

INFLUENCE OF ONLINE TEXTBOOKS AND SMARTPHONES ON ACADEMIC PERFORMANCE OF BUSINESS EDUCATION STUDENTS IN COLLEGES OF EDUCATION IN ADAMAWA STATE, NIGERIA

¹Fidelis Rejoice Wasunu, ¹Dr. N.C. Dhaum, Dr. M. B. Modibbo, ¹Dr. H. D. Kefas.

¹Department of Vocational Education, Modibbo Adama University Yola

Corresponding email: rejoicefidelis17@gmail.com

ABSTRACT

This study examined the influence of online textbooks and smartphones on the academic performance of Business Education students in Colleges of Education in Adamawa State, Nigeria. A descriptive survey research design was adopted. The population comprised Business Education students in the Federal College of Education, Yola and the College of Education, Hong. A sample of 270 respondents was selected using a multi-stage sampling technique involving purposive, stratified, and simple random sampling. Data were collected using a validated instrument titled Digital Learning Resources and Academic Performance Questionnaire (DLRAPQ), which yielded a Cronbach's Alpha reliability coefficient of 0.85. Descriptive statistics (mean and standard deviation) were used to answer the research questions, while simple linear regression analysis was used to test the null hypotheses at the 0.05 level of significance. The findings revealed that online textbooks significantly influenced academic performance ($\beta = 0.630$, $t = 13.28$, $p < 0.05$), and smartphones also had a significant positive influence ($\beta = 0.547$, $t = 10.67$, $p < 0.05$). The study concluded that online textbooks and smartphones play significant roles in improving the academic performance of Business Education students in Colleges of Education in Adamawa State. It was recommended that college management should invest in digital learning infrastructure, provide reliable internet access, promote the use of online textbooks, and encourage students to use smartphones productively for academic purposes.

Keywords: Online textbooks, smartphones, academic performance, Business Education students, Colleges of Education, Adamawa State.

INTRODUCTION

Globally, the integration of digital learning resources into education has transformed teaching and learning processes across all levels of education. Digital learning resources such as e-books, online databases, learning management systems, multimedia content, and virtual classrooms have enhanced access to information, improved student engagement, and supported flexible learning environments. Studies indicate that students who actively engage with digital learning platforms tend to demonstrate improved academic performance due to increased interaction, personalized learning, and access to diverse instructional materials (Tung et al., 2024). Similarly, recent research emphasizes that the effectiveness of digital tools depends largely on how they are utilized; purposeful and guided use enhances learning outcomes, while unregulated use may negatively affect concentration and academic achievement (Saleem et al., 2024). This global shift toward digitalization in education has been further accelerated by technological advancement and the need for remote learning solutions, especially in the post-pandemic era.

In Africa, the adoption of digital learning resources has grown significantly, although at a relatively slower pace compared to developed regions due to infrastructural and technological challenges. Digital tools have been found to improve student engagement, promote self-paced learning, and enhance academic performance across various educational settings. For instance, a study in Kenya revealed that digital learning tools support personalized learning and increase student motivation, which positively influences academic outcomes (Mwangi, 2024). However, challenges such as limited

internet access, inadequate ICT infrastructure, and low digital literacy among teachers and students continue to hinder the effective utilization of these resources in many African countries (Shikali & Muneja, 2024). Despite these constraints, there is increasing recognition of digital learning as a critical tool for improving educational quality and bridging learning gaps across the continent.

In Nigeria, digital learning resources have become increasingly important in the education sector, particularly in response to disruptions caused by the COVID-19 pandemic. Educational institutions have adopted various digital platforms such as Google Classroom, Moodle, and other e-learning tools to facilitate teaching and learning. Empirical studies have shown that digital learning tools significantly enhance students' comprehension, engagement, and overall academic performance (Adewale & Emeke, 2026). Furthermore, virtual learning environments have been found to positively influence students' academic outcomes, although challenges such as poor internet connectivity, lack of devices, and inadequate technical skills persist (Babalola et al., 2023; Abdulrahman & Alimi, 2024). In addition, research focusing on business studies students in Abuja highlights that the integration of digital educational resources significantly improves scholastic performance, indicating the relevance of digital tools in business education (Olaniyi, 2024).

At the level of Adamawa State, the use of digital learning resources in Colleges of Education is gradually gaining attention as institutions strive to improve the academic performance of students, particularly in business education programs. Business education, which emphasizes the acquisition of practical skills, knowledge of modern business practices, and the use of technology, requires the integration of digital tools to enhance teaching effectiveness and student learning outcomes. However, despite the recognized benefits of digital learning resources, their availability, accessibility, and effective utilization in Colleges of Education in Adamawa State remain areas of concern. Factors such as inadequate ICT infrastructure, limited access to digital devices, inconsistent power supply, and insufficient digital competencies among both lecturers and students may influence the extent to which these resources impact academic performance. Consequently, there is a need to examine the influence of digital learning resources on the academic performance of business education students in Colleges of Education in Adamawa State, Nigeria.

Online textbooks are digital versions of conventional printed texts that can be accessed via computers, tablets, or smartphones. They offer several advantages over physical textbooks, including searchability, portability, multimedia integration, and frequent updates. These features make online textbooks a flexible and cost-effective resource for students in Business Education, allowing them to review and revisit complex concepts at their own pace. Research indicates that students who engage with digital text resources frequently tend to better manage their study time and show improved comprehension, which can positively influence their academic performance.

Smartphones have become ubiquitous among students and serve as primary devices for accessing digital resources. Their portability and connectivity enable learners to engage with educational content anytime and anywhere, which extends learning beyond the classroom. Smartphone-enabled applications and websites allow students to collaborate, access e-books, participate in discussions, and complete assignments using digital platforms. Research shows that integrating smartphone technology into educational activities increases student engagement and facilitates flexible learning, which can improve academic outcomes when used purposefully for educational tasks.

Previous studies have provided evidence that digital technologies can contribute positively to students' learning, although the findings vary according to the type of technology, educational setting, and manner of use. For example, Buba and Samuel (2021) reported a strong positive relationship between ICT utilisation and the academic performance of Business Education students at the Federal College of Education, Yola, while also identifying challenges such as inadequate access to digital tools and erratic electricity supply. Adeoye and Adanma (2020) also found a positive relationship between digital library use and students' academic performance, although inadequate

awareness, digital literacy challenges, and slow internet connectivity limited effective utilization. These findings suggest that digital resources can support academic activities, but contextual conditions may determine the extent of their effectiveness.

Despite the increasing adoption of digital learning resources, there is still a need for more context-specific research on how particular digital resources influence the academic performance of Business Education students in Colleges of Education in Adamawa State. Existing studies have often examined ICT or digital technology generally without sufficiently distinguishing among specific resources such as online textbooks and smartphones. Furthermore, findings from institutions in other parts of Nigeria may not fully reflect the circumstances of Colleges of Education in Adamawa State because differences exist in infrastructure, electricity supply, internet access, institutional support, and students' exposure to digital technologies. Therefore, examining these specific digital learning resources within the Adamawa State context is necessary.

It is on the basis that the study seeks to determine the influence of digital learning resources on the academic performance of Business Education students of Colleges of Education in Adamawa State, with particular attention to online textbooks and smartphones. The study seeks to determine the extent to which these resources are available and utilized by students and the extent to which their use is associated with students' academic performance. The findings are expected to provide useful information to lecturers, students, administrators, policymakers, and other stakeholders on how digital learning resources can be effectively utilized to support teaching and learning in Business Education programmes in Colleges of Education in Adamawa State.

Conceptual Framework

The conceptual framework explains the relationship between digital learning resources and the academic performance of Business Education students in Colleges of Education in Nigeria. It identifies the key variables involved and illustrates how digital learning resources influence students' academic outcomes within the Nigerian educational context

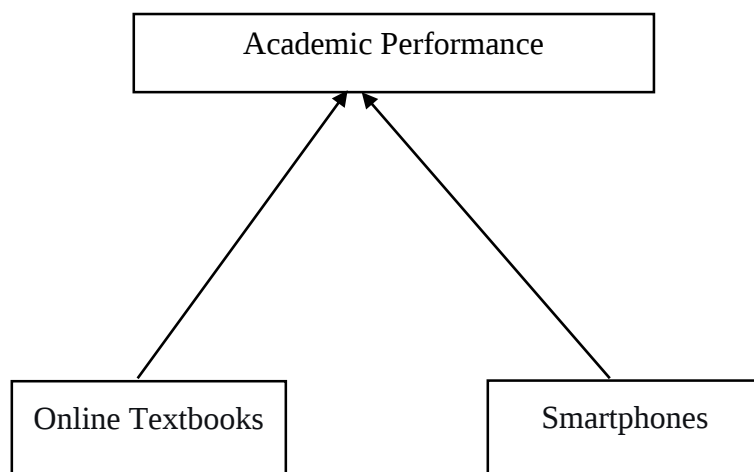


Figure 1 showing the conceptual framework of the study

RESEARCH METHODOLOGY

Research Design

This study adopted a descriptive survey research design. The survey design was considered appropriate because it enabled the researcher to collect data from a large population and describe the relationship between digital learning resources and the academic performance of Business Education students. The design also allowed the use of quantitative methods, such as correlation

and regression analysis, to determine the influence of the independent variables on the dependent variable.

Area of the Study

The study was conducted in Adamawa State, Nigeria, situated in the northeastern region of the country. Adamawa State is known for its diverse educational landscape, hosting several tertiary institutions, including multiple Colleges of Education, FCE Yola and COE Hong that offer business education programmes. These institutions play a critical role in training future business educators and professionals, equipping them with the knowledge and skills required in the contemporary business environment. Given the increasing adoption of digital technologies in education, these Colleges of Education are expected to integrate digital learning resources such as online textbooks and smartphones into their teaching and learning processes. The effective use of these digital tools is essential for enhancing instructional delivery, promoting interactive learning, and ultimately improving students' academic performance and professional readiness in the field of Business Education.

Population of the Study

The population of this study consisted of all 507 Business Education students in FCE Yola and COE Hong in Adamawa State. The study included 206 NCE One, 170 NCE Two, and 131 NCE Three who are actively involved in digital learning resources during the period of the study.

Sample Size and Sampling Technique

A total of 270 students were drawn from the population using a multi-stage sampling technique. In the first stage, purposive sampling was employed to select Colleges of Education that offer business education programmes. In the second stage, students were stratified by level (NCE One, Two and Three) to ensure representation across all academic cohorts. Finally, simple random sampling was used to select respondents from each stratum. This multi-stage approach guarantees that students from all levels are proportionately represented in the study.

Instrument for Data Collection

The study utilized two instruments to ensure comprehensive data collection on the variables under investigation. The first instrument, the Digital Learning Resources and Academic Performance Questionnaire (DLRAPQ), is a structured questionnaire designed to capture respondents' demographic characteristics and their perceptions of digital learning resource usage. It comprises two sections: Section A, which gathers demographic information such as gender and level of study, and Section B, which assesses the use of online textbooks, educational applications, smartphone usage, and institutional website usage, as well as academic performance. Items in Section B are measured using a 4-point scale ranging from Strongly Agree (4) to Strongly Disagree (1), providing quantifiable data suitable for statistical analysis of the relationship between digital resource use and academic performance.

The second instrument, the Observation Checklist for Digital Resource Usage (OCDRU), has been employed to validate actual usage of digital learning resources in the selected Colleges of Education. This checklist focuses on observable behaviors, such as students accessing online textbooks and smartphones for academic purposes during lectures and practical sessions. By recording the frequency and nature of these interactions, the checklist provides empirical evidence that complements the self-reported data from the questionnaire. Together, these two instruments enable the study to capture both perceived and actual use of digital learning resources, thereby enhancing the reliability and validity of the findings.

Validity of the Instrument

To establish content validity, the questionnaire had undergone a thorough review by three lecturers from the Department of Business Education and one specialist in educational measurement and evaluation. Their expert feedback guided the revision and refinement of the instrument, ensuring clarity, relevance, and alignment with the study's objectives. This process will confirm that each item accurately captures the intended constructs and effectively measures the concepts under investigation, thereby enhancing the overall reliability and credibility of the data collected for the research.

Reliability of the Instrument

The reliability of the questionnaire was assessed using Cronbach's Alpha coefficient through a pilot study involving 30 Business Education students from the College of Education Zing which is outside the main study area. This preliminary testing helped identify any ambiguities or inconsistencies in the instrument, ensuring its internal consistency. A reliability coefficient of 0.85 has been determined, demonstrated that the questionnaire produces stable and consistent results.

Method of Data Collection

Data for this study were collected through the direct administration of questionnaires to the respondents by the researcher, with support from two trained research assistants. This approach facilitates face-to-face engagement with participants, which enhances the likelihood of obtaining a high response rate. Additionally, it allows the researcher and assistants to provide immediate clarification of any items that respondents may find unclear or ambiguous, ensuring that the data collected are accurate, reliable, and reflective of the participants' true perceptions and experiences.

Method of Data Analysis

The data was analyzed using a combination of descriptive and inferential statistics. Descriptive statistics, including mean and standard deviation, was used to summarize and answer the research questions. Inferential statistics was employed to test the relationships and predictive effects among variables. Specifically, the Pearson Product Moment Correlation (PPMC) was used to determine the relationship between digital learning resources and academic performance, simple linear regression was tested individual hypotheses at 0.05 level of significance ($p < 0.05$). The null hypothesis was rejected where the calculated p-value is less than 0.05 and accepted where the calculated p-value is greater than or equal to 0.05 and multiple regression analysis will examine the combined influence of digital learning resources on students' academic performance.

RESULTS

This chapter presents the analysis and interpretation of data collected to examine the influence of digital learning resources on the academic performance of Business Education students in Colleges of Education in Adamawa State, Nigeria.

Research Question One

What is the influence of online textbooks on academic performance of business education students in Colleges of Education in Adamawa State?

Table 1: Influence of Online Textbooks on Academic Performance

S/N	Items	N	Mean ($\bar{X}$)	SD	Remarks
1	I frequently use online textbooks for my business education courses.	270	3.16	0.50	Agree
2	Online textbooks improve my understanding of course content.	270	3.22	0.51	Agree
3	Using online textbooks positively affects my academic performance.	270	2.23	0.48	Disagree
4	Online textbooks are easily accessible anytime I need them	270	3.17	0.23	Agree
5	I can access online textbooks using different devices (phone, laptop, tablet)	270	3.26	0.49	Agree
6	Internet connectivity does not significantly limit my access to online textbooks.	270	3.04	0.65	Agree
7	I find it easy to highlight, bookmark, or take notes in online textbooks	270	3.15	0.19	Agree
8	The content in online textbooks is clear and well-organized	270	3.17	0.57	Agree
9	Online textbooks provide up-to-date and relevant information	270	3.23	0.72	Agree
10	Online textbooks encourage independent learning among business education students	270	3.23	0.33	Agree

Source: Field Work by Researcher 2026

The table shows that respondents generally agreed that online textbooks positively influence their academic learning, as most items recorded mean scores above the acceptance level. Respondents agreed that online textbooks improve their understanding of course content ($\bar{X} = 3.22$), are accessible when needed ($\bar{X} = 3.17$), can be accessed through different devices ($\bar{X} = 3.26$), provide clear and well-organized content ($\bar{X} = 3.17$), offer up-to-date information ($\bar{X} = 3.23$), and encourage independent learning ($\bar{X} = 3.23$). However, respondents disagreed that the use of online textbooks positively affects their academic performance ($\bar{X} = 2.23$). Overall, the findings indicate that while online textbooks are perceived as accessible and useful for learning, their direct influence on students' academic performance is not strongly established.

Research Question Two

What is the influence of smartphones on academic performance of business education students in Colleges of Education in Adamawa State?

Table 2: Influence of Smartphones on Academic Performance

S/N	Items	N	$\bar{X}$	SD	Remarks
1	I use my smartphone for academic purposes, such as research and assignments.	270	3.24	0.92	Agree
2	Using smartphones for learning improves my academic performance.	270	3.10	0.98	Agree
3	Smartphones enable me to access study materials anytime and anywhere.	270	3.30	0.86	Agree
4	My smartphone is readily available whenever I need it for learning.	270	3.27	0.85	Agree
5	My smartphone supports most of the learning applications I need.	270	3.05	0.97	Agree
6	I have sufficient data access to use my smartphone for academic purposes.	270	3.10	0.99	Agree
7	Smartphones encourage independent learning and self-study.	270	3.23	0.84	Agree
8	Smartphones have improved my time management and study habits.	270	3.18	0.87	Agree
9	Smartphones have enhanced my note-taking and information storage capabilities.	270	3.22	0.94	Agree
10	Frequent use of smartphones contributes positively to my academic achievement.	270	3.19	0.82	Agree

Source: Field Work by Researcher 2026

Table 2 shows that business education students generally agreed that smartphones positively influence their academic performance. All the items recorded mean scores above the benchmark of 2.50, ranging from 3.05 to 3.30, indicating a high level of agreement. The highest mean was recorded for access to study materials anytime and anywhere ($\bar{X} = 3.30$, $SD = 0.86$), while the lowest was for smartphone support for learning applications ($\bar{X} = 3.05$, $SD = 0.97$). Overall, the

findings suggest that smartphones enhance access to learning materials, independent learning, note-taking, information storage, study habits, and academic achievement.

Hypothesis Testing

H₀₁: Online textbooks have no significant influence on academic performance of Business Education students in Colleges of Education in Adamawa State.

Table 3: Simple Linear Regression Analysis Showing the Influence of Online Textbooks on Academic Performance

Variable	B	Std. Error	t	Sig.	Beta (β)	R	R ²	Adj. R ²	Decision
Constant	1.421	0.181	7.85	.000	0.630	0.630	0.397	0.395	Rejected
Online Textbooks	0.624	0.047	13.28	.000					

Online textbooks significantly influence students' academic performance ($\beta = 0.630$, $t = 13.28$, $p < 0.05$). The model shows a strong positive relationship between online textbooks and academic performance ($R = 0.630$). The R^2 of 0.397 indicates that online textbooks explain approximately 39.7% of the variation in academic performance, while the adjusted R^2 indicates 39.5% after adjustment for the predictor in the model. Since the significance value ($p = .000$) is less than 0.05, the null hypothesis (H_{01}) is **rejected**.

H₀₃: Smartphones have no significant influence on academic performance of Business Education students in Colleges of Education in Adamawa State.

Table 4: Simple Linear Regression Analysis Showing the Influence of Smartphones on Academic Performance

Variable	B	Std. Error	t	Sig.	Beta (β)	R	R ²	Adj. R ²	Decision
Constant	1.687	0.185	9.12	.000	0.547	0.681	0.464	0.462	Rejected
Smartphones	0.521	0.049	10.67	.000					

The result shows a strong positive relationship between smartphone use and academic performance ($R = 0.681$). The $R^2 = 0.464$ indicates that smartphones account for 46.4% of the variation in academic performance, while the adjusted R^2 is 0.462. Since $p = .000 < 0.05$, the relationship is statistically significant; therefore, the null hypothesis (H_{03}) is **rejected**. Smartphone use has a significant positive influence on academic performance.

Table 5: Summary of Hypotheses on Test of Independent Variables Results

Hypothesis	β	t	P-value	Decision
H ₀₁ : Online Textbooks → Academic Performance	0.630	13.28	.000	Reject H ₀₁
H ₀₃ : Smartphones → Academic Performance	0.547	10.67	.000	Reject H ₀₃

The summary of the hypotheses indicates that both digital learning resources have a statistically significant positive influence on the academic performance of Business Education students, as evidenced by their positive beta coefficients and p-values of .000 ($p < .05$). Specifically, online textbooks ($\beta = 0.630$, $t = 13.28$) exhibited the stronger influence, followed by smartphones ($\beta = 0.547$, $t = 10.67$). Consequently, both null hypotheses (H₀₁ and H₀₃) were rejected, confirming that each digital learning resource significantly enhances students' academic performance.

DISCUSSION OF FINDINGS

Influence of Online Textbooks on Academic Performance

The study found that students generally agreed that online textbooks positively influence their learning experience. This is consistent with previous research on the educational value of electronic textbooks. In the present study, respondents reported that online textbooks are accessible across multiple devices, easy to use, well-organized, current, and useful for independent learning. These findings are in conformity with Rockinson-Szapkiw, Courduff, Carter, and Bennett (2013), who reported that students perceived electronic textbooks as convenient, portable, and beneficial to their learning. Similarly, Daniel and Woody (2013) found that students appreciated the accessibility and flexibility associated with electronic textbooks. The agreement between these studies suggests that the major advantages of online textbooks are associated with convenience, portability, accessibility, and the ability to support students' learning activities.

However, the present study differs from some aspects of the earlier studies regarding the relationship between online textbooks and academic performance. Although respondents in this study disagreed with the statement that using online textbooks positively affects their academic performance (Mean = 2.23), the regression analysis revealed that online textbooks had the strongest and statistically significant positive influence on academic performance ($\beta = 0.630$, $t = 13.28$, $p < 0.05$). This finding is partly in disagreement with Daniel and Woody (2013), who reported that the benefits of digital textbooks in terms of accessibility and flexibility did not necessarily translate into superior academic achievement. It also differs from Rockinson-Szapkiw et al. (2013), who found that although students considered electronic textbooks beneficial and convenient, the evidence of improved academic outcomes was not consistently significant. The stronger statistical effect found in the present study may be attributable to differences in institutional context, students' patterns of digital-resource use, teaching practices, availability of online materials, or the nature of academic assessments.

The apparent contradiction between students' perceptions and the regression result is also important. Students may recognize online textbooks primarily as convenient resources without directly attributing their academic achievement to their use. Academic performance is influenced by several interacting factors, including students' study habits, motivation, instructional methods, prior knowledge, quality of learning materials, and assessment practices. Consequently, the statistical contribution of online textbooks may occur indirectly through improved access to information, independent learning, revision, and preparation for assessments. Thus, the present finding does not

necessarily contradict the students' perception; rather, it suggests that the contribution of online textbooks to academic performance may not always be consciously recognized by learners. The finding is also consistent with the Technology Acceptance Model (TAM) developed by Davis (1989). TAM proposes that perceived usefulness and perceived ease of use are important determinants of users' acceptance and utilization of technology. In this study, students generally perceived online textbooks as accessible, easy to use, organized, and useful for independent learning. These perceptions could encourage continued utilization of online textbooks, thereby creating opportunities for the resources to contribute to academic achievement. However, the disagreement with the direct perception statement on academic performance suggests that perceived usefulness of a technology does not necessarily mean that users will immediately perceive a direct improvement in their grades. The present study therefore supports TAM with respect to usefulness and ease of use, while demonstrating that the perceived educational usefulness of a technology and its statistically observed effect on academic performance may not always be identical.

Influence of Smartphones on Academic Performance

The findings revealed that business education students generally agreed that smartphones positively influence their academic performance, with all items recording mean scores above 3.00. Students reported using smartphones for academic purposes such as research and assignments, accessing study materials anytime and anywhere, and engaging in independent learning and self-study. The highest mean score (3.30) was obtained for the statement that smartphones enable students to access study materials anytime and anywhere, highlighting the importance of smartphone portability and connectivity in supporting flexible learning. The lowest mean score (3.05) was recorded for smartphone support for learning applications, suggesting that while students value smartphones for learning, device compatibility remains a moderate concern.

The regression analysis confirmed the significant positive influence of smartphones on academic performance ($\beta = 0.547$, $t = 10.67$, $p < 0.05$), indicating that smartphones contribute positively to academic achievement when used purposefully for educational tasks. This finding implies that the portability and connectivity of smartphones facilitate flexible learning and enhance students' academic outcomes.

This finding is consistent with previous studies that reported a positive relationship between smartphone use and students' academic performance. For instance, Alhassan and Osei (2021) found that smartphones enhance students' access to educational resources and improve learning outcomes in tertiary institutions. Similarly, Jibril et al. (2020) reported that smartphone-assisted learning promotes flexibility, independent study, and better academic engagement among university students. The present result also agrees with Owolabi and Oyewole (2022), who observed that students who frequently use smartphones for academic purposes tend to achieve better academic results.

However, the finding disagrees with studies that emphasized the negative effects of excessive smartphone use. Lepp, Barkley, and Karpinski (2015) reported that excessive and non-academic smartphone use can distract students and reduce academic performance. Likewise, Samaha and Hawi (2016) found that problematic smartphone use is associated with lower academic achievement and reduced concentration. The difference may be due to the fact that the current study focused primarily on academic use of smartphones rather than recreational or addictive use.

The finding also aligns with the Technology Acceptance Model (TAM), which posits that perceived usefulness and perceived ease of use determine technology adoption and usage. Students in this study perceived smartphones as useful for accessing study materials, conducting research, and completing assignments, and also perceived them as easy to use given their familiarity with the

devices. These perceptions likely encouraged consistent academic use of smartphones, which in turn contributed to improved academic performance.

CONCLUSION

Based on the findings of this study, it is concluded that online textbooks significantly influence the academic performance of Business Education students in Colleges of Education in Adamawa State. The accessibility, flexibility, and interactive features of online textbooks enhance students' learning experiences and contribute positively to their academic achievement. However, students may not fully recognize the direct impact of online textbooks on their performance, suggesting a need for greater awareness and guidance in utilizing these resources effectively.

Smartphones significantly influence the academic performance of Business Education students when used for educational purposes. The portability, connectivity, and accessibility of smartphones enable students to access learning materials anytime and anywhere, engage in independent learning, and improve their study habits and time management, thereby enhancing their academic achievement. The study concludes that effective utilization of digital learning resources, particularly online textbooks and smartphones, is a critical factor in enhancing the academic performance of Business Education students in Colleges of Education in Adamawa State. However, factors such as inadequate ICT infrastructure, limited internet access, and insufficient digital competencies among students and lecturers remain challenges that need to be addressed to maximize the benefits of digital learning resources.

RECOMMENDATIONS

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

1. Business Education students should explore the interactive features of online textbooks, such as highlighting, bookmarking, and note-taking, to maximize their comprehension and retention of course content. The institution should also provide online textbooks for easy access by the students.
2. Students should use their smartphones productively for academic purposes, including research, accessing e-books and online journals, participating in discussions, and completing assignments.
3. College management should invest in digital learning infrastructure, provide reliable internet access, and promote the use of online textbooks to support teaching and learning in Business Education programmes.
4. Institutions should strengthen digital literacy programmes for lecturers and students, and formulate policies that encourage the effective integration of digital learning resources into Business Education programmes.

SUGGESTIONS FOR FURTHER STUDIES

1. Future studies should employ experimental or quasi-experimental research designs to establish causal relationships between specific digital learning resources and academic performance. This will provide more robust evidence on the effectiveness of digital learning resources in enhancing student learning outcomes.
2. Further research should investigate the influence of digital learning resources on academic performance across different disciplines and levels of education to determine the generalizability of the findings. Studies should also examine the role of factors such as digital literacy, institutional support, and student motivation in moderating the relationship between digital learning resource utilization and academic performance.

REFERENCES

- Abdulrahman, M. R., & Alimi, A. E. (2024). Influence of virtual learning on secondary school students' academic performance during the pandemic in Nigeria. *ASEAN Journal of Research*.
- Adebayo, S. A., & Kazeem, R. O. (2021). Impact of digital learning resources on business education students' performance. *Journal of Educational Technology*, 15(2), 45–56.
- Adeoye, A., & Adanma, O. (2020). Access, frequency of use, and barriers to digital libraries among students in Colleges of Education in South-West Nigeria. *Journal of Educational Technology and Development*, 7(2), 45–62.
- Adewale, J. G., & Emeke, E. A. (2026). Impact of digital learning tools on the academic performance of secondary school students in Nigeria. *Asian Journal of Research and Development Studies*.
- Alhassan, R., & Osei, M. (2021). Smartphone usage and academic performance among tertiary students. *International Journal of Educational Technology*, 8(2), 45–54.
- Babalola, E. O., Adeyoola, I. A., & Omolafe, E. V. (2023). Virtual learning as a determinant of students' academic performance in University of Ilorin during COVID-19 pandemic. *Journal of Digital Learning and Education*.
- Buba, A., & Samuel, L. (2021). Impact of ICT utilization on academic performance of Business Education students at the Federal College of Education, Yola, Adamawa State. *Journal of Business Education and Technology*, 5(1), 33–50.
- Daniel, D. B., & Woody, W. D. (2013). E-textbooks at what cost? Performance and use of electronic v. print texts. *Computers & Education*, 62, 18–23.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Jibril, A. B. (2020). Mobile learning and students' academic engagement in higher education. *Education and Information Technologies*, 25(6), 5231–5247.
- Lepp, A., Barkley, J. E., & Karpinski, A. C. (2015). The relationship between cell phone use and academic performance in a sample of U.S. college students. *SAGE Open*, 5(1), 1–9.
- Mwangi, J. (2024). Impact of digital learning tools on student performance in Kenya. *African Journal of Education and Practice*.
- Olaniyi, L. H. (2024). Impact of digital educational resources on the scholastic performance of business studies students in junior secondary schools in Abuja. *Nigerian Journal of Business Education*.
- Owolabi, S. A., & Oyewole, B. K. (2022). Smartphone utilization and academic achievement among college students in Nigeria. *Journal of Educational Research and Practice*, 12(1), 66–78.

- Rockinson-Szapkiw, A. J., Courduff, J., Carter, K., & Bennett, D. (2013). Electronic versus traditional print textbooks: A comparison study on the influence of university students' learning. *Computers & Education*, 63, 259–266.
- Saleem, A., et al. (2024). Measuring students' use of digital technology to support their studies. *Education Sciences*.
- Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior*, 57, 321–325.
- Shikali, J. C., & Muneja, P. S. (2024). Access to library information resources by university students during COVID-19 pandemic in Africa: A systematic literature review. *arXiv*.
- Tung, K. Y., Rivandi, M., Solang, D. J., Hariko, R., & Judijanto, L. (2024). Effects of digital learning platforms on academic achievement among secondary school students: A mixed-methods analysis. *Journal of Hunan University Natural Sciences*.