence

The third inference pertains to context. The academic landscape for Nigerian students lacks comprehensive digital accessibility to essential resources. This renders source assessment exceedingly important. Consequently, the results broaden the concept of AI literacy beyond traditional competencies like rapid writing. Understanding local academic frameworks and the constraints of artificial intelligence systems in their depiction should be integral to appropriate AI literacy in Nigerian higher education.

Fourth, there exists a consequence for institutional policy. Recent research in Nigeria suggests that students may not receive much official guidance about AI utilisation (Nwagbara, 2025; Yakubu et al., 2025). The present research advocates for regulations that differentiate between appropriate assistance and inappropriate alternatives instead of imposing a total ban or unrestricted access. UNESCO (2023) advocates human-centered methodologies that safeguard autonomy, fairness, cultural and linguistic diversity, and significant learning experiences.

Ultimately, the outcomes bear implications for evaluation. As artificial intelligence systems enhance their ability to produce coherent academic language, evaluations based exclusively on a final written product may provide diminished evidence of independent proficiency. Enhancing the clarity of students' reasoning can be accomplished by engaging in evidence analysis, verbal elucidation, source authentication tasks, and incremental submissions. Recent EAIT investigations concerning GenAI and evaluation indicate a necessity to reevaluate the exhibition of learning and advanced cognitive processes in AI-facilitated environments.

7. Implications for Research Supervision and Higher Education

7.1 Integrate AI literacy into Research-methods Instruction

Educational methodologies in research should encompass proficiency in artificial intelligence. Learners must understand the mechanics of generative systems, the implications of hallucinations and fabricated references, the methods for verifying assertions, the process of contrasting AI outputs with genuine sources, and the appropriate ways to acknowledge AI assistance.

7.2 Move from Product-oriented to Process-oriented Supervision

Supervisors ought to collect documentation of research progress via proposals, annotated bibliographies, historical drafts, source verification tasks, and concise oral presentations. This offers

a superior foundation for assessing independent research proficiency compared to the final product alone.

7.3 Distinguish Acceptable and Unacceptable AI Assistance

Organisations must differentiate between AI applications that enhance learning and those that replace evaluated cognitive work. Assistance with grammar, ideation, and preliminary clarification may be permissible in transparent environments, although substantial advancement of evaluated study material should necessitate disclosure and may be constrained by institutional regulations.

7.4 Protect Intellectual Ownership

Learners are responsible for the Concepts, Proof, References, and Deductions they put forth. AI assistance must not exempt the learner from the obligation to comprehend and rationalise their work.

7.5 Keep Local Scholarship Visible

Research supervision ought to be assertive in motivating students to utilise print materials, locally produced research, institutional repositories, governmental documents, and other credible sources that might be inadequately represented in AI-generated outputs. Artificial intelligence ought to enhance the research framework rather than restrict its parameters.

8. Limitations and Future Research

This research possesses specific limitations. First, it relies on the insights of a single researcher who oversaw 28 students at a College of Education. Consequently, the findings cannot be statistically extrapolated to the Nigerian higher education sector. Second, the evidence derives from naturally available supervisory resources instead of a formal questionnaire, interview, or experimental intervention. Third, the utilisation of AI was not meticulously monitored for each student and every assignment; therefore, the research failed to reveal the proportions of students participating in diverse activities.

Fourth, specific segments generated by AI were not shown to the investigator. In the absence of such evidence, the research is unable to evaluate the comprehensive scope of AI utilisation or the precise nature of concealed AI-generated content. In a comparable manner, WhatsApp messages related to project activities were employed solely as ancillary documentation proof and do not constitute a comprehensive digital communication dataset.

Subsequent research should consequently broaden the investigation to encompass many Colleges of Education and institutions across Nigeria. Collaborative research across multiple institutions may integrate supervisory observations with interviews, surveys, AI utilisation logs, and the examination of successive versions. Longitudinal studies would be crucial for evaluating if explicit instruction in AI literacy affects students' transition from reliance to more critical and autonomous utilisation.

9. Conclusion

This research examined the utilisation of GenAI in undergraduate studies by overseeing 28 students across three academic terms at Akwa Ibom State College of Education, Afaha Nsit. Experience indicates that GenAI serves as a valuable aid for ideation, subject enhancement, concept elucidation, language refinement, and various research endeavours. When utilised wisely, it can serve as a framework to assist students in overcoming current obstacles as they progress in developing their own skills.

However, technology also poses significant epistemological, ethical, and educational risks. Counterfeit citations, uncritical acceptance of produced data, less engagement with primary sources, limited visibility of regional scholarship, and dependence on published works may hinder the objectives of student research. The fundamental inquiry is not whether students utilise AI, but rather if they maintain intellectual accountability for the research they submit.

The research asserts that access to AI should be accompanied by essential AI literacy. Learners must acquire the skills to not only employ AI technology but also to interrogate, authenticate, contextualise, and ethically assess their results. This signifies that supervisors should place greater importance on the research methodology. For institutions, this necessitates the implementation of clear, context-sensitive regulations that facilitate constructive assistance while preserving intellectual property and promoting autonomous learning. From this perspective, the optimal response to GenAI is not a total prohibition or an unrestricted acceptance, but rather a strategic and transparent incorporation where technology enhances rather than supplants human research capabilities.

References

Anani, G. E., Nyamekye, E., & Bafour-Koduah, D. (2025). Using artificial intelligence for academic writing in higher education: The perspectives of university students in Ghana. *Discover Education, 4, Article 46*. <https://doi.org/10.1007/s44217-025-00434-5>

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Cena, E., McParland, A., Toivo, W., et al. (2026). Studying with GenAI: Student views on the opportunities and risks of GenAI in higher education. *Education and Information Technologies*, 31, 3655–3681. <https://doi.org/10.1007/s10639-026-13923-3>
- Chugh, R., Turnbull, D., Kutty, S., Sabrina, F., et al. (2025). Generative AI as a learning assistant in ICT education: Student perspectives and educational implications. *Education and Information Technologies*, 30, 23693–23728. <https://doi.org/10.1007/s10639-025-13686-3>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Ding, L., Zou, D., & Kohnke, L. (2025). ChatGPT as an automated writing evaluation tool: How students perceive it and how it affects their writing. *Education and Information Technologies*, 30, 26777–26799. <https://doi.org/10.1007/s10639-025-13775-3>
- Kim, J., Yu, S., Detrick, R., et al. (2025). Exploring students' perspectives on Generative AI-assisted academic writing. *Education and Information Technologies*, 30, 1265–1300. <https://doi.org/10.1007/s10639-024-12878-7>
- s
- Lankshear, C., & Knobel, M. (2011). *New literacies: Everyday practices and social learning* (3rd ed.). Open University Press.
- Nwagbara, U. U. (2025). From curiosity to dependency: Nigerian students' perspectives on AI integration in academic research. *Journal of Academic Ethics*, 23(4), 2051–2068. <https://doi.org/10.1007/s10805-025-09641-z>
- UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO. <https://doi.org/10.54675/EWZM9535>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Yakubu, M. N., David, N., & Abubakar, N. H. (2025). Students' behavioural intention to use content generative AI for learning and research: A UTAUT theoretical perspective. *Education and Information Technologies*, 30, 17969–17994. <https://doi.org/10.1007/s10639-025-13441-8>
- [1]