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ASSESSMENT OF INFLUENCE OF DIGITAL LEARNING TOOLS ON ACADEMIC PERFORMANCE AMONG TERTIARY INSTITUTIONS' STUDENTS IN JALINGO: A STUDY OF SELECTED INSTITUTIONS

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Abstract
This study assessed influence of digital learning tools on students' academic performance among tertiary institution students in Jalingo, Taraba State. The study was conducted College of Agriculture, Science and Technology, Taraba State University, and Taraba State Polytechnic. A descriptive survey research design was adopted, and 200 students were selected using stratified and simple random sampling techniques. Data were collected using a structured questionnaire. The data were analysed using frequencies, percentages, mean, and Chi-square (χ^2) statistics at 0.05 level of significance. The findings revealed that smartphones, WhatsApp, YouTube educational videos, Microsoft Office applications, and laptops were the most commonly used digital learning tools. The extent of utilisation was high, with a grand mean of 3.16. Digital learning tools were also perceived to have a positive influence on students' academic performance, with a grand mean of 3.39, particularly through improved access to learning materials, faster information retrieval, independent learning, and examination preparation. However, major challenges included unstable electricity supply, high internet data costs, poor internet connectivity, inadequate ICT facilities, and the cost of digital devices. Strategies strongly supported by respondents included improved electricity supply, affordable internet access, better ICT infrastructure, digital skills training, and integration of digital learning into classroom teaching, with a grand mean of 3.52. The Chi-square analysis revealed a significant relationship between digital learning tool utilisation and students' academic performance ($\chi^2 = 18.64$, $df = 4$, $p = 0.001$). The study concluded that effective utilisation of digital learning tools could contribute to improved academic performance. It recommended improved ICT infrastructure, reliable electricity and affordable internet services, regular digital skills training, integration of digital learning into classroom instruction, and increased institutional and government support for digital education.
***Keywords**: Assessment, Influence, Digital learning tools, academic performance, tertiary institutions.*

1.0 Introduction

The integration of digital learning tools into education has significantly transformed teaching and learning processes across the globe by reshaping traditional instructional methods and creating more flexible, interactive, and learner-centred educational environments. Digital learning tools encompass a broad range of technology-based instructional resources, including e-learning platforms, online classrooms, educational mobile applications, digital libraries, multimedia

instructional software, virtual laboratories, learning management systems, and cloud-based collaborative tools. These technologies have become important in modern education because they facilitate access to information, support self-paced learning, encourage collaborative engagement, and improve teaching efficiency (Pan *et al.,* 2024). Globally, institutions of higher learning have increasingly adopted digital technologies to modernise educational delivery and align teaching practices with technological developments. This adoption became particularly prominent following the COVID-19 pandemic, which accelerated the use of remote and blended learning and demonstrated the importance of technology in maintaining educational continuity (Rafiq *et al.,* 2024). Digital learning environments allow students to access educational materials anytime and anywhere, thereby promoting independent learning, flexibility, and academic engagement beyond the physical classroom.

In Nigeria, tertiary institutions are progressively integrating digital learning technologies into instructional delivery to complement conventional face-to-face teaching. Universities, polytechnics, colleges of education, and other higher institutions have introduced online course portals, digital libraries, computer-assisted learning systems, and virtual communication platforms to improve educational delivery and align with global standards. The Federal Government of Nigeria and institutional administrators have also emphasised digital transformation as a strategy for improving educational access, quality, and competitiveness in the global knowledge economy (Theodorio, 2025). However, despite the increasing availability of digital learning technologies, their influence on students' academic performance remains subject to debate. Some studies indicate that digital learning tools can improve academic performance by increasing access to learning resources, promoting student engagement, supporting personalised learning, and facilitating interactive instructional approaches (Rafiq *et al.,* 2024). Conversely, the effectiveness of these technologies may be limited by poor infrastructure, unstable electricity supply, inadequate internet connectivity, high data costs, limited digital literacy, and inappropriate use of digital devices for non-academic activities (Pérez-Juárez *et al.,* 2024).

In Jalingo, Taraba State, tertiary institutions such as the College of Agriculture, Science and Technology, Taraba State University, and Taraba State Polytechnic have increasingly adopted digital learning resources to support teaching and learning activities. Nevertheless, limited empirical evidence exists regarding the extent to which students use these tools and their actual influence on academic performance in the selected institutions. The availability of digital devices such as smartphones, tablets, and laptops does not necessarily guarantee effective academic use, as students may differ in their digital competencies, motivation, access to internet services, and ability to manage technology effectively. Furthermore, the use of digital devices for social media, entertainment, gaming, and other non-academic activities may create distractions and reduce students' study time (Pérez-Juárez *et al.,* 2024).

The problem is further complicated by challenges such as unstable electricity supply, poor internet connectivity, high cost of data, inadequate ICT infrastructure, limited institutional support, and insufficient training for students and lecturers. These factors may prevent students from fully benefiting from available digital learning resources (Theodorio, 2025). Consequently, there is a need to establish whether the use of digital learning tools is contributing positively to students' academic performance or whether existing challenges are limiting their educational benefits. Therefore, this study seeks to examine the influence of digital learning tools on students' academic performance among tertiary institution students in Jalingo, with particular focus on the College of Agriculture, Taraba State University, and Taraba State Polytechnic. The study will identify commonly used digital learning tools, determine their extent of utilisation, assess their influence on academic performance, identify associated challenges, and suggest strategies for improving digital learning adoption and effectiveness in the selected institutions.

2.0 Objectives of the Study

The broad objectives of this study is to examine the influence of digital learning tools on students' academic performance among tertiary institution students in Jalingo, Taraba State. The specific objectives were to:

1. identify the digital learning tools commonly used by tertiary institution students in Jalingo.
2. ascertain the extent of utilisation of digital learning tools among tertiary institution students in Jalingo.
3. determine the influence of digital learning tools on students' academic performance.
4. identify the challenges associated with the use of digital learning tools among tertiary institution students in Jalingo.

Research Hypothesis

This hypothesis was tested for this study:

1. There is no significant effect of digital learning tools on students' academic performance among tertiary institution students in Jalingo, Taraba State.

3.0 Methodology

The study was conducted in Jalingo, Taraba State, Nigeria, focusing on the College of Agriculture, Science and Technology, Taraba State University, and Taraba State Polytechnic. The institutions were purposively selected based on accessibility, diversity of academic disciplines, and representation of different categories of tertiary education. The study population comprised registered students of the selected institutions, from which 200 students were proportionally selected using stratified and simple random sampling techniques to ensure adequate representation (DeYoreo, 2016). A descriptive survey design was adopted to obtain quantitative information on students' use of digital learning tools, extent of utilisation, influence on academic performance, associated challenges, and improvement strategies (Harris *et al.,* 2023). Data were collected using a structured questionnaire developed in line with the study objectives. The questionnaire contained socio-demographic questions and four-point Likert-scale items. All substantive items were measured using Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. The four-point Likert scale was used to measure students' perceptions of digital learning tool utilisation, influence on academic performance, challenges, and strategies for improving digital learning. Likert scales are widely used in survey research to measure attitudes, perceptions, and levels of agreement with structured statements (Taufique, 2026).

The questionnaire was administered directly by the researcher with the assistance of trained research assistants. Respondents participated voluntarily, while anonymity and confidentiality were maintained. The collected data were coded and analysed using the Statistical Package for the Social Sciences (SPSS). Frequencies and percentages were used to summarise respondents' socio-demographic characteristics and identify commonly used digital learning tools, while mean scores were used to analyse the Likert-scale responses. A criterion mean of 2.50 was adopted for decision-making, such that mean scores of 2.50 and above indicated agreement, while mean scores below 2.50 indicated disagreement. Chi-square (χ^2) analysis was used to examine the relationship between digital learning tool utilisation and students' academic performance. Statistical significance was tested at the 5% probability level ($p < 0.05$). The results were presented in tables and charts where appropriate.

4.0 Results and Discussion

4.1 Socio-economic Characteristics of Respondents

Table 1 show that 40.0% of the respondents were students of Taraba State University, while the College of Agriculture, Science and Technology and Taraba State Polytechnic each accounted for 30.0%. Males constituted 52.0% of the respondents, while females accounted for 48.0%, indicating a fairly balanced gender distribution. This is consistent with Mohammed *et al.* (2026), who reported

a relatively balanced gender distribution among students in Nigerian higher institutions. Regarding age, respondents aged 20–24 years constituted the largest group (46.0%), followed by those aged 25–29 years (24.0%). Respondents below 20 years accounted for 19.0%, while those aged 30 years and above represented 11.0%. The predominance of respondents aged 20–24 years agrees with findings that young adults constitute a substantial proportion of students in Nigerian tertiary institutions (Mohammed *et al.,* 2026). Overall, the respondents were reasonably distributed across the selected institutions, sexes, and age groups.

Table 1: Socio-Demographic Characteristics of Respondents (n=200)

Variable	Category	Frequency (n)	Percentage (%)
Sex	Male	104	52.0
	Female	96	48.0
Age (years)	Below 20	38	19.0
	20–24	92	46.0
	25–29	48	24.0
	30 and above	22	11.0
Total		**200**	**100.0**

Source: *Field Survey (2026).*

4.2 Digital learning tools are commonly used by tertiary institutions' students in Jalingo

Table 2 presents the digital learning tools commonly used by respondents. The grand mean usage rate of 62.13% indicates that digital tools were generally used by more than half of the respondents for academic purposes. Smartphones/mobile phones were the most widely used (97.0%), followed by WhatsApp (91.0%), YouTube educational videos (84.0%), Microsoft Office applications (78.0%), and laptops/desktops (73.0%). This high reliance on smartphones and WhatsApp is consistent with Prince (2023), who reported that 89% of tertiary students studied used smartphones for academic and social purposes, with WhatsApp being the most frequently used social platform. Similarly, Umoh (2024) found that WhatsApp and YouTube significantly supported the acquisition of learning resources among Nigerian undergraduates.

Moderate usage was recorded for digital libraries/e-books (66.0%), e-learning platforms (62.0%), educational mobile applications (59.0%), AI tools (57.0%), Learning Management Systems (54.0%), and online academic databases (51.0%). The 57.0% usage of AI tools is noteworthy given the increasing adoption of AI in Nigerian higher education. Owan *et al.* (2025) found considerable acceptance of AI for self-directed research learning among Nigerian postgraduate students, although actual usage remained relatively low. Likewise, Aiyebelehin, Abdulkareem, Aba, and Idemudia (2025) found that digital literacy and awareness were important factors influencing students' use of ChatGPT.

The least-used tools were Telegram (48.0%), Zoom/Google Meet (44.0%), Google Classroom (37.0%), and tablets/iPads (31.0%). This pattern suggests that respondents preferred easily accessible mobile and social communication technologies over specialised digital learning platforms. The standard deviations (0.171–0.500) further indicate differences in the extent to which respondents used the various tools. Overall, smartphones, WhatsApp, YouTube, and Microsoft Office emerged as the dominant digital learning tools, reflecting the growing role of accessible digital technologies in supporting academic activities among Nigerian students.

Table 2: Digital Learning Tools Commonly Used by Respondents (n=200)

S/N	Digital Learning Tool	Frequency	Percentage (%)	Standard Deviation
1	Smartphone/mobile phone	194	97.0	0.171
2	WhatsApp	182	91.0	0.287
3	YouTube educational videos	168	84.0	0.367
4	Microsoft Office applications	156	78.0	0.415
5	Laptop/desktop computer	146	73.0	0.444
6	Digital libraries/e-books	132	66.0	0.474
7	E-learning platforms	124	62.0	0.485
8	Educational mobile applications	118	59.0	0.492
9	Artificial Intelligence (AI) tools	114	57.0	0.495
10	Learning Management Systems	108	54.0	0.498
11	Online academic databases	102	51.0	0.500
12	Telegram	96	48.0	0.500
13	Zoom/Google Meet	88	44.0	0.497
14	Google Classroom	74	37.0	0.483
15	Tablet/iPad	62	31.0	0.462
	Grand Mean	—	**62.13**	**0.438**

Source: Field Survey, 2026.

4.3 Extent of utilisation of digital learning tools among tertiary institution students in Jalingo

Table 3 presents the extent to which respondents utilise digital learning tools for academic activities. The grand mean of 3.16 (SD = 0.82) indicates a generally positive level of utilisation. Searching for academic information recorded the highest mean (M = 3.51, SD = 0.65), followed by communicating with classmates about assignments and group work (M = 3.44, SD = 0.72) and accessing lecture notes and course materials (M = 3.42, SD = 0.71). This suggests that respondents mainly use digital technologies for information access, academic communication, and accessing learning materials. This finding agrees with Umoh (2024), who reported that social media platforms such as WhatsApp and YouTube support students' access to learning resources and academic information.

Respondents also reported using online resources for examination preparation (M = 3.41), educational videos for understanding difficult topics (M = 3.36), and digital tools for revision outside the classroom (M = 3.35). These findings demonstrate that digital technologies support learning beyond the traditional classroom. Owan *et al.* (2025) similarly found increasing acceptance of digital and artificial intelligence technologies for self-directed learning among Nigerian university students. However, online academic databases recorded the lowest mean (M = 2.71, SD = 0.96), followed by virtual classes (M = 2.76, SD = 0.94), digital applications for organising study activities (M = 2.83, SD = 0.91), and AI-based learning tools (M = 2.85, SD = 0.93). The relatively lower utilisation of these specialised tools may reflect differences in students' awareness, digital skills, accessibility, or institutional support. Aiyebelehin *et al*. (2025) similarly identified digital literacy and awareness as important factors influencing students' use of AI-based educational technologies. Overall, the findings indicate a favourable level of digital learning tool utilisation, with greater emphasis on information searching, communication, access to course materials, revision, and examination preparation than on specialised academic databases, virtual learning, and AI-based tools.

Table 3: Extent of Utilisation of Digital Learning Tools (n=200)

S/N	Statement	Mean	Standard Deviation	Decision
1	I use digital tools to access lecture notes and course materials.	3.42	0.71	Agree
2	I use digital tools to search for academic information.	3.51	0.65	Agree
3	I use digital tools to read e-books and electronic journals.	3.12	0.86	Agree
4	I use online platforms to participate in virtual classes.	2.76	0.94	Agree
5	I use digital tools to communicate with lecturers about academic matters.	3.08	0.89	Agree
6	I use digital tools to communicate with classmates about assignments and group work.	3.44	0.72	Agree
7	I use educational videos to understand difficult topics.	3.36	0.76	Agree
8	I use digital tools to complete and submit assignments.	3.28	0.81	Agree
9	I use online resources when preparing for examinations.	3.41	0.73	Agree
10	I use digital applications to organise my study activities.	2.83	0.91	Agree
11	I use online academic databases to obtain research materials.	2.71	0.96	Agree
12	I use AI-based tools to support my learning.	2.85	0.93	Agree
13	I use digital tools for collaborative learning.	3.17	0.84	Agree
14	I use digital tools to revise lessons outside the classroom.	3.35	0.77	Agree
15	I use digital learning tools regularly throughout the semester.	3.18	0.83	Agree
	Grand Mean	**3.16**	**0.82**	**Agree**

Source: Field Survey (2026).

4.4 Influence of digital learning tools on students' academic performance in the selected tertiary institutions

Table 4 shows that respondents generally agreed that digital learning tools positively influence their academic activities and performance, as indicated by the grand mean of 3.38. The highest-rated item was that digital learning tools help respondents access additional learning materials (M = 3.58), followed by obtaining academic information faster (M = 3.54). This suggests that improved access to learning resources and rapid information retrieval are among the major benefits of digital technologies for students. This finding agrees with Umoh (2024), who reported that digital and social media platforms can improve students' access to educational resources. The lowest mean was recorded for improving communication with lecturers (M = 3.18), although it still fell within the "Agree" category. This indicates that digital technologies may be more influential in resource access and information retrieval than in lecturer–student communication. Similarly, Mohammed *et al.* (2026) found that digital technology use among Nigerian higher-education students varies according to the nature and purpose of its application.

The standard deviation values (approximately 0.61–0.89) indicate moderate variation in respondents' opinions. Overall, the grand mean of 3.38 demonstrates that respondents perceived digital learning tools as beneficial to their learning experience, particularly in accessing materials, obtaining information, completing assignments, conducting research, and supporting academic performance. This is consistent with Owan *et al*. (2025), who reported growing acceptance of digital and AI-based technologies for learning and research among Nigerian university students.

Table 4: Influence of Digital Learning Tools on Students' Academic Performance (n=200)

S/N	Statement	Mean	Standard Deviation	Decision
1	Digital learning tools improve my understanding of course topics.	3.41	0.72	Agree
2	Digital learning tools improve my academic performance.	3.38	0.75	Agree
3	Digital learning tools make learning more interesting and engaging.	3.46	0.68	Agree
4	Digital learning tools help me access additional learning materials.	3.58	0.61	Agree
5	Digital learning tools help me complete assignments effectively.	3.42	0.70	Agree
6	Digital learning tools improve my examination preparation.	3.37	0.76	Agree
7	Digital learning tools help me learn at my own pace.	3.35	0.78	Agree
8	Digital learning tools improve my academic research ability.	3.31	0.81	Agree
9	Digital learning tools improve communication with lecturers.	3.18	0.89	Agree
10	Digital learning tools encourage independent learning.	3.43	0.73	Agree
11	Digital learning tools improve collaboration with other students.	3.32	0.82	Agree
12	Digital learning tools help me obtain information faster.	3.54	0.65	Agree
13	Digital learning tools have contributed to better grades.	3.21	0.87	Agree
14	Digital learning tools increase my motivation to study.	3.29	0.83	Agree
15	Digital learning tools have a positive influence on my academic performance.	3.40	0.74	Agree
	Grand Mean	**3.38**	**0.77**	**Agree**

Source: Field Survey, 2026.

4.5 Challenges associated with the use of digital learning tools among tertiary institutions' students in Jalingo

Table 5 shows that respondents agreed that several challenges affect the effective use of digital learning tools, as indicated by the grand mean of 3.18. Unstable electricity supply was the most significant challenge (M = 3.63), followed by the high cost of internet data (M = 3.51) and poor internet connectivity (M = 3.46). These findings indicate that inadequate electricity and unreliable internet services remain major barriers to digital learning. This is consistent with Aiyebelehin *et al*. (2025), who identified access, digital literacy, and technological conditions as important factors influencing students' effective use of digital technologies. Other major challenges included poor network coverage (M = 3.38), the cost of purchasing and maintaining digital devices (M = 3.34), and inadequate ICT facilities (M = 3.29). These findings suggest that financial and infrastructural limitations continue to restrict students' access to digital learning resources. Similarly, Owan *et al.* (2025) noted that technological access and institutional conditions can influence students' adoption and use of digital and AI-supported learning technologies.

Social media and entertainment distractions (M = 3.17), lack of institutional support (M = 3.14), and technical problems during online classes (M = 3.08) were also identified as challenges. However, limited digital skills (M = 2.71), inadequate integration of digital tools by lecturers (M = 2.76), and lack of training (M = 2.88) were less prominent. Overall, the findings suggest that

infrastructural, financial, and technical constraints are more significant barriers than digital skills. Improving electricity supply, internet affordability and connectivity, ICT facilities, and institutional support would therefore enhance students' effective use of digital learning tools.

Table 5: Challenges Associated with the Use of Digital Learning Tools (n=200)

S/N	Statement	Mean	Standard Deviation	Decision
1	Poor internet connectivity limits my use of digital learning tools.	3.46	0.70	Agree
2	High cost of internet data limits my use of digital learning tools.	3.51	0.68	Agree
3	Unstable electricity supply affects my use of digital learning tools.	3.63	0.61	Agree
4	Lack of adequate digital devices limits my use of digital learning tools.	2.84	0.91	Agree
5	Poor network coverage affects access to online learning resources.	3.38	0.75	Agree
6	Limited digital skills make it difficult to use some learning tools.	2.71	0.96	Agree
7	Lack of training affects effective utilisation of digital tools.	2.88	0.89	Agree
8	Inadequate ICT facilities limit digital learning.	3.29	0.79	Agree
9	Lack of technical support affects digital learning.	2.96	0.87	Agree
10	Social media and entertainment distract me during digital learning.	3.17	0.83	Agree
11	Cost of purchasing and maintaining devices is a challenge.	3.34	0.76	Agree
12	Limited access to reliable online academic resources affects learning.	2.89	0.88	Agree
13	Some lecturers do not adequately integrate digital tools into teaching.	2.76	0.93	Agree
14	Technical problems during online classes affect learning.	3.08	0.84	Agree
15	Lack of institutional support limits effective digital learning.	3.14	0.81	Agree
	Grand Mean	**3.18**	**0.83**	**Agree**

Source: Field Survey (2026).

4.6 Strategies adopted to improve effective use of digital learning tools in tertiary institutions in Jalingo

Table 5 shows that respondents agreed that several challenges affect the effective use of digital learning tools, as indicated by the grand mean of 3.18. Unstable electricity supply was the most significant challenge (M = 3.63), followed by the high cost of internet data (M = 3.51) and poor internet connectivity (M = 3.46). These findings indicate that inadequate electricity and unreliable internet services remain major barriers to digital learning. This is consistent with Aiyebelehin *et al*. (2025), who identified access, digital literacy, and technological conditions as important factors influencing students' effective use of digital technologies. Other major challenges included poor network coverage (M = 3.38), the cost of purchasing and maintaining digital devices (M = 3.34), and inadequate ICT facilities (M = 3.29). These findings suggest that financial and infrastructural limitations continue to restrict students' access to digital learning resources.

Similarly, Owan *et al.* (2025) noted that technological access and institutional conditions can influence students' adoption and use of digital and AI-supported learning technologies.

Social media and entertainment distractions (M = 3.17), lack of institutional support (M = 3.14), and technical problems during online classes (M = 3.08) were also identified as challenges. However, limited digital skills (M = 2.71), inadequate integration of digital tools by lecturers (M = 2.76), and lack of training (M = 2.88) were less prominent. Overall, the findings suggest that infrastructural, financial, and technical constraints are more significant barriers than digital skills. Improving electricity supply, internet affordability and connectivity, ICT facilities, and institutional support would therefore enhance students' effective use of digital learning tools.

Table 6: Strategies for Improving the Effective Use of Digital Learning Tools

S/N	Strategies	Mean	Standard Deviation	Decision
1	Institutions should provide reliable and affordable internet access.	3.70	0.58	Agree
2	Institutions should improve ICT facilities.	3.68	0.60	Agree
3	Students should receive regular training on digital learning tools.	3.55	0.67	Agree
4	Lecturers should receive training on digital teaching methods.	3.48	0.72	Agree
5	Institutions should provide reliable electricity.	3.75	0.55	Agree
6	Students should be encouraged to use digital devices for academic purposes.	3.47	0.71	Agree
7	Institutions should provide access to digital libraries and databases.	3.52	0.68	Agree
8	Technical support should be available to students and lecturers.	3.44	0.73	Agree
9	Institutions should develop effective e-learning platforms.	3.49	0.69	Agree
10	Government and institutions should reduce internet costs for students.	3.61	0.63	Agree
11	Digital learning should be integrated into regular classroom teaching.	3.58	0.65	Agree
12	Institutions should organise workshops on responsible digital technology use.	3.42	0.75	Agree
13	Students should receive guidance on responsible use of AI tools.	3.39	0.77	Agree
14	Institutions should regularly assess students' digital learning needs.	3.36	0.79	Agree
15	Stronger institutional policies should support digital learning.	3.45	0.72	Agree
	Grand Mean	**3.52**	**0.68**	**Agree**

Source: Field Survey (2026).

Table 6 shows that respondents agreed with the proposed strategies for improving the effective use of digital learning tools, as indicated by the grand mean of 3.52. The highest-rated strategy was the provision of reliable electricity (M = 3.75), followed by reliable and affordable internet access (M = 3.70) and improved ICT facilities (M = 3.68). This indicates that adequate infrastructure remains essential for effective digital learning. This finding is consistent with Owan *et al*. (2025), who emphasized the importance of technological access and supportive conditions in promoting the adoption of digital and AI-supported learning technologies.

Respondents also supported reducing internet costs (M = 3.61), integrating digital learning into regular classroom teaching (M = 3.58), and providing regular training for students (M = 3.55). Access to digital libraries and databases (M = 3.52), effective e-learning platforms (M = 3.49), and training for lecturers in digital teaching methods (M = 3.48) were also highly rated. Aiyebelehin *et al*. (2025) similarly identified digital literacy and awareness as important factors influencing students' effective use of emerging digital technologies. Overall, the grand mean of 3.52 indicates strong agreement that improved electricity and ICT infrastructure, affordable internet, digital resources, regular training, lecturer capacity development, and institutional support are important for enhancing digital learning among students. These measures can help reduce existing barriers and promote more effective and sustainable use of digital learning tools.

Test of Hypothesis: *There is no significant effect of digital learning tools on students' academic performance among tertiary institution students in Jalingo, Taraba State.*

Table 7 indicates a Chi-square value of 18.64 with 4 degrees of freedom and a p-value of 0.001. Since the p-value is less than 0.05, the null hypothesis was rejected. Therefore, there is a statistically significant relationship between digital learning tool utilisation and students' academic performance among tertiary institution students in Jalingo, Taraba State. This finding suggests that the use of digital learning tools is associated with students' academic performance. It agrees with Akpen *et al.* (2024), who found that online learning can positively influence students' performance and engagement. Similarly, Onah *et al.* (2024) reported positive effects of web-based learning tools on students' academic achievement. The finding therefore highlights the importance of effective integration and purposeful use of digital technologies in tertiary education.

Table 7: Chi-Square Test of the Relationship between Digital Learning Tool Utilisation and Academic Performance

Variables	χ^2	df	p-value	Decision
Digital learning tool utilisation and academic performance	18.64	4	0.001	Significant

Significant at $p < 0.05$

5.0 Conclusion and Recommendations

5.1 Conclusion

The study concluded that digital learning tools are widely used by tertiary students in Jalingo, particularly smartphones, WhatsApp, YouTube, Microsoft Office, and laptops. Their use supports access to learning materials, information searching, independent learning, and examination preparation, thereby contributing positively to academic performance. However, challenges such as unstable electricity, high internet costs, poor connectivity, and inadequate ICT facilities limit effective utilisation. The study therefore recommends improved electricity and internet access, better ICT infrastructure, digital skills training, and stronger integration of digital learning into teaching to enhance students' academic outcomes.

5.2 Recommendations

The study recommends improving ICT infrastructure, ensuring reliable electricity and affordable internet, providing regular digital skills training, integrating digital learning into classroom teaching, and strengthening government and institutional funding and technical support for sustainable digital education.

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