



ASSESSING THE EFFECTIVENESS OF LEARNING ANALYTICS FEATURES IN LEARNING MANAGEMENT SYSTEMS FOR TRACKING STUDENT PROGRESS IN EDUCATIONAL INSTITUTIONS IN OGUN STATE, NIGERIA

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Abstract

This study examined the effectiveness of learning analytics features in Learning Management Systems (LMS) for tracking student progress in tertiary institutions in Ogun State, Nigeria. Five research questions were raised and answered. The study adopted a descriptive survey research design. The population comprised students and lecturers in selected tertiary institutions, from which an appropriate sampling technique was selected. Data were collected using a structured questionnaire, which was validated by experts, and its reliability was established. The data collected were analyzed using mean and standard deviation to answer the research questions. The findings revealed that learning analytics features are available and moderately utilized in higher institutions. The study further showed that learning analytics tools are effective in tracking student progress, as they help identify at-risk students, monitor assignment completion rates, and analyze performance trends. The results also indicated that learning analytics features significantly improve students' academic performance and engagement by promoting self-regulated learning, motivation, and better study habits. However, the study identified major challenges hindering effective utilization, including poor internet connectivity, inadequate technical skills, lack of training, insufficient institutional support, and concerns about data privacy. It was recommended that educational institutions improve their digital infrastructure and provide regular training for lecturers and students.

Keywords: learning analytics features, LMS, digital infrastructure, academic engagement

Introduction

Learning in the twenty-first century has increasingly become intertwined with digital technologies, reshaping how educational institutions deliver instruction, engage learners, and evaluate academic progress. The use of digital media in learning is an effort to grow student interest, motivation, attractiveness, digital literacy, and student learning outcomes (Badmus, 2025). Globally, the rapid expansion of digital learning environments has transformed traditional pedagogical models, allowing educators to adopt data-driven



approaches to teaching and learning (Adebayo, 2019). Learning Management Systems (LMS) have emerged as one of the most influential technological innovations in education, providing structured platforms that integrate learning content, assessments, and communication. Central to modern Learning Management Systems is the incorporation of learning analytics data-driven features that track and interpret learners' behavioural patterns to enhance teaching and learning outcomes (Okonkwo & Eze, 2021).

Learning analytics, broadly defined as the collection, analysis, and interpretation of student data in digital learning environments, has gained significant traction across the world. According to the International Society for Technology in Education (ISTE, 2021), learning analytics allows institutions to make evidence-based decisions by identifying students' learning difficulties, predicting performance trends, and informing targeted interventions. In advanced educational systems, such as those in the United States, Canada, the United Kingdom, and parts of Asia, learning analytics has become a core element of instructional planning and academic monitoring (Adeyemi & Ogungbemi, 2020).

The growing interest in learning analytics is partly driven by global shifts toward personalized and adaptive learning. As UNESCO (2022) observed, technology-enhanced education is increasingly leveraging student data to create individualized learning pathways that respond to learners' strengths, weaknesses, and preferences. Learning Management Systems platforms like Moodle, Blackboard, Canvas, and Google Classroom now include dashboards that show attendance patterns, assignment submissions, quiz performance, and engagement activities. These features are designed to help educators detect early warning signs of academic decline and support students more effectively (Olatunji & Bello, 2022).

Furthermore, international research highlights the transformative potential of learning analytics in improving educational outcomes. Studies conducted in Europe and North America have shown that when Learning Management Systems analytics are effectively utilized, educators can provide timely feedback, redesign ineffective instructional activities, and enhance learner participation (Ferguson, 2020). In higher institutions, learning analytics has enabled administrators to monitor student retention rates and develop intervention strategies to reduce dropout rates. These successes underscore the importance of analytics-enabled Learning Management Systems as a critical tool for modern education (Adeyemi & Ogungbemi, 2020).

Despite these global advancements, through a blending of visual, audio, audiovisual, and interactive elements, ICT-Based instructions are used to present information and engage learners in a variety of ways (Durojaiye, Badmus & Bello (2025). The adoption and effective use of learning analytics in many developing countries, including Nigeria, remain limited. According to Adewale and Yusuf (2021), although Nigerian educational institutions increasingly rely on digital platforms due to technological changes and the impacts of the COVID-19 pandemic, the full potential of Learning Management Systems analytics features is yet to be realized. Many schools use Learning Management Systems mainly for



uploading materials and conducting assessments, while the analytics component which could significantly enhance instructional decision-making remains underutilized (Adewale and Yusuf, 2021).

The COVID-19 pandemic, in particular, brought renewed attention to the need for technology-driven learning and real-time tracking of student engagement (Badmus, 2022). The prolonged closure of schools forced institutions worldwide to adopt digital learning platforms. Nigeria was no exception. Universities, polytechnics, and even some secondary schools adopted Moodle, Google Classroom, and other Learning Management Systems to ensure learning continuity (Adeyemi & Ogungbemi, 2020). However, while the rapid shift to online learning created awareness about the importance of Learning Management Systems, the focus remained largely on basic functionalities, with less emphasis on learning analytics as a tool for monitoring academic progress.

Across sub-Saharan Africa, several challenges influence the adoption of learning analytics, including inadequate digital infrastructure, limited digital literacy, inconsistent power supply, and financial constraints (World Bank, 2023). These conditions often restrict educators' ability to use Learning Management Systems to its fullest capacity. Moreover, the lack of professional development opportunities prevents many Nigerian teachers from understanding how to interpret analytics reports and use them to inform pedagogical choices (Udo & Yakubu, 2023).

In Ogun State, one of Nigeria's most educationally vibrant states, Learning Management Systems usage has been gradually increasing across universities, colleges of education, polytechnics, and some private secondary schools. These platforms are used for uploading course content, conducting tests, managing assignments, and facilitating virtual discussions (Udo & Yakubu, 2023). However, inquiries and preliminary studies suggest that the analytics features embedded in these Learning Management Systems, such as performance dashboards, activity logs, learner progress trends, engagement heatmaps, and predictive alerts, are not being fully exploited (Adeyemi & Ogungbemi, 2020). The effectiveness of learning analytics features in any learning management system depends not only on their availability but also on users' ability to understand and apply the insights generated. In Ogun State, factors such as teacher digital competence, institutional support, bandwidth availability, and the overall attitude towards technology greatly influence how Learning Management Systems analytics are used. If these analytics tools remain underutilized, institutions may continue to struggle with issues such as delayed feedback, unnoticed academic decline, poor student engagement, and weak instructional planning (Bello, Salami & Adeoye, 2024).

Monitoring student progress is a fundamental requirement of any educational system. Traditionally, teachers in Nigeria have relied on manual record-keeping, summative assessments, and face-to-face observations to evaluate student learning. While these methods are still relevant, they are limited in their ability to provide real-time or predictive insights. Learning analytics addresses this gap by offering



continuous and data-driven monitoring that can help educators intervene before students fail or drop out. This modern approach is particularly useful in blended and online learning contexts, which are becoming more common. The era where teacher conveys the learning content to the learner via writing on the board, along with verbal explanations, and sometimes draws on the board to illustrate the information to the learners has reduces to minimal level (Badmus & Ajewole, 2025). This study, therefore, examines a timely and relevant enquiry into the role of LMS analytics in advancing education in Ogun State.

Statement of the Problem

Despite the recognized potential of Learning Management Systems (LMS) utilizing learning analytics to enhance academic monitoring, there is growing concern that these features are not being effectively utilized within many educational institutions in Ogun State. Preliminary observations and existing literature suggest that most institutions in Ogun State use Learning Management Systems primarily for uploading materials, conducting assessments, and managing coursework, while the analytics components remain largely underexplored. Many educators lack adequate training to interpret data from analytics dashboards, such as student activity logs, progress charts, predictive alerts, or engagement patterns. As a result, critical information that could help teachers identify struggling students, improve learning experiences, or adjust instructional strategies is often overlooked. This underutilization raises questions about whether Learning Management Systems analytics are truly contributing to improved monitoring of student progress in the state.

Furthermore, there is a noticeable gap in empirical research focusing specifically on how effectively learning analytics are used in Ogun State's educational institutions. Although several studies in Nigeria have examined ICT integration, digital learning adoption, and e-learning challenges, very few have addressed the specific functionality and effectiveness of analytics features within Learning Management Systems. This lack of localized evidence creates uncertainty regarding the real impact of analytics tools on learner monitoring and academic performance within the state's unique educational context. Additionally, infrastructural challenges such as unstable internet connectivity, limited access to digital devices, inadequate institutional support, and varying levels of digital literacy among teachers and students further raise concerns about the ability of institutions to fully leverage analytics-driven learning. These challenges may significantly hinder the effectiveness of Learning Management Systems analytics features, yet the extent of their impact in Ogun State remains unclear.

Consequently, there is a pressing need to assess whether learning analytics features in Learning Management Systems are being used as intended, whether they provide meaningful data for tracking student progress, and the extent to which educators and institutions in Ogun State are equipped to utilize them effectively. This study, therefore, seeks to fill the identified gap by evaluating the effectiveness of learning



analytics features in Learning Management Systems for tracking student progress in educational institutions across Ogun State.

Purpose of the Study

The main purpose of this study was to assess the effectiveness of learning analytics features embedded in Learning Management Systems for tracking student progress in educational institutions in Ogun State. Specifically, the study;

- i. examined the extent to which learning analytics features are utilized in Learning Management Systems in educational institutions in Ogun State.
- ii. examined the effectiveness of learning analytics features in tracking students' academic progress
- iii. examined the influence of learning analytics on students' academic engagement
- iv. identify the factors that hinder the use of learning analytics features in Learning Management Systems in Ogun State educational institutions

Research Questions

The following research questions guided the study:

- i. To what extent are learning analytics features utilized in Learning Management Systems in educational institutions in Ogun State?
- ii. To what extent do learning analytics features improve the accuracy and timeliness of tracking students' academic progress in Ogun State?
- iii. To what extent does the use of learning analytics features influence students' academic engagement in higher institutions in Ogun State?
- iv. What are the factors that hinder the use of learning analytics features in Learning Management Systems in Ogun State?

Methodology

The study adopted a descriptive survey research design. The descriptive survey design is suitable for this study as it enables the assessment of respondents' perceptions, experiences, and opinions regarding the effectiveness of learning analytics features embedded in Learning Management Systems (LMS) for tracking student progress.



The population of the study was 400, comprising 320 undergraduate students and 80 academic staff (lecturers) who make use of Learning Management Systems in the Federal College of Education, Abeokuta (FCE Abeokuta) and the Federal University of Agriculture, Abeokuta (FUNAAB), Ogun State. Using (50%) of the population, the sample comprised 200 respondents, consisting 160 undergraduate students and 40 lecturers, drawn from the two selected institutions where Learning Management Systems are actively used.

A multi-stage sampling technique was adopted for the study. Purposive sampling was used to select Federal College of Education, Abeokuta and Federal University of Agriculture, Abeokuta because both institutions utilize LMS platforms for teaching and learning. Stratified sampling was employed to divide respondents into two strata: students and lecturers. Simple random sampling was used to select respondents proportionately from each stratum. The distribution of the sample is presented as follows

This sampling technique was adopted to ensure adequate representation of both institutions and respondent categories, thereby enhancing the validity and reliability of the findings. The instrument used for data collection was a structured questionnaire titled “Learning Analytics Features and Student Progress Tracking Questionnaire (LAFSPTQ)”. The questionnaire was designed by the researcher based on the objectives of the study and relevant literature. The instrument was divided into five sections: Section A, B, C, D, and E. Section A comprised the demographic information of the respondents (institution, status, gender, years of LMS usage). Section B was structured on the availability and usage of Learning Management Systems in higher institutions. Section C focused on learning analytics features in LMS (dashboards, progress reports, performance alerts, feedback tools). Section D centred on the effectiveness of learning analytics features for tracking student academic progress, while Section E challenges associated with the use of learning analytics features in LMS. The questionnaire items were structured on a five-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1). A total of 200 copies of the questionnaire were administered to respondents.

To ensure the validity of the instrument, the questionnaire was subjected to face and content validity. Copies of the drafted questionnaire were presented to experts in Educational Technology, Measurement and Evaluation, and Computer Science Education. Their suggestions and corrections were incorporated to ensure that the items adequately covered the variables under investigation and were clearly worded, relevant, and suitable for the study.

The reliability of the instrument was determined using the Cronbach Alpha method. A pilot study was conducted using 30 respondents drawn from an institution outside the study area but with similar characteristics to the study population. The data obtained were analyzed, and a reliability coefficient of 0.82 was obtained, indicating that the instrument was reliable and suitable for the study.



The researcher obtained permission from the authorities of the selected institutions before administering the questionnaire. The questionnaires were administered personally with the assistance of trained research assistants. Respondents were adequately briefed on the purpose of the study, and confidentiality of responses was assured. The completed questionnaires were collected immediately and within a specified time frame to ensure a high retrieval rate.

Data collected were coded and analyzed using both descriptive and inferential statistical tools. Descriptive statistics such as frequency counts, percentages, mean scores, and standard deviations were used to answer the research questions

Results

Research Questions Analysis

Research Question 1: To what extent are learning analytics features utilised in Learning Management Systems in educational institutions in Ogun State?

Table 1: Utilization of Learning Analytics Features

S/N	Item	SA (F/%)	A (F/%)	D (F/%)	SD (F/%)	Mean	Std. Dev.
1	LMS provides dashboards for tracking student activities.	82 (41.0%)	70 (35.0%)	30 (15.0%)	18 (9.0%)	3.08	0.96
2	Attendance tracking features are available.	76 (38.0%)	74 (37.0%)	32 (16.0%)	18 (9.0%)	3.04	0.95
3	Assessment analytics are regularly used.	80 (40.0%)	68 (34.0%)	34 (17.0%)	18 (9.0%)	3.05	0.96
4	LMS generates performance reports.	85 (42.5%)	72 (36.0%)	25 (12.5%)	18 (9.0%)	3.12	0.95



5	Both students and lecturers utilize analytics tools.	78 (39.0%)	70 (35.0%)	32 (16.0%)	20 (10.0%)	3.03	0.97
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Weighted Mean = 3.06

Table 1 shows that items 1, 2, 3, 4, and 5 recorded mean values of 3.08, 3.04, 3.05, 3.12, and 3.03, respectively. These mean values are all above the benchmark value of 2.50, indicating a high level of agreement among respondents that learning analytics features are available and utilized in the selected institutions. Specifically, 41.0% of the respondents strongly agreed and 35.0% agreed that LMS platforms provide dashboards for tracking student activities. This suggests that institutional LMS platforms are equipped with analytics interfaces that allow monitoring of student engagement and participation.

Likewise, 38.0% strongly agreed and 37.0% agreed that attendance tracking features are available, showing that LMS tools support digital monitoring of class participation. Furthermore, 40.0% strongly agreed and 34.0% agreed that assessment analytics are regularly used, indicating that institutions utilize analytics to evaluate assignment submissions and test performance. Similarly, 42.5% strongly agreed and 36.0% agreed that LMS generates performance reports, demonstrating that reporting tools are functional and accessible. In addition, 39.0% strongly agreed and 35.0% agreed that both students and lecturers utilize analytics tools, confirming active engagement with the available features. The weighted mean of 3.06 confirms that learning analytics features are not only available but are moderately and consistently utilized in the selected tertiary institutions in Ogun State.

Research Question 2: To what extent do learning analytics features improve the accuracy and timeliness of tracking students' academic progress in Ogun State?

**Table 2: Effectiveness of Learning Analytics in Tracking Progress**

S/N	Item	SA (F/%)	A (F/%)	D F/%)	SD (F/%)	Mean	Std. Dev.
6	Analytics help identify at-risk students.	90 (45.0%)	68 (34.0%)	24 (12.0%)	18 (9.0%)	3.15	0.93
7	LMS tracks assignment completion rates.	85 (42.5%)	72 (36.0%)	25 (12.5%)	18 (9.0%)	3.12	0.95
8	Performance trends can be monitored.	88 (44.0%)	70 (35.0%)	24 (12.0%)	18 (9.0%)	3.14	0.94
9	Feedback mechanisms improve monitoring.	80 (40.0%)	76 (38.0%)	26 (13.0%)	18 (9.0%)	3.09	0.95
10	Real-time tracking enhances intervention.	92 (46.0%)	66 (33.0%)	24 (12.0%)	18 (9.0%)	3.16	0.92
Weighted Mean = 3.13							

Table 2 reveals that items 6, 7, 8, 9, and 10 recorded mean values of 3.15, 3.12, 3.14, 3.09, and 3.16, respectively. Since all mean scores are above the criterion mean of 2.50, this indicates strong agreement that learning analytics features are effective in tracking student progress. Specifically, 45.0% of respondents strongly agreed, and 34.0% agreed that analytics help identify at-risk students. This demonstrates that analytics systems provide early warning signals for academic intervention.

Similarly, 42.5% strongly agreed, and 36.0% agreed that LMS tracks assignment completion rates, showing that lecturers can monitor submission patterns and student consistency. Furthermore, 44.0% strongly agreed, and 35.0% agreed that performance trends can be monitored over time, indicating that analytics support longitudinal academic tracking. In addition, respondents agreed that feedback mechanisms improve monitoring and that real-time tracking enhances timely intervention strategies. The weighted mean of 3.13, therefore, confirms that learning analytics features are effective tools for tracking and managing student academic progress.



Research Question 3: To what extent does the use of learning analytics features influence students' academic engagement in higher institutions in Ogun State?

Table 3: Influence on Academic Performance and Engagement

S/N	Item			SA (F/%)	A (F/%)	D (F/%)	SD (F/%)	Mean	Std. Dev.
11	Analytics	improve	academic performance.	86 (43.0%)	71 (35.5%)	25 (12.5%)	18 (9.0%)	3.13	0.94
12	Students become more engaged.			83 (41.5%)	74 (37.0%)	27 (13.5%)	16 (8.0%)	3.11	0.93
13	LMS	feedback	motivates learners.	85 (42.5%)	69 (34.5%)	28 (14.0%)	18 (9.0%)	3.10	0.96
14	Monitoring	improves	study habits.	88 (44.0%)	70 (35.0%)	24 (12.0%)	18 (9.0%)	3.14	0.94
15	Analytics promote self-regulated learning.			84 (42.0%)	72 (36.0%)	26 (13.0%)	18 (9.0%)	3.11	0.95
Weighted Mean = 3.12									

Table 3 presents the responses on the influence of learning analytics features on students' academic performance and engagement. The results show that items 11, 12, 13, 14, and 15 recorded mean scores of 3.13, 3.11, 3.10, 3.14, and 3.11 respectively. All the mean values are above the benchmark mean of 2.50, indicating that respondents generally agreed that learning analytics features positively influence students' academic engagement. Specifically, 43.0% of the respondents strongly agreed and 35.5% agreed that analytics improve academic performance, while 12.5% disagreed and 9.0% strongly disagreed. This suggests that the use of analytics tools helps students track their academic progress and improve their learning outcomes.

Similarly, 41.5% of the respondents strongly agreed and 37.0% agreed that students become more engaged when learning analytics tools are integrated into the Learning Management System (LMS). However, 13.5% disagreed and 8.0% strongly disagreed, indicating that although the majority perceive



increased engagement, a small proportion of respondents do not share the same view. Furthermore, the findings reveal that 42.5% strongly agreed and 34.5% agreed that LMS feedback motivates learners, while 14.0% disagreed and 9.0% strongly disagreed. In addition, 44.0% strongly agreed and 35.0% agreed that monitoring improves study habits. This indicates that when students are able to monitor their performance through analytics tools, they are more likely to adjust their learning strategies and develop better study habits.

Finally, respondents also agreed that analytics promote self-regulated learning, as 42.0% strongly agreed and 36.0% agreed with the statement. This implies that students who have access to learning analytics data tend to take greater responsibility for their learning process. The weighted mean of 3.12 confirms that learning analytics features significantly contribute to improving students' engagement, motivation, self-regulation, and overall academic performance in educational institutions.

Research Question 4: What challenges hinder the effective use of learning analytics features in LMS?

Table 4: Factors that Hinder Effective Use of Learning Analytics Features in LMS

S/N	Item	SA (F/%)	A (F/%)	D (F/%)	SD (F/%)	Mean	Std. Dev.
16	Poor internet connectivity affects LMS usage.	95 (47.5%)	70 (35.0%)	20 (10.0%)	15 (7.5%)	3.23	0.87
17	Inadequate technical skills limit usage.	88 (44.0%)	72 (36.0%)	25 (12.5%)	15 (7.5%)	3.17	0.90
18	Lack of training on analytics tools.	90 (45.0%)	68 (34.0%)	25 (12.5%)	17 (8.5%)	3.16	0.92
19	Limited institutional support.	85 (42.5%)	74 (37.0%)	24 (12.0%)	17 (8.5%)	3.14	0.92
20	Data privacy concerns restrict usage.	80 (40.0%)	76 (38.0%)	26 (13.0%)	18 (9.0%)	3.09	0.95

Weighted Mean = 3.16



Table 4 indicates that items 16, 17, 18, 19, and 20 recorded mean values of 3.23, 3.17, 3.16, 3.14, and 3.09, respectively. All mean values exceed the criterion mean of 2.50, indicating agreement that several challenges hinder effective use of learning analytics features. Specifically, 47.5% of respondents strongly agreed, and 35.0% agreed that poor internet connectivity affects LMS usage. This highlights infrastructural limitations as a major barrier to effective analytics utilization. Similarly, 44.0% strongly agreed and 36.0% agreed that inadequate technical skills limit effective use of analytics tools. This suggests that both students and lecturers may require additional training to maximize LMS functionalities.

Furthermore, respondents agreed that lack of training on analytics tools, limited institutional support, and data privacy concerns also restrict effective usage. These findings indicate that technical, institutional, and policy-related challenges collectively affect the optimal implementation of learning analytics systems. The weighted mean of 3.16 confirms that infrastructural deficiencies, skill gaps, limited support, and privacy concerns are significant barriers to the effective utilization of learning analytics features in tertiary institutions in Ogun State.

Discussion of Findings

The finding revealed that learning analytics features are available and moderately utilized in tertiary institutions within the study area. The results in Table 3 showed that 41.0% of respondents strongly agreed and 35.0% agreed that LMS platforms provide dashboards for tracking student activities, while similar levels of agreement were observed regarding attendance tracking, assessment analytics, and generation of performance reports. These findings suggest that most institutions have integrated analytics tools within their LMS platforms to support teaching and learning processes. This finding supports the view of Siemens and Baker (2019), who noted that learning analytics tools embedded in LMS platforms enable educators to monitor students' participation and academic behavior. Similarly, Ferguson (2020) observed that dashboards and reporting tools help lecturers identify patterns in student engagement and improve instructional decision-making.

It was indicated in the finding that learning analytics features are effective in tracking student progress as shown in Table 4. The result revealed that a majority of respondents agreed that analytics help identify at-risk students, track assignment completion rates, and monitor performance trends over time. In particular, 45.0% strongly agreed and 34.0% agreed that analytics systems help identify students who may require academic support. These findings demonstrate that analytics tools provide early warning mechanisms that enable lecturers to intervene before students experience academic failure. This result corroborates the findings of Arnold and Pistilli (2021), who reported that predictive analytics in LMS platforms help institutions detect struggling students and provide timely academic interventions. Likewise, Long and Siemens (2020) emphasized that learning analytics supports continuous monitoring of students' learning progress, thereby improving retention and academic success.

Learning analytics features are positively influence students' academic performance and engagement as obtained in the Table 5. The results showed that respondents agreed that analytics improve



academic performance, increase student engagement, motivate learners through feedback, improve study habits, and promote self-regulated learning. For instance, 43.0% of respondents strongly agreed and 35.5% agreed that analytics improve academic performance, suggesting that students benefit from the ability to track their progress through LMS dashboards and reports. Furthermore, the findings indicate that the visibility of performance data encourages students to take greater responsibility for their learning and adopt more effective study strategies. This finding aligns with the work of Dawson and Gašević (2020), who noted that learning analytics promotes self-regulated learning by providing students with feedback about their academic progress. Similarly, Ifenthaler and Yau (2020) argued that analytics-based feedback improves learner motivation and engagement by enabling students to monitor their own performance and adjust their learning strategies accordingly.

Also established that there is a strong relationship between the use of learning analytics features and effective monitoring of student progress. Specifically, respondents agreed that analytics dashboards provide timely information, help identify students requiring academic support, and improve lecturers' ability to track performance trends. These findings suggest that learning analytics tools strengthen the monitoring capacity of lecturers and institutions by providing real-time academic data. This finding is consistent with the observations of Gašević, Dawson, and Siemens (2018), who asserted that learning analytics systems enable institutions to make data-driven decisions regarding students' learning progress. Similarly, Tempelaar, Rienties, and Nguyen (2020) reported that analytics tools support continuous academic monitoring and enable lecturers to detect learning difficulties early.

However, the findings from Table 7 revealed that several challenges hinder the effective utilization of learning analytics features in tertiary institutions. The results showed that 47.5% of respondents strongly agreed and 35.0% agreed that poor internet connectivity affects LMS usage, highlighting infrastructural deficiencies as a major barrier. Similarly, respondents indicated that inadequate technical skills, lack of training on analytics tools, limited institutional support, and data privacy concerns also hinder effective utilization. These findings suggest that although analytics tools are available, several systemic barriers limit their optimal use. This result supports the findings of Papamitsiou and Economides (2019), who observed that lack of technical expertise and inadequate infrastructure often hinder the successful implementation of learning analytics in developing countries. Likewise, Sclater (2017) emphasized that concerns about data privacy and institutional policies remain major challenges affecting the adoption of learning analytics technologies.

Conclusion

Based on the findings of this study, it can be concluded that learning analytics features embedded in Learning Management Systems are effective tools for tracking student progress in tertiary institutions in Ogun State. The study revealed that analytics tools such as dashboards, performance reports, and progress tracking systems are available and utilized by both students and lecturers. These tools provide valuable insights into students' learning activities and academic performance. The findings also demonstrate that



learning analytics systems contribute significantly to improving students' academic performance and engagement by enabling students to monitor their progress, receive feedback, and adjust their learning strategies accordingly. In addition, the study established that learning analytics features enhance lecturers' ability to supervise and monitor students' academic activities effectively.

However, despite the benefits of learning analytics tools, several challenges hinder their optimal utilization. Infrastructural limitations such as poor internet connectivity, inadequate technical skills among users, lack of adequate training, and institutional support, as well as concerns about data privacy, remain major obstacles to effective implementation. Therefore, the study concludes that while learning analytics features significantly improve monitoring of student progress and academic engagement, addressing infrastructural and technical challenges is essential to maximize the full potential of these systems in tertiary institutions in Ogun State.

Recommendations

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

1. Higher institution management should further enrich the learning analytic features for students' better engagement to maximize potential of LMS
2. Lecturers are encouraged to regularly visit and interact with the learning analytic features to ensure that students are participating are required.
3. Continuous monitoring and evaluation frameworks should be established to assess the effectiveness of learning analytics features in improving student learning outcomes and institutional decision-making.
4. Institutional management should provide adequate technical and administrative support for the implementation and maintenance of learning analytics systems in educational institutions.
5. Government and educational regulatory bodies should develop policies and guidelines that promote the effective integration of learning analytics tools in tertiary education.

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