

**PROMPT LITERACY AND THE DEVELOPMENT OF ACADEMIC WRITING
COMPETENCE AMONG NIGERIAN ENGLISH LANGUAGE STUDENTS: A STUDY OF
NASARAWA STATE UNIVERSITY, KEFFI**

BY

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Abstract

This study examined the level of prompt literacy possessed by English language students of Nasarawa State University, Keffi, and the extent to which prompt literacy contributes to their academic writing competence, using a descriptive survey research design. The population comprised undergraduate students of the Department of English and Literary Studies, Nasarawa State University, Keffi, from which a sample of 200 students was drawn using proportionate stratified random sampling across the 100 to 400 levels. Data were collected using a structured, four-point Likert questionnaire administered through Google Forms. Validity was established through expert review, while reliability was established through Cronbach Alpha coefficient computation following a pilot test ($\alpha = 0.78$). Data were analysed using mean and standard deviation, guided by a decision rule in which mean scores of 2.50 and above indicate agreement. Findings revealed a high level of prompt literacy among the sampled students (cluster mean = 3.00, SD = 0.93) and indicated that students perceived prompt literacy as making a substantial contribution to their academic writing competence (cluster mean = 3.05, SD = 0.92). Students were most confident in constructing clear prompts and least confident in sequencing multiple prompts to progressively develop a piece of writing, while they perceived the strongest AI-assisted gains in idea generation and the least pronounced gains in overcoming writer's block. The study concludes that AI tools should support, rather than replace, the fundamental cognitive processes involved in academic writing, and recommends targeted instruction in advanced, multi-step prompting strategies within English language education.

Keywords

Prompt Literacy, Academic Writing Competence, Generative Artificial Intelligence, English Language Education, Nasarawa State University Keffi

Introduction

The emergence of generative Artificial Intelligence (AI) tools such as ChatGPT has introduced a new dimension to how students interact with written language, shifting part of the writing process from the direct production of text to the formulation of instructions, or prompts, that guide an AI system toward producing text on the writer's behalf. This shift has given rise to the concept of prompt literacy, broadly understood as the ability to design, refine, and critically evaluate prompts in order to obtain relevant, accurate, and academically appropriate output from generative AI systems (Knoth, Tolzin, Janson, & Leimeister, 2024). Globally, prompt literacy is increasingly recognised as a distinct and consequential literacy practice, since the quality of an AI generated response depends substantially on how clearly and strategically a prompt has been constructed (Tour, 2025).

Within higher education specifically, prompt literacy has attracted growing scholarly attention because of its implications for academic writing instruction. Researchers have found that students with stronger AI literacy tend to produce more descriptive, context rich prompts and engage with generative AI tools in a more collaborative manner, whereas students with weaker AI literacy tend to rely on brief, general prompts that yield less useful output (Kim, Yu, Lee, & Detrick, 2025). Prompt literacy has been described as a potential critical enabler of academic writing, capable of supporting students with idea generation, outlining, proofreading, and overcoming writer's block, provided that students possess the underlying skill to prompt effectively and to evaluate the resulting output critically (Plaatjies & van Wyk, 2025).

In the Nigerian context, generative AI tools have become increasingly visible in university academic writing practices. Nigerian undergraduates have been found to use ChatGPT and similar tools to enhance creative and academic writing, with documented improvements in specific writing components, although researchers have consistently cautioned that such benefits depend on guided, informed use rather than unstructured or uncritical reliance on AI output (Salihu, Aliyu, & Nurchalis, 2024). Other Nigerian studies have similarly found that while students recognise the potential of generative AI tools to support academic writing, concerns persist regarding over dependence, uneven digital and AI literacy, and limited institutional guidance on appropriate use (Ya'u, 2025). These findings suggest that the manner in which Nigerian university students engage with AI tools, rather than the mere availability of the tools themselves, may be the more decisive factor in determining whether AI use translates into genuine gains in academic writing competence.

Nasarawa State University, Keffi, as a teaching and research institution with an active Department of English and Literary Studies, provides an appropriate context in which to examine this emerging phenomenon among English language students, who are simultaneously being trained in the conventions of academic writing and increasingly exposed to generative AI tools in the course of their studies. It is against this background that the present study investigates the level of prompt literacy possessed by English language students of Nasarawa State University, Keffi, and the extent to which this prompt literacy contributes to the development of their academic writing competence.

Statement of the Problem

Generative AI tools are increasingly present in the academic lives of Nigerian university students, including those studying English language and literature, yet these tools are frequently adopted without formal instruction in how to use them effectively for academic purposes. Anecdotal reports and emerging Nigerian research suggest that students' engagement with AI tools ranges from thoughtful, iterative prompting that supports genuine writing development to uncritical, single shot prompting that risks producing generic or inappropriate output later submitted with minimal revision (Salihu, Aliyu, & Nurchalis, 2024; Ya'u, 2025). This variation raises a pressing question for English language educators: do students possess the prompt literacy skills necessary to derive genuine academic writing benefit from generative AI tools, and is there a meaningful relationship between students' prompt literacy and the academic writing competence they demonstrate? Without empirical evidence on these questions, curriculum planners and lecturers at institutions such as Nasarawa State University, Keffi, are poorly positioned to determine whether, and how, prompt literacy instruction should be incorporated into English language teaching. It is this practical and pedagogical uncertainty that the present study seeks to investigate.

Objectives of the Study

The study sought to:

1. determine the level of prompt literacy possessed by English language students of Nasarawa State University, Keffi.
2. examine the extent to which prompt literacy contributes to the development of academic writing competence among English language students of Nasarawa State University, Keffi.

Research Questions

1. What is the level of prompt literacy possessed by English language students of Nasarawa State University, Keffi?
2. To what extent does prompt literacy contribute to the development of academic writing competence among English language students of Nasarawa State University, Keffi?

Conceptual Clarification

Prompt literacy, for the purposes of this study, is conceptualised as the composite ability to formulate clear and purposeful instructions for a generative AI system, to iteratively refine those instructions in response to unsatisfactory output, and to critically evaluate the accuracy, relevance, and appropriateness of the resulting text before incorporating it into one's own academic writing. Academic writing competence is conceptualised as the demonstrated ability to generate ideas, organise argument and structure, apply appropriate grammar and mechanics, and produce coherent, purposeful written text that conforms to the conventions of academic discourse. The relationship between the two constructs lies in the possibility that a student's skill in prompting a generative AI tool may mediate the extent to which that student is able to derive genuine academic writing benefit, as opposed to superficial textual output, from AI assisted writing.

Review of Related Empirical Studies

Several recent studies provide an empirical basis for the present investigation. Kim, Yu, Detrick, and Li (2025) explored university students' perspectives on generative AI assisted academic writing and found that students who had developed more deliberate prompting strategies reported greater satisfaction with AI generated feedback and were more able to integrate AI suggestions meaningfully into their writing process, while students with less developed prompting strategies tended to accept AI output uncritically. The study, based on qualitative and survey data from university students, underscores the centrality of prompting skill, rather than mere access to AI tools, in determining writing outcomes, and directly informs the present study's focus on measuring prompt literacy as a distinct variable.

Knoth, Tolzin, Janson, and Leimeister (2024) examined the relationship between AI literacy and prompt engineering strategies among higher education students, reporting that students with higher AI literacy employed more sophisticated, iterative prompting strategies, while students with lower AI literacy tended to use single shot, poorly specified prompts. Their findings, drawn from a structured study of

higher education students' interactions with generative AI tools, support the conceptual distinction adopted in the present study between general AI literacy and the more specific construct of prompt literacy as it applies to academic writing tasks. Plaatjies and van Wyk (2025), in a systematic literature review of prompt literacy and academic writing in higher education, synthesised evidence suggesting that prompt literacy can support proofreading, outlining, grammar correction, content organisation, and idea generation, while cautioning that the reviewed literature remains concentrated in well resourced, non-African higher education contexts, leaving open the question of how these dynamics manifest in resource constrained settings such as Nigerian universities.

Within the Nigerian context specifically, Salihu, Aliyu, and Nurchalis (2024) investigated the impact of ChatGPT and Google Bard on the creative writing skills of undergraduates at a university in northeastern Nigeria using a pretest posttest quasi-experimental design involving eighty third year students, and found statistically significant improvements in overall writing scores, alongside specific gains in imagery, voice, and characterisation, following guided AI tool use. While methodologically rigorous, this study measured writing outcomes following an experimental intervention rather than students' baseline prompt literacy, leaving unexamined the question of how naturally occurring variation in students' prompting skill relates to their writing competence. Similarly, Ya'u (2025) investigated the dual impact of language models on writing proficiency and ethical concerns in Nigerian higher education, reporting that while AI tools were perceived to enhance certain aspects of academic writing, students' uneven understanding of how to interact effectively with these tools, alongside unresolved ethical concerns, limited the consistency of the reported benefits.

Taken together, the reviewed studies establish that prompt literacy is an emerging and consequential construct in AI assisted academic writing, and that Nigerian undergraduates are actively engaging with generative AI tools in their writing practices, often with encouraging but uneven results. What remains absent from the literature, however, is a study that directly measures the level of prompt literacy possessed by Nigerian English language students and examines its relationship with their academic writing competence within a specific Nigerian university context. It is this gap that the present study, situated at Nasarawa State University, Keffi, seeks to address.

Theoretical Framework

Sociocultural Theory and the Zone of Proximal Development

Vygotsky's (1978) sociocultural theory, and specifically the concept of the Zone of Proximal Development (ZPD), offers a useful lens through which to understand prompt literacy in academic writing. Vygotsky argued that learning is most effective when a learner engages in a task with the guided support of a more knowledgeable other, gradually internalising skills that were initially performed with assistance. In the context of AI assisted academic writing, the generative AI tool may function as a form of more knowledgeable other, offering scaffolding in the form of suggestions, structural feedback, or model text in response to a student's prompt. However, the extent to which this scaffolding is productive depends on the student's prompt literacy: a student who can formulate precise, well targeted prompts is better positioned to extract scaffolding appropriate to their zone of proximal development, whereas a student with weak prompt literacy risks either receiving output far beyond their current ability to critically evaluate, or output too generic to support genuine skill development.

Multiliteracies and New Literacies Perspective

The multiliteracies framework advanced by Cope and Kalantzis (2009) contends that literacy in contemporary society extends beyond the traditional ability to read and write printed text to encompass a widening range of representational and communicative practices shaped by new technologies. Prompt literacy fits naturally within this expanded conception of literacy, since it involves a distinct set of textual practices, namely the strategic use of natural language to instruct, negotiate with, and evaluate output from an AI system, that did not form part of conventional academic writing instruction. Understood through this lens, prompt literacy is not merely a technical skill but a literacy practice in its own right, one that interacts with, and potentially reshapes, students' existing academic writing competence. This study draws on both theoretical perspectives, using Vygotsky's sociocultural theory to explain the scaffolding function that AI tools may play in students' writing development, and the multiliteracies perspective to situate prompt literacy as a legitimate and consequential literacy practice worthy of empirical investigation among English language students.

Methodology

Research Design

This study adopts a descriptive survey research design, which is appropriate for eliciting and statistically summarising the self-reported perceptions and experiences of a defined population using a structured instrument administered at a single point in time.

Population of the Study

The population of the study comprised all undergraduate students of the Department of English and Literary Studies, Nasarawa State University, Keffi, numbering 1,008.

Sample and Sampling Technique

A sample of 200 students was drawn from the population using a proportionate stratified random sampling technique, with strata defined by level of study (100 to 400 level), so as to ensure that students at every stage of the undergraduate English programme were proportionately represented in the sample.

Research Instrument

Data were collected using a self-structured questionnaire titled the Prompt Literacy and Academic Writing Competence Questionnaire (PLAWCQ), developed by the researcher from constructs identified in the reviewed literature and administered through Google Forms. The instrument was rated on a four-point Likert scale of Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. The instrument comprised two sections corresponding to the two research questions.

Section A: Level of Prompt Literacy. This section contains items measuring students' ability to construct clear prompts, refine prompts iteratively, understand the capabilities and limitations of AI writing tools, apply specific prompting techniques, critically evaluate AI-generated output, and observe ethical considerations in AI-assisted writing.

Section B: Contribution of Prompt Literacy to Academic Writing Competence. This section contains items measuring students' perceptions of how prompt-based interaction with AI tools has influenced idea generation, organisation and structure, grammatical accuracy, argument development, reduction of writer's block, clarity, and understanding of academic writing conventions.

Validity of the Instrument

The face and content validity of the instrument were established through review by experts in English Education and Applied Linguistics, who assessed the items for clarity, relevance, and adequacy of coverage of the prompt literacy and academic writing competence constructs under investigation. Their observations informed the revision of the instrument prior to its administration.

Reliability of the Instrument

The reliability of the instrument was established through a pilot test administered to a small group of students who shared similar characteristics with, but were not part of, the main sample. Responses obtained from the pilot test were subjected to Cronbach Alpha reliability analysis ($\alpha = 0.78$), indicating good internal consistency of the instrument.

Method of Data Collection

The questionnaire was administered electronically through Google Forms, with a link distributed to sampled students through departmental communication channels and class representatives. Students were informed of the purpose of the study and assured of the confidentiality and anonymity of their responses prior to completing the questionnaire.

Method of Data Analysis

Data collected were analysed using mean and standard deviation, in line with the perception-based nature of the research questions. For each questionnaire item, the mean score was computed by weighting the frequency of responses in each Likert category by its corresponding value and dividing by the total number of respondents. The following decision rule, based on the four-point Likert scale, guided the interpretation of mean scores:

- 3.50–4.00: Strongly Agree
- 2.50–3.49: Agree
- 1.50–2.49: Disagree
- 0.50–1.49: Strongly Disagree

Item mean scores of 2.50 and above were interpreted as indicating agreement, while mean scores below 2.50 were interpreted as indicating disagreement. This decision rule was applied consistently to both research questions.

Data Presentation and Results

The results of the survey of 200 undergraduate English language students of Nasarawa State University, Keffi, are presented in this section. Research Question 1 addresses the level of prompt literacy possessed by the students, while Research Question 2 addresses the extent to which prompt literacy contributes to the development of their academic writing competence.

Research Question 1: What is the level of prompt literacy possessed by English language students of Nasarawa State University, Keffi?

Table 1: Level of Prompt Literacy among English Language Students of Nasarawa State University, Keffi (N = 200)

S/N	Questionnaire Item	Mean	SD	Decision
1	I can write clear and specific instructions (prompts) that communicate exactly what I want an AI writing tool to do.	3.08	0.93	Agree
2	I am able to revise and refine a prompt when the first response from an AI tool does not meet my writing needs.	3.04	0.93	Agree
3	I understand the basic capabilities and limitations of AI writing tools such as ChatGPT when used for academic writing.	3.00	0.92	Agree
4	I can apply specific prompting techniques, such as specifying audience, purpose, or format, to guide an AI tool toward an academically appropriate response.	2.99	0.92	Agree
5	I am able to critically evaluate the accuracy, relevance, and appropriateness of AI-generated text before using it in my academic work.	3.02	0.93	Agree
6	I can combine multiple prompts in sequence to progressively develop an idea, argument, or piece of academic writing.	2.88	0.96	Agree

S/N	Questionnaire Item	Mean	SD	Decision
7	I am confident in my ability to use prompts to request feedback on the organisation and structure of my academic writing.	2.93	0.95	Agree
8	I am aware of the ethical considerations involved in using AI-generated prompts and responses in academic writing.	3.06	0.93	Agree
	Cluster Mean	3.00	0.93	Agree

Note. N = 200. Decision rule: 3.50–4.00 = Strongly Agree; 2.50–3.49 = Agree; 1.50–2.49 = Disagree; 1.00–1.49 = Strongly Disagree.

Table 1 shows that all eight items relating to prompt literacy recorded mean scores above the criterion mean of 2.50, and the cluster mean of 3.00 falls within the Agree band of interpretation. This indicates that English language students of Nasarawa State University, Keffi generally possess a high level of prompt literacy. The item recording the highest mean score, at 3.08, concerned students' ability to write clear and specific prompts that communicate exactly what they want an AI tool to do, indicating that constructing well specified prompts is the sub-skill in which students feel most competent. The item recording the lowest mean score, at 2.88, though still within the Agree band, concerned students' ability to combine multiple prompts in sequence to progressively develop an idea, argument, or piece of writing, suggesting that this more advanced, iterative form of prompting represents a comparative weakness relative to the other prompt literacy sub-skills measured. In answer to Research Question 1, it can therefore be concluded that English language students of Nasarawa State University, Keffi possess a high level of prompt literacy, with single-prompt construction more fully developed than sustained, multi-turn prompting.

Research Question 2: To what extent does prompt literacy contribute to the development of academic writing competence among English language students of Nasarawa State University, Keffi?

Table 2: Perceived Contribution of Prompt Literacy to the Development of Academic Writing Competence (N = 200)

S/N	Questionnaire Item	Mean	SD	Decision
1	Interacting with AI tools through prompts has helped me generate ideas more easily when starting an academic writing task.	3.11	0.92	Agree
2	The use of AI-assisted prompting has improved the organisation and structure of my academic essays.	3.06	0.91	Agree
3	Prompting AI tools has helped me identify and correct grammatical errors in my academic writing.	3.08	0.92	Agree
4	AI-assisted prompting has improved my ability to develop coherent arguments in my academic essays.	3.04	0.92	Agree
5	The use of AI tools through effective prompting has reduced the amount of time I spend overcoming writer's block.	2.99	0.94	Agree
6	My use of AI prompting has improved the overall clarity of my academic writing.	3.07	0.91	Agree
7	Engaging with AI tools through prompts has strengthened my understanding of academic writing conventions.	3.00	0.92	Agree
8	I am able to distinguish between ideas I generated independently and those generated with AI assistance in my academic writing.	3.05	0.92	Agree
	Cluster Mean	3.05	0.92	Agree

Note. $N = 200$. Decision rule: 3.50–4.00 = Strongly Agree; 2.50–3.49 = Agree; 1.50–2.49 = Disagree; 1.00–1.49 = Strongly Disagree.

Table 2 shows that all eight items relating to the perceived contribution of prompt literacy to academic writing competence also recorded mean scores above the criterion mean of 2.50, yielding a cluster mean

of 3.05, which falls within the Agree band. This indicates that English language students of Nasarawa State University, Keffi perceive prompt literacy as making a substantial contribution to the development of their academic writing competence. The item recording the highest mean score, at 3.11, concerned the extent to which prompt-based interaction with AI tools has helped students generate ideas more easily when starting an academic writing task, suggesting that idea generation is the writing sub-skill students most strongly associate with the benefits of prompt literacy. The item recording the lowest mean score, at 2.99, though still within the Agree band, concerned the extent to which effective prompting has reduced the time students spend overcoming writer's block, indicating that this benefit, while present, is comparatively less pronounced than the benefits perceived for idea generation, clarity, and grammatical accuracy. In answer to Research Question 2, it can therefore be concluded that prompt literacy makes a substantial contribution to the academic writing competence of English language students of Nasarawa State University, Keffi, most strongly in respect of idea generation and least strongly in respect of overcoming writer's block.

Discussion of Findings

The finding that English language students of Nasarawa State University, Keffi recorded a cluster mean of 3.00 on the prompt literacy scale, placing them within the Agree band, indicates that these students generally consider themselves competent in constructing, refining, and critically evaluating prompts for generative AI tools. This finding is broadly consistent with Knoth, Tolzin, Janson, and Leimeister (2024), who found that students with higher AI literacy employed more deliberate and sophisticated prompting strategies, and with Kim, Yu, Detrick, and Li (2025), who reported that students who had developed more deliberate prompting strategies expressed greater confidence in their interactions with generative AI tools for academic purposes. The comparatively lower mean recorded for combining multiple prompts in sequence, at 2.88, suggests that even among students who report an overall high level of prompt literacy, competence in constructing single, well specified prompts appears more fully developed than competence in orchestrating a sustained, multi-turn dialogue with an AI tool to progressively develop a piece of writing. This pattern is consistent with Ya'u (2025), who observed that Nigerian students' understanding of how to interact effectively with AI tools remains uneven, and it may reflect the largely informal, self-taught manner in which many Nigerian undergraduates are reported to have acquired their AI tool use skills, in the absence of formal instruction.

The finding that students perceived prompt literacy as making a substantial contribution to their academic writing competence, with a cluster mean of 3.05, lends support to Salihu, Aliyu, and

Nurchalis (2024), who reported statistically significant improvements in the writing scores of Nigerian undergraduates following guided use of ChatGPT and Google Bard, and is consistent with the position advanced by Plaatjies and van Wyk (2025) that prompt literacy functions as a critical enabler of academic writing by supporting idea generation, structuring, and grammar correction. The particularly high mean recorded for idea generation, at 3.11, mirrors the emphasis placed on this benefit in the reviewed literature, while the comparatively lower, though still positive, mean recorded for overcoming writer's block, at 2.99, resonates with Ya'u's (2025) caution that the benefits of AI assisted writing among Nigerian students are often uneven, with some aspects of the writing process benefiting more consistently from AI interaction than others.

Taken together, the findings for Research Questions 1 and 2 reveal a consistent pattern, in that students who reported a high level of prompt literacy also reported that prompt-based AI interaction made a substantial contribution to their academic writing competence, and that the same sub-skill, namely sustained, multi-step prompting, was associated with comparatively weaker scores in both the prompt literacy scale and the writer's-block item of the academic writing competence scale. This pattern lends preliminary support to the theoretical expectation, drawn from Vygotsky's (1978) sociocultural theory, that AI tools function most productively as scaffolding when learners possess sufficient prompt literacy to elicit and make use of that scaffolding. As the present study relied on descriptive statistics rather than an inferential test of association between the two variables, this observed pattern should be interpreted as suggestive rather than conclusive, and future research employing correlational or regression analysis is recommended to establish the strength and significance of the relationship between prompt literacy and academic writing competence.

Conclusion

This study set out to investigate the level of prompt literacy possessed by English language students of Nasarawa State University, Keffi, and the extent to which prompt literacy contributes to the development of their academic writing competence. Students were most confident in their ability to construct clear, well specified prompts and least confident in their ability to sequence multiple prompts to progressively develop a piece of writing, while they perceived the clearest AI-assisted gains in idea generation and the least pronounced gains in overcoming writer's block. These findings affirm, in line with the sociocultural and multiliteracies perspectives underpinning this study, that generative AI tools can function as a productive scaffold for academic writing among students who possess adequate prompt literacy, while also indicating that certain more advanced prompting sub-skills, particularly

sustained, multi-step prompting, may still require deliberate instructional attention. The study concludes that Artificial Intelligence should be positioned as a tool that supports, rather than replaces, the fundamental cognitive and linguistic processes involved in academic writing, and that its educational value for Nigerian English language students, such as those at Nasarawa State University, Keffi, is contingent on the extent to which students are equipped with the prompt literacy skills required to use it productively.

Recommendations

Based on the findings of this study, the following recommendations are made:

- The Federal and State Ministries of Education, alongside relevant regulatory bodies, should develop clear policy guidance on the appropriate use of generative AI tools in Nigerian tertiary institutions, including guidance specific to language and writing instruction.
- University administrators at Nasarawa State University, Keffi, should incorporate structured prompt literacy training into orientation and general studies programmes, with particular emphasis on advanced, multi-step prompting strategies, since this was the sub-skill on which students scored lowest.
- English Language Education experts and curriculum planners should embed instruction on sustained, multi-turn prompting techniques within existing academic writing courses, given that students' comparative weakness in this area was reflected in both the prompt literacy and academic writing competence results.
- Lecturers in the Department of English and Literary Studies should model effective sequential prompting in class and demonstrate how iterative prompt refinement can be used specifically to overcome writer's block, since this was the area in which students perceived the least benefit from AI-assisted writing.
- Students should build on their already well developed ability to construct clear, single prompts by deliberately practising extended, multi-step prompting sequences for longer academic writing tasks, while continuing to critically evaluate all AI-generated content before incorporating it into their work.

- Parents and guardians of students should be sensitised to the growing role of AI tools in academic work, so as to support responsible use of these tools at home and encourage open discussion of their appropriate limits.
- Subsequent researchers should replicate this study across other Nigerian universities and employ inferential statistical techniques, such as correlation or regression analysis, to formally test the strength of the relationship between prompt literacy and academic writing competence suggested by the present findings.

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