EFFECT OF DIGITAL LITERACY APPROACH ON STUDENTS' ACADEMIC PERFORMANCE IN ENGLISH LANGUAGE READING SKILLS IN MAIDUGURI, BORNO STATE

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Abstract
The study examined the effect of a digital literacy approach on students' vocabulary, fluency and reading comprehension skills. A quasi-experimental design was employed. The population comprised two thousand four hundred and thirty-one (2431) students in two selected secondary schools in Maiduguri. The sampling technique used for the study was simple random sampling, selecting one hundred and sixty (160) SSIII students from two intact classes. The self-developed instrument was pilot-tested, which resulted in a 0.88 reliability index using Cronbach's alpha. The findings of the study revealed that the digital literacy approach significantly improved students' academic performance in teaching reading skills in the English language. The study concluded that the digital literacy approach has a positive impact on enhancing reading skills and their components. The study recommended that language teachers need to implement the use of digital learning interaction using the target language to improve vocabulary, fluency and reading comprehension for effective communication.

Keywords: *Digital Literacy Approach, Reading Skills, Students' Academic Performance, English Language*

Introduction
Digital literacy is the ability to understand and use information from multiple digital platforms. The term was first introduced to describe a technical orientation which emphases the functional computer skills such as word processing, internet browsing, and electronic communication. It has

undergone considerable evolution since the Paul Gilster's book of publication on digital literacy skills in 1997. Over time, however, scholars have progressively broadened the concept to encompass critical, social, educational and creative dimensions of technology use.

According to Eshet-Alkalai (2024), a multidimensional framework in digital literacy comprises the following digital aspects, which include, reproduction literacy, photo-visual literacy, information literacy, branching literacy and socio-emotional literacy as distinct but interrelated components of digital competence. Similarly, the European Commission's Dig Comp framework identifies five competency areas; these include, digital content creation, problem-solving, information and data literacy, constitutive digital literacy and functional digital literacy. Furthermore, UNESCO (2018) emphasizes that digital literacy must be understood not merely as a technical skill set but as a social practice embedded in specific cultural, economic, institutional and educational contexts.

For this study, teaching and interaction in digital literacy is conceptualized within the framework of functional literacy, which uses digital tools to teach English language reading skills. Widana (2020) argued that functional literacy education must be understood within the teachers' and learners lived realities and interaction. Digital literacy education encompasses the functional competencies required for teachers and learners to use available digital tools productively in their daily lives within or outside schools for community and social engagement, without presupposing access to the full field of digital infrastructure available in more privileged contexts. (Chen and Davis, 2023).

Similarly, in the twenty-first century, digital education has emerged as an essential dimension in teaching and learning activities. Digital literacy education is a critical prerequisite for meaningful acquisition of knowledge through digital technologies across the globe. Digital technologies are no longer a luxury confined to the technologically privileged, but rather a fundamental approach that supports teaching and learning activities (UNESCO, 2020)

The digital literacy approach involves using digital technologies and online resources to help learners develop traditional literacy skills while also

teaching them how to find, evaluate, create, communicate, and share information using digital tools, especially in teaching reading skills using the following activities: reading e-books, online interaction, digital stories and using learning websites and platforms. (Ellis and Foster, 2022).

The main principles of the digital literacy approach, as reported by Ikenna (2022) are digital communication and collaboration, where learners should interact and communicate through various digital platforms. Learners use multimodal learning; learning using different modes method which is useful for communication. For instance, text, audio, images and others. The approach is a learner-centred, active participation method; the digital literacy approach encourages learners to effectively explore their potential through interaction and collaboration with peers rather than simply listening to the information given.

The teachers could, for example, teach English reading comprehension by giving students digital stories. Students would search for related stories, read the digital text by identifying unfamiliar vocabulary, search the meaning using digital dictionaries and discuss the findings using their digital platform.

Digital literacy can also support vocabulary development and reading comprehension. Hakim. (2023) suggest that with help of digital literacy approach, students can identify new English words in meaningful contexts and use appropriate digital dictionaries or other teacher-approved resources to learn their meanings, pronunciation, spelling, and other usage. Teachers can create vocabulary exercises in which students use newly learned words in sentences and complete the task given alone. The students' regular exposure to vocabulary through digital texts can gradually improve students' ability to understand English passages and express themselves in both oral and written forms of communications.

Another useful component of this strategy is to integrate audio and visual resources with reading instruction. A teacher may provide a digital passage together with an audio recording of the passage. Students first listen to the passage and then read it while following the written text. This can help them connect pronunciation with written words and develop both listening

and reading abilities. Similarly, the approach helps learners to use short educational videos that can introduce the subject of a reading passage before students read it. Such activities can mostly be useful for learners who have difficulties in understanding unfamiliar vocabulary or concepts. (Zhan and Zhang 2024).

The last aspect of this approach is the use of digital literacy approach for collaboration among the learners. The approach enables students to work in small groups to read a digital text, identify its main concepts, discuss unfamiliar vocabulary, answer comprehension questions, and present their conclusions to the entire class after working in the group. Rubab and Saleem (2026). Where internet access is limited, teachers can use offline digital resources, locally stored e-books, recorded lessons using PDF materials, or educational content that does not require continuous internet access. This is important because successful digital literacy programmes in Maiduguri should be adapted to the actual technological and infrastructural conditions of individual schools.

Reading skills are one of the foundational skills required for learners to acquire. It involves the process of comprehending and recognising words, leading to the development of vocabulary skills. Goodluck, (2025) reports that reading is a process of interaction and recognition of meaning between the text and its reader. Whereas reading skills refer to the individual processes that relate a reader's capacity to read, decode, comprehend and interpret language symbols and texts. Reading is the process of understanding a series of written symbols and letters which convey the intended meanings. Goodluck (2025). Reading is an active intellectual process that involves decoding and constructing to arrive at the meanings of the text, which helps the reader to focus on the goal towards information understanding. Reading is one of fundamental skill in language learning, which helps in understand the text and its meaning during this processing of information, readers use intent knowledge to understand, organize ideas, and use textual clues to find the meanings of new words.

Integrating digital tools in teaching reading helps the learners especially in learning all the component of the reading skills, these include vocabulary, fluency, grammar and comprehension reading skills is one of the vital skills in any language skills; specifically, reading in the English language is

necessary for personal development, academic progress and improving students' academic performance. It serves as a foundational skill for acquiring knowledge in all subject areas and enhances students' communicative competence in both academic and social life. Furthermore, reading also involves interpreting, comprehending, and constructing meaning from written texts through interaction between the reader and the text. In the framework of English language learning, reading is not only a receptive skill but also a tool for improving vocabulary, grammar and comprehension that improve language proficiency. Students who develop strong reading skills are more likely to excel in other subjects because reading supports learning across all fields of learning. In addition, digital literacy is an important component of learning using digital tools. The inclusion of digital skills alongside the foundational skills of language and reading improves critical thinking for secondary school students in today's digital age. The utilization of digital literacy education in learning language skills, especially reading comprehension, vocabulary development and fluency, cannot be overemphasized. The researchers were English teachers for over a decade and later, as supervisors of teaching practice exercises, observed that students who are exposed to digital learning platforms are better than those who are not exposed in reading ability. Despite the potential benefits of digital platforms in education, students' poor academic performance is alarming, particularly in reading skills. There are many interconnected factors and challenges attributed to the poor performance these challenges may include inadequate exposure to the English language outside the classroom, limited reading culture among students, insufficient access to appropriate reading materials, large classes, inadequate teaching and learning resources, and differences between students' home languages and English. Where students predominantly use indigenous languages in their homes and communities, they may have limited opportunities to practice English in developing their vocabulary, reading comprehension, and fluency skills among others.

Apart from the above listed problems, there a major problem that cause the poor performance is the conventional approach in teaching language skills particularly, reading skills. Many English language teachers still apply a conventional method of teaching reading skills focusing heavily on reading and memorizing text explaining difficult words, although these activities

have some value, there are insufficient enough for the learners to interact actively with different types of texts and to communicate effectively with digital stories, electronic books, and other contemporary resources as well as internet connectivity are required in teaching reading skills.

The digital literacy approach to literacy instruction can provide some possible ways of addressing these challenges. Teachers can appropriately select digital materials such as e-books, digital stories, educational websites, electronic newspapers, reading applications, recorded passages, and interactive comprehension exercises. Students can read texts on available smartphones, tablets, computers, or school digital facilities and use digital dictionaries to check unfamiliar words. For example, after reading a digital passage, students can identify the main idea, find supporting details to answer the comprehension questions, learn new vocabulary, and write a summary and conclude the task. This makes reading more active and gives learners opportunities to practice comprehension rather than simply memorizing the answers. Therefore, this study examined the effect of digital literacy on students' academic performance in reading skills of the English language in Maiduguri, Borno State Nigeria.

Hypotheses

The following null hypotheses were formulated.

Ho1. There is no significant effect of the digital literacy approach on students' academic performance in comprehension skills

Ho2. There is no significant effect of the digital literacy approach on students' academic performance in vocabulary development

Ho3. There is no significant effect of the digital literacy approach on students' academic performance in fluency skills

Method

The study examined the effect of the digital literacy approach on students' academic performance in reading skills of the English language in Maiduguri, Borno State. A quasi-experimental design was employed to examine the effect of the digital literacy approach on students' academic

performance in reading skills of English. The targeted population of the study comprises two thousand four hundred and thirty-one (2431) students in two selected secondary schools in Maiduguri. The sampling technique used for the study was simple random sampling, randomly selecting one hundred and sixty (160) (SSIII) students from two intact classes. The class was divided into two groups. Group A, the experimental group, consisted of eighty (80) students, while Group B, the control group, consisted of eighty (80) students. The instrument used for the study was a self-developed instrument to determine the level of students' performance in reading competencies. The instrument was pilot-tested, which resulted in a 0.88 reliability index using Cronbach's alpha.

Results

Table 1: Independent samples t-test for mean score of students in comprehension skills between students taught using the digital literacy Approachand those taught with a conventional approach

Variable	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
Experimental	80	11.15	3.490					
				13.22	158	.000	3.971	5.379
Control	80	6.48	2.506					

An independent-samples t-test was conducted to compare the mean score of students in comprehension skills between those taught using the digital literacy approach and those taught using the conventional approach. The experimental group, which consisted of 80 students, was taught using the digital literacy approach, while the control group was taught using the conventional approach. The results indicate a significant difference between experimental group (M= 11.15, SD= 3.49) and the control group (M= 6.48, SD= 2.506), [$t(158) = 13.22$, $p = .000 < .05$]. The 95% confidence interval of the difference between means ranged from [3.971 to 5.379] and indicated a difference between the means of the sample.

Consequently, the null hypothesis was rejected while the alternative hypothesis was upheld. This implies that there is a significant effect of the digital literacy approach on students' academic performance in teaching comprehension skills.

Table 2: Independent samples t-test for mean score of students in vocabulary development between students taught using the digital literacy approachand those taught with the conventional approach

Variable	N	Mean	Std. Deviation	T	Df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
Experimental	80	3.76	1.150					
				10.57	158	.000	1.563	2.287
Control	80	1.84	.947					

An independent-samples t-test was conducted to compare the mean score of students in vocabulary development between those taught using the digital literacy approach and those taught using the conventional approach. The experimental group, which consisted of 80 students, was taught using the digital literacy approach, while the control group was taught using the conventional approach. The results indicate a significant difference between experimental group (M= 3.76, SD= 1.150) and the control group (M= 1.84, SD= .947), [$t(158) = 10.57$, $p = .000 < .05$]. The 95% confidence interval of the difference between means ranged from [1.563 to 2.287] and indicated a difference between the means of the sample. Consequently, the null hypothesis was rejected while the alternative hypothesis was upheld. This implies that there is a significant effect of the digital literacy approach on students' performance in teaching vocabulary development.

Table 3: Independent samples t-test for mean score of students in fluency skills between students taught using digital literacy approach and those taught with conventional approach

Variable	N	Mean	Std. Deviation	T	Df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
Experimental	80	14.91	3.555					
				17.176	158	.000	5.835	7.365
Control	80	8.31	2.665					

An independent-samples t-test was conducted to compare the mean score of students in fluency skills between those taught using the digital literacy approach and those taught using the conventional approach. The experimental group, which consisted of 80 students was taught using the digital literacy approach while the control group was taught using the conventional approach. The results indicate a significant difference between experimental group (M= 14.91, SD= 3.555) and the control group (M= 8.31, SD= 2.665), [t(158) = 17.176, p = .000 < .05]. The 95% confidence interval of the difference between means ranged from [5.835 to7.365] and indicated a difference between the means of the sample. Consequently, the null hypothesis was rejected while the alternative hypothesis was upheld. This implies that there is a significant effect of the digital literacy approach on students' performance in teaching fluency skills.

Discussion

The researchers examined the effect of the digital literacy approach on students' academic performance in reading skills in the English language. The study used the three components of reading skills to teach the digital literacy approach. The findings of the study revealed that the digital literacy approach has been shown to enhance students' reading skills.

The first finding of the study revealed that the digital literacy approach has improved the performance of students in English language

reading comprehension skills. This aligned with the findings of Ahmad and Rahayu (2026) on the influence of the digital literacy approach to improve students' learning outcomes in reading comprehension in high school. In addition, the study explored by Anggapati (2024) examined the impact of media exposure on students' literacy and reading Skills development. The findings suggested that the digital literacy approach has improved the performance of students in English language reading comprehension skills.

The findings of the study revealed that the digital literacy approach has a positive impact on teaching vocabulary development. The findings of this study are in line with the studies of Raki and Buku (2026), Kang et al, (2024) and Ademola and Ijeoma (2023), who worked on the impact of the digital literacy approach to improve senior secondary academic performance in reading skill, there findings revealed that digital literacy plays a significant and positive role in improving learning outcomes. The results of the study revealed that the students' performance in English language vocabulary development improved after the intervention. The finding indicates that the digital literacy approach significantly improved students' academic performance in vocabulary development. This was notably demonstrated in the post-test scores, emphasizing the effectiveness of the digital literacy approach compared to the control group taught with conventional teaching methods for instance, Chinelo (2020) and Gamal & Shehat (2023). found that students who were taught using digital approach shown higher improvement in vocabulary development compared to those taught vocabulary development using conventional methods of teaching. In addition, studies conducted by Munir et al. (2024) and Ademola and Ijeoma, (2023) examined the influence of the digital Literacy approach on Students' Academic Performance in vocabulary skills in the English language. The findings of the studies revealed that students had a high level of performance in terms of vocabulary achievement after the intervention and that utilizing digital literacy learning and online communication had a significant impact on students' literacy performance. These studies supported the finding of the present study on the effect of digital literacy approach on student's academic performance in reading skills of the English language as the statistically evidence in the mean score of students in the experimental group, which taught using digital literacy approach was 66.38, while the control group, which was taught using the conventional method, was 60.3. The significance level was 0.05 and it was affirmed that

the digital literacy approach significantly improved the students' academic performance in reading skills in the English language.

The result of the study indicated that there was a significant effect on students' fluency when taught using the digital literacy approach, which positively improved the fluency performance of the students with a highly significant ($p< 0.5$) emphasis on the efficiency of the digital approach in enhancing students' fluency. This highlighted a substantial disparity between the two groups after the intervention. This study found that the digital literacy approach significantly improved students' academic performance in fluency skills. The experimental group outperformed the control group in fluency skills after the intervention. This finding is in agreement with the findings of Aremu and Udofia (2025). They suggested that digital literacy has a positive effect on students' academic achievement by transforming learning activities and improving fluency when communicating.

Conclusion

Based on the findings, the study concluded that the digital literacy approach significantly enhanced reading skills and their components on senior secondary school academic performance in the English language.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Language teachers should encourage students to use different digital platforms to improve their performance in all components of English language skills.
2. Schools' administrators should organize hands-on workshops and training sessions that expose students to different digital platforms
3. Teachers should be encouraged to adopt the teaching of digital educational platforms such as apps, voice assistants and chatbots, making these tools more familiar and accessible to students.
4. Language teachers need to implement and encourage learners to interact with digital literacy learning using the target language for vocabulary development, comprehension and fluency for effective communication.

References

Ahmad, S. P. & Rahayu, M. (2026) Influence of Digital Literacy on Student Learning

Outcomes in High School: Molang: Journal of Islamic Education 4 (2) 97-108

Ademola,O. A. & Ijeoma, O. F. (2023) Teachers' Perception of Digital Literacy as a Tool of

Transformation for Teaching and Learning in Public Secondary Schools in Anambra State International Journal of General Studies Education (IJOGSE) 5 (1) 124-138

Anggapati, G. (2024). Exploring the Impact of Media Exposure on Early Age Literacy and

Reading Skills Development in Children. Journal Basic Science and Technology, 13(1), 01-08

Aremu & Udofia (2025). Impact of Digital Literacy Skills on Undergraduate Performance in

Nigeria Journal of Educational Multimedia and Hypermedia, 13(1), 93-106

Chen, L., & Davis, M. (2023). Enhanced Instructional Efficiency through Digital Tool Mastery. Emerging influences of information technology on school curriculum. *Journal of Curriculum Studies, 32(2), 281–303.*

Chinelo, N. (2020). *Strategies for Teaching ESP Vocabulary in Nigerian Universities Saudi Journal of Humanities and Social Sciences 2 (2) 173-180*

Ellis, R., & Foster, G. (2022). Using Digital Storytelling to Develop Multimodal Literacy. Digital Storytelling: Capturing Lives, Creating Community (4th ed.). Routledge. Digital storytelling: A powerful technology tool for the 21st century classroom. Theory into Practice, 47(3), 220–228.

Eshet-Alkalai, Y. (2024). Digital literacy: A conceptual framework for survival skills in the digital era. Journal of Educational Multimedia and Hypermedia, 13(1), 93–106.

Federal Ministry of Communications and Digital Economy (FMCDE). (2020). National digital economy policy and strategy (2020–2030). Federal Republic of Nigeria.

Gamal, M., & Shehat, M. (2023). Developing students' EFL functional reading and attitude

through Task-Based Learning in Sohag University: *International Journal of Educational Research 7 (2) 145- 193*

Goodluck, A. K. (2025) Effect of Digital Literacy and Reading/Writing Proficiency on Academic

Performance of NCE Students in Kaduna State in (CBT) Examinations. *Journal of Multi-Disciplinary Research 2* (2), 76-87

Hakim, M. (2023), The Influence of Using the Direct Method in Teaching Reading

Comprehension and the Students' Achievement *Teaching of English Language and Literature Journal 7, (2*), 57- 64

Ikenna, P. C. (2022). Pedagogical guidance in curriculum documents for digital literacy: An Anambra State study. *Journal of Curriculum and Instruction, 11(1), 44–62.*

Kang, E., Choi, S., Li, X., & Hwang, H. (2024). Unveiling Digital Literacy Dynamics in Social

Media Usage Patterns: Comparison of Digital Skill and Critical Information Behavior: *Communications in Computer and Information Science Journal 21* (19), 67-77 https://doi.org/10.1007/978-3-031-61966-3_8

Munir, H. Aasma, T., & Huma, F. (2024) Digital Literacy and Students' Academic Performance:

A Study of Higher Education Level Al-*Mahdi Research Journal (MRJ) 5* (3) 712-726

Prabhu, N.S., (1987). *Second Language Pedagogy: Oxford University Press*

Raki, L. R., & Buku, K. R (2026). Effect of Digital Literacy on Student Learning Achievement at

Santa Ursula Ende Community Development College: *Journal of SATYA WIDYA 42 (1), 6-12*

Rubab, S., & Saleem, A. (2026). The Effect of Digital Literacy on Students' Academic

Performance, Digital Skills, Research Skills, Communication Skills, and Confidence among University Students. Qlantic *Journal of Social Sciences, 7*(2), 311-323 https://doi.org/10.55737/qjss.viiii.26544

UNESCO. (2018). A global framework of reference on digital literacy skills for indicator 4.4.2. UNESCO Institute for Statistics.

Widana, I. (2020). Literacy in the new information landscape. Library Media Connection *Journal 26* (1), 20-21.

Zhan, J. & Zhang, L.J. (2024). Effects of Manipulating Writing Task Complexity on

Learners' Performance in Completing Vocabulary and Syntactic Tasks. *Journal of Language Teaching Research. 28*(3) 110-132. https://doi.org/10.1177/13621688211024360