AFRICAN JOURNAL OF THEORY AND PRACTICE OF EDUCATIONAL ASSESSMENT (AJTPEA)
Hard Print ISSN: 2545-5834
e-Print ISSN: 2992-362X
VOL. 14, JUNE, 2025

BENEFITS OF INTEGRATING TECHNOLOGY IN ASSESSMENT AND RESEARCH PRACTICES IN TWO SELECTED NIGERIAN UNIVERSITIES

https://doi.org/10.83151/bs6r-yz64

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Abstract:
In this age of technological advancement, various technological tools exist, and more are still being developed to enhance teaching, learning, assessment, and research. These tools, though, are difficult for institutions to acquire for staff use; however, some staff have acquired them for personal use and to enhance their proficiency. This paper set out to investigate the perceived benefits of technology integration in assessment and research by lecturers. Forty-eight out of the population of 134 lecturers responded to the questionnaire. Frequency counts and simple percentages were used to answer the research questions. The result revealed that the lecturers agreed to the use of most of the listed technology tools for assessment, as well as for research. Furthermore, all the lecturers acceded to the listed benefits of technology tools in assessment and research. The paper, therefore, concluded that technology tools are essential for both research and assessment since they are of great benefit to both lecturers

and students. The paper therefore recommended that lecturers should be assisted to acquire technology tools for assessment and research. Based on the benefits to be derived, they should also be trained in the use of the technology tools.
Key Words: Assessment, Research, Technology Integration, Technology Tools

Introduction:

Assessment and research are vital components of education. When students are taught, they must be assessed to quantify the extent of mastery of knowledge and understanding that has taken place. Research has also been continually conducted to generate new knowledge and confirm old notions. Before this digital era, most assessments and research practices were very tedious because they were carried out manually. However, technology has come to alleviate these efforts. Technology integration is the use of technology to streamline processes in that area. According to UNSW Sydney (2024), technology integration in education affects the whole curriculum. It is used in all aspects of assessment, including presentation of content and tasks, individual and group assessment of students, and providing feedback and sharing. Technology integration provides the ease of managing assessments. Technology is said to be integrated when it is used to enhance students' learning experiences. Technology is generally viewed as a technique that leads to the ease of doing things. Technology integration in assessment and research practices, therefore, eases the process and practice of assessment and research.

Linnenluecke et al. (2020) stated that technology simplifies access to internet databases, academic publications, and specialised software used for performing literature reviews, data collection, and analysis. In their own contribution, Ozgur et al. (2021) noted that improvement in data analysis accuracy and efficiency is assured when one is proficient with statistical tools like SPSS, MATLAB, or Python. These technologies greatly enhance speed, accuracy, and proficiency in research and assessment.

Assessment is the evaluation of the status or worth of something, while research is an enquiry into something to establish facts. Assessment is carried out to determine whether an individual has learnt what is taught and to evaluate the practical performance of the learnt material. According to Andural, Aende, and Agada (2016), assessment offers a methodology of measuring performance and using those findings to improve the success of the persons involved. Different methods are used in assessment to determine if the correct material is learnt and the level to which it is learnt. Technology, when integrated, therefore assists greatly in assessment and research. When technology is integrated into assessment and research, it enhances ease regardless of time and distance. This means that research can be carried out irrespective of time and distance. Generative Pretrained Transformer (GPT) has been developed (Popenici & Kerr, 2017) for natural language processing. Now GPT4 is used in

research and assessment. This is a kind of generative Artificial Intelligence (AI) that eases the stress of research (Brown et al, 2020).

Mobile phones are used in schools by students for academic work. Mobile phone technology can also be used for assessment and research as it can receive and send information orally, in writing, or graphically. It is a cheap tool that is readily available (Mbaga et al, 2019). Aliyu, Isa and Tiough (2025) explored the prospects of mobile learning technologies in enhancing agricultural education curricula in Kano University of Science and Technology, Wudil, and found that the mobile learning technologies have the potential to significantly improve the flexibility and accessibility of education, allowing students to learn at their own pace and from diverse locations, especially in field-based agricultural settings. These technologies can also be used for assessing students in practical agriculture while they are on their various farms. Research can also be done using mobile learning technologies.
Tiough (2020) advocated for the use of emerging technologies to revolutionize building construction in Nigeria. A study highlighted technologies like Building Information Modelling (BIM), 3D Printing, and Drones, among other technologies. These technologies can be used to practically assess the study and practice of building construction, as well as assist in the research on building construction. Drones can also be used to access and assess distant objects and difficult-to-reach areas to acquire information that is used in assessment as well as research. So, their integration into assessment and research will ease the process.

Many assessment technology tools exist and are being used by different individuals according to preference and acquired knowledge. According to Uduak et al. (2023), online formative assessments are becoming increasingly popular in our learning spaces and are constantly adapted to, owing to the rising tide of technology and its transforming role in assessment practices. Uduak et al. (2023) also mentioned some online formative assessment tools to include – Hurix, Socrative, Mentimeter, Poll Everywhere, Kahoot, Test Gorilla, Google Forms, Moodle, Formative, Edpuzzle, and SMART Lab, among others. Google Forms have been used to collect data during research and also carry out assessments (Dyer, 2024). According to Dyer (2024) and the Indeed Editorial Team (2025), some of the technology tools being used by lecturers for assessment include Moodle, which focuses on providing educators with multiple management and learning assessment opportunities. For example, teachers may use the Learning Management System (LMS) or Virtual Learning Environment (VLE) when engaging with students online and creating dynamic online tests or websites. Teachers may then share this information with parents when tracking student success. Dyer (2024) also stated that Kahoot is a game-based classroom response system that lets you create quizzes using internet content. Socrative uses exercises and games to engage students with a topic and makes learning fun (Deignan, 2026). Poll Everywhere lets you create a feedback poll or ask questions and see results in real time. It allows students to respond in various ways. With open-ended questions, you can capture data and spin up tag clouds to aggregate responses (Dyer, 2024). Quizlet has the capacity to let you make

flashcards, tests, quizzes, and study games that are mobile-friendly, while Plickers as a technology tool allows you to collect real-time formative assessment data without the need for student devices (Deignan, 2026). Dyer 2024 further states that Google Forms is a part of the Google Suite. It lets you create quizzes, polls, and surveys and see answers in real time. SurveyMonkey is another technology tool for research and assessment. It is helpful for online polls and surveys. Quizlet, as a technology tool, lets you make flashcards, tests, quizzes, and study games that are mobile-friendly. According to EssayGrader (2024), another technology tool is Edpuzzle which helps you use video (your own, or one from Khan Academy, YouTube, and more) to track student understanding. Flip as a technological tool lets students use 15-second to 5-minute videos to respond to prompts. Teachers and peers can provide feedback. Furthermore, Crowdsignal allows one to create online polls, quizzes, and questions. Students can use smartphones, tablets, and computers to provide their answers, and information can be culled for reports. Edulastic - Allows you to make standards-aligned assessments and get instant feedback. ProProfs - Helps you make quizzes, polls, and surveys. Poll Maker - Offers unique features, like allowing multiple answers to one question. Survey Hero - Designed to build questionnaires and surveys (Dyer, 2024; Deignan, 2026; EssayGrader, 2024).

These technological tools identified above are among the tools that, if integrated in assessment and research, would save time and solve the problem of distance to achieve desired aims. Assessment and research are very necessary in an educational setup. Assessment and research without the use of technology becomes very laborious and may take longer periods and cost more. Technology, if properly integrated in the teaching-learning process, would enhance students' learning experiences, assessment, teaching, and research. Despite its enormous prospects, its optimal use in Nigerian universities raises concerns that call for investigation. This study is therefore set to determine if lecturers in our universities use technology tools in assessment and research in their institutions.

Research questions

The research was guided by the following research questions:

1. What technology tools do university lecturers use in the assessment of their students?
2. What technology tools do university lecturers in Nigeria use in carrying out research?
3. What perceived benefits could be derived from the use of these technologies?

Methodology

The study employed a descriptive survey design using structured questionnaires to collect data. The questionnaires were sent to the respondents through Google Forms to ensure a quick return. Survey research design was considered appropriate for the study because it considers one group of people or items to be studied by collecting and analysing data from only a few people or items that are considered representative of the entire group (Olaitan & Nwoke, 1988). A total population of 134 lecturers from the three faculties was used, which

comprised 30 from the Faculty of Technology and Industrial Studies, MOAUM; 69 from the Faculty of Education, MOAUM, and 35 from the Faculty of Science and Technology Education, ADUSTECH Wudil. The questionnaire for this work was distributed through the use of Google Forms. Out of the envisaged population, 48 lecturers completed the survey form, comprising 20 from the Faculty of Technology and Industrial Studies, MOAUM; 16 from the Faculty of Education, MOAUM, and 12 from the Faculty of Science and Technology Education, ADUSTECH Wudil. The questionnaire was divided into three sections according to the research questions. Section A identified technology tools used by lecturers in the assessment of students. Section B identified technology tools used by lecturers in carrying out research, while Section C identified the benefits lecturers derived from the use of the technology tools. Respondents were to answer the questionnaire using a four-point rating scale - strongly agree (4 points), agree (3 points), disagree (2 points), and strongly disagree (1 point). Data were collected from the faculties of Technology and Industrial Studies and the faculty of Education, from Moses Orshio Adasu University, Makurdi (MOAUM), as well as from the faculty of Science and Technology Education, Aliko Dangote University of Science and Technology, Wudil, Kano State, using Google Forms. Simple percentages were used to answer the research questions. 50% is the acceptable cut-off mark for acceptance.

Results:
The research questions were answered using the following tables:

Research Question 1: What technology tools do university lecturers in Nigeria use in the assessment of their students?

Table 1: Percentage responses of lecturers on the use of technology tools in the assessment of students.

Technology Tools	N	%SA	%A	%D	%SD
1. Moodle	48	50	25	25	0
2. Kahoot	48	0	-	100	0
3. Socrative	48	0	25	75	0
4. Poll Everywhere	48	0	50	50	0
5. Quizlet	48	0	100	0	0
6. Plickers	48	0	50	50	0
7. Google Forms	48	50	50	0	0
8. Survey Monkey	48	50	50	0	0
9. Qualtrics	48	0	75	25	0
10. Edpuzzle	48	0	25	75	0
11. Flip grid	48	25	25	50	0

12. Crowdsignal	48	0	25	75	0
13. Edulastic	48	0	75	25	0
14. ProProfs	48	0	25	75	0
15. Poll Maker	48	-	25	75	0
16. Survey Hero	48	25	50	25	0

From Table 1, it is seen that the survey on technology tools used by lecturers for assessment shows that 75% of the lecturers agreed that they use Moodle for assessment, while 25% disagreed. 100% never used Kahoot, while only 25% of surveyed lecturers used Socrative. 50% agreed that they use Poll Everywhere, and 100% also agreed that they use Quizlet for assessment. 50% agreed to the use of Plickers, while 100% agreed to the use of Google Forms. Similarly, 100% stated that they use SurveyMonkey for the assessment of students. Also, 75% stated that they used Qualtrics, while only 25% used Edpuzzle for assessment. 50% use Flipgrid, while only 25% use Crowdsignal. It is also noticed that 75% of the lecturers surveyed use Edulastic and Survey Hero, while 25% also use ProProfs and Poll Maker for assessment. From the listed technology tools for assessment, it can be seen that technology tools like Moodle, Poll Everywhere, Quizlet, Plickers, Google Forms, Survey Monkey, Qualtrics, Flip Grid, Edulastic and Survey Hero are more commonly used by lecturers surveyed. It is also seen that tools like Kahoot, Socrative, Edpuzzle, Crowdsignal, ProProfs and Poll Maker are not much used.

Research Question 2: What technology tools do university lecturers in Nigeria use in carrying out research?

Table 2: Percentages of responses on lecturers' use of technology tools in research.

Technology Tools	N	%SA	%A	%D	%SD
1. Slack	48	0	25	75	0
2. Zoom	48	25	50	25	0
3. Padlet	48	0	75	25	0
4. Trello	48	0	50	50	0
5. Evernote	48	0	50	50	0
6. Lab Automation	48	0	75	25	0
7. Data Analytics Platforms	48	25	75	0	0
8. AI and Machine Learning	48	0	75	25	0

From Table 2, it is seen that 75% of lecturers agreed to the use of these listed technology tools for research – Zoom, Padlet, Lab Automation, and AI and Machine Learning, while 100% of the lecturers agreed to the use of Data Analytics Platforms for research. It is seen that 50% of lecturers agreed that they used Trello and Evernote for research, while 50%

disagreed. 75% of lecturers have never used Slack for research. From this table, therefore, most surveyed lecturers use most of the listed technology tools for research.

Research Question 3: What benefits could be derived from the use of these technologies?

Table 3: Percentage responses of lecturers on the benefits of using technology tools for assessment and research.

Technology Tools	N	%SA	%A	%D	%SD
1. Technology tools are easy to use	48	75	25	0	0
2. Technology tools are cost-effective	48	25	75	0	0
3. Use of Tech tools can serve many people at once	48	75	25	0	0
4. No time or space constraints	48	50	50	0	0
5. Saves time	48	75	25	0	0
6. Data collection is made easy	48	75	25	0	0
7. Assessments are marked and recorded in real time	48	75	25	0	0
8. Data analysis is made easy	48	75	25	0	0
9. No restriction on time or place of administration	48	75	25	0	0
10. Respondents' location does not affect administration	48	50	50	0	0

From Table 3 on the benefits of technology tools for assessment and research, all the surveyed lecturers (100%) agreed that technology tools are easy to use, cost-effective, serve many people at once, have no time or space constraints, save time, and data collection is made easy. Also, assessments are marked and recorded in real time, and data analysis is made easy, while there is no restriction on the time or place of administration of the tools. Furthermore, respondents' location does not affect tool administration. This therefore shows that the surveyed lecturers agreed with all the listed benefits of technology tools for research and assessment.

Discussion

From Table 1, it is evident that most surveyed lecturers have attested to the use of technology tools for assessing students. This is in line with Famade and Takema (2025), who stated that lecturers are aware of technology tools integration in teaching and learning and have used them in education. It therefore means that the lecturers are getting some benefits from the use of the technology tools.

From Table 2, it is evident that lecturers use technology tools for research, as a greater number agreed that they have used the listed tools. This is in line with Anele et al (2024), who stated that technology tools are necessary for learning and research. Anele et al (2024) further stated that students from Keffi tried to use digital tools; however, they lamented the lack of proper funding in schools concerning tools for research, so that staff and students can access the tools.

Findings from Table 3 show that all the surveyed lecturers agreed with all the suggested benefits of technology tools integration in assessment and research. Technology enhances learning, facilitates easy data collection, and analysis. This is in line with Linnenluecke et al (2020), who stated that technology makes it easier to access internet databases, academic publications, and specialised software used for performing literature reviews, data collection, and analysis.

Conclusion and Recommendations

From this study, it is seen that technology integration in education greatly enhances research and assessment. Technology tools make it easier to reach people and places that could have been difficult or near impossible in real time. Use of technology tools gives us access to large volumes of data for reference and comparison. Since many lecturers have used some of the technology tools for research and assessment and have also agreed on the multiple benefits of their use, we therefore recommend that:

1. Lecturers should be assisted to acquire technology tools for assessment and research since most of them acquired the tools on their own without assistance from their institutions.
2. More training should be given to lecturers in the use of the technology tools for assessment and research.
3. The benefits of technology tools integration in assessment and research should be publicised so that more lecturers would desire to acquire skills to use the technology tools for assessment and research.

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