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ARTIFICIAL INTELLIGENCE UTILIZATION AND MANAGEMENT OF STUDENTS' SERVICES IN PUBLIC SECONDARY SCHOOLS IN ETUNG LOCAL GOVERNMENT AREA, CROSS RIVER STATE

Uyimse, Felicia Unyekeme
ORCID ID: https://orcid.org/0009-0004-5668-9043
Email: uyimsefelicia@gmail.com Phone: +234 803 899 6212
Department of Educational Management, Faculty of Educational Foundation Studies,
College of Education, University of Calabar

ABSTRACT

This study examined the utilization of artificial intelligence (AI) in the management of student services in public secondary schools in Etung Local Government Area of Cross River State. Specifically, the study investigated the extent to which AI is utilized in managing students' security and library services. Two null hypotheses guided the study. A correlational research design was adopted. The population comprised all 1,535 students across the 12 public secondary schools in the study area. A census approach was used to include all schools, while a simple random sampling technique was employed to select 307 students. Data were collected using a structured questionnaire titled Artificial Intelligence Utilization and Management of Student Services Questionnaire (AIUMSSQ). The instrument consisted of two clusters and was designed on a four-point Likert scale: Strongly Agree, Agree, Disagree, and Strongly Disagree. The instrument was validated by experts in Educational Management and Measurement and Evaluation at the University of Calabar. Reliability was established using Cronbach's Alpha, yielding a coefficient of 0.82. Pearson Product Moment Correlation (PPMC) was used to test the hypotheses at the 0.05 level of significance. The findings revealed a significant positive relationship between AI utilization and the management of students' security and library services. The study concluded that AI plays a vital role in enhancing the effective management of student services in secondary schools. It was recommended that the government, through the Ministry of Education, should organize regular training and capacity-building programmes for school administrators on the application of AI tools for improved security management.

Keywords: Artificial Intelligence, Utilization, Management, Students Security Services, Student's Library Services

Introduction

The importance of students in the school system cannot be overemphasized, as they constitute the central focus of education. Without students, there can be no school. In Nigeria, education is structured into primary, secondary, and tertiary levels. Secondary education serves as a critical bridge between primary and tertiary education and is expected, among other objectives, to instill knowledge, skills, competencies, and values that promote personal growth, prepare learners for higher education, and support the development of an equitable and inclusive society (Obona et al., 2020; Uyimse et al., 2023; Madukwe

et al., 2024; Difoni et al., 2024). Consequently, the management of student services is essential for addressing students' needs and ensuring the attainment of educational goals. Effective management equips students with the necessary skills for a smooth transition into the workforce and facilitates the realization of institutional objectives (Ngene et al., 2025). According to Osegbue (2018), the achievement of organizational goals depends largely on the efficient coordination of activities and resources by school administrators. Similarly, Akpa, as cited in Osegbue (2021), emphasized that educational goals cannot be attained without proper management.

In the context of this study, the management of student services refers to the planning, organization, and coordination of school programmes aimed at ensuring students' overall development and success. Ezeh et al. (2025) define management as the process of organizing, directing, and controlling activities to ensure that staff contribute effectively to institutional goals. Effective management enhances the learning experience, fosters a positive academic environment, and improves student outcomes (Difoni et al., 2024; Nwosu, 2024). Student personnel, on the other hand, refer to learners within the school system, while student services encompass all activities that support classroom instruction and foster students' development. These include non-academic services provided beyond formal teaching, such as the provision of resources and support that facilitate teaching and learning both within and outside the classroom (Nwosu, 2024; Jumare, 2016).

The management of student services covers areas such as guidance and counselling, health and wellness programmes, extracurricular activities, library and information services, discipline, and record management. Effective record management enhances administrative efficiency (Iyaji et al., 2024). Abama, as cited in Osegbue (2021), identified key non-academic services in schools to include healthcare, orientation, sanitation, accommodation, transportation, guidance and counselling, and school meal programmes. These services are essential for creating a supportive learning environment, promoting students' welfare, and enhancing both academic and personal development. Conversely, ineffective management of these services can lead to poor learning outcomes.

Studies indicate that the management of student services in secondary schools remains inadequate (Akpan, 2016; Adu et al., 2023; Adeola, as cited in Adu et al., 2023). Essien et al. (2025) identified context-specific challenges such as inadequate recreational facilities, which hinder students' holistic development. Similarly, Oju et al. (2025) noted that students face challenges ranging from academic pressure to mental health issues, yet the supporting infrastructure remains insufficient. Osegbue (2021) lamented the ineffective management of student personnel services, while Adeola, as cited in Adu et al. (2023), observed that Nigerian students are often exposed to risks and hazards within the school environment. Obona et al. (2024) also highlighted issues such as inadequate teaching and learning

facilities, limited classroom and office space, and high staff turnover.

In Etung Local Government Area of Cross River State, the management of student services in public secondary schools appears to fall below stakeholders' expectations. In many schools, services such as guidance and counselling, health and wellness programmes, library and information services, career guidance, and discipline management are poorly implemented. These deficiencies hinder the achievement of educational goals and call for urgent intervention. One promising solution is the integration of Artificial Intelligence (AI), which is increasingly gaining relevance in educational management (Iyaji et al., 2024).

Artificial Intelligence (AI) refers to computer-based systems designed to perform tasks that typically require human intelligence, such as reasoning, problem-solving, decision-making, speech recognition, and language translation. It involves the development of intelligent systems capable of simulating human cognitive processes (Lin, 2024; Russell & Norvig, 2016; Chukwuma et al., 2021). With rapid technological advancements, AI offers numerous benefits, including automation of routine tasks, improved accuracy, and enhanced data security (Iyaji et al., 2024). It has significantly transformed the education sector by fostering innovation in both academic and administrative processes. Through technologies such as machine learning, neural networks, and natural language processing, AI supports diverse educational applications (Halaweh, 2023; Igbokwe, as cited in Iyaji et al., 2024).

For school administrators, AI has the potential to streamline administrative processes through automation (Obona et al., 2024) and enhance efficiency in resource management, supervision, and staff evaluation (Ibrahim et al., 2021; Nwuke & Yellowe, 2025). In the classroom, AI-powered systems support personalized learning by identifying students' needs, tracking progress, and recommending targeted interventions (Adeoye, 2022). Ogunleye and Olanrewaju (2022) noted that AI adoption in education promotes efficiency, learner-centred instruction, and improved outcomes. By leveraging predictive analytics and adaptive systems, AI can enhance teaching, learning, and the management of student services. This study specifically focuses on the management of students' security and library services using Artificial Intelligence.

Literature review

Artificial Intelligence and Management of Students' Security Services

School administrators bear the responsibility of ensuring the safety of lives and property within the school environment. The management of students' security services involves the systematic planning, coordination, and implementation of measures to safeguard students within and around the school. Nwosu (2024) defines student security management as protecting students from violence, bullying, and exposure to harmful elements such as drugs and gang activities. Xaba (2014) and Ozmen et al. (2010) emphasized the importance of patrol

systems and collaboration with security agencies, while Adieme and Oliobi (2024) highlighted the role of electronic monitoring tools such as CCTV, motion detectors, and access control systems.

AI technologies have significantly improved security management by enabling real-time data analysis and proactive threat detection (Iyaji et al., 2024). Earlier surveillance systems relied heavily on manual monitoring, which limited effectiveness (Chime et al., 2025). However, AI-powered systems now use algorithms to detect suspicious behaviours, unauthorized access, and potential threats. When such activities are identified, instant alerts are sent to security personnel for prompt intervention. Kepeghom (2024) further noted that some AI systems can recognize weapons and automatically trigger security protocols, thereby reducing response time and enhancing safety.

Empirical studies support the effectiveness of AI in school security. Mahmud and Okpe (2025) found that biometric identification systems reduced unauthorized access in schools. Ubakanma et al. (2025) reported a significant relationship between digital surveillance and school quality. Similarly, Chime et al. (2025) observed that AI-powered surveillance improved monitoring and incident response in secondary schools. Kingsley (2025) also demonstrated that predictive analytics can identify at-risk students by analyzing behavioural patterns such as absenteeism and disciplinary issues, thereby enabling timely interventions.

Artificial Intelligence and Management of Students' Library Services

The emergence of Artificial Intelligence has transformed school libraries into dynamic and efficient knowledge centres. Traditionally, library operations relied on manual cataloguing, which was time-consuming, error-prone, and limited access to information. AI has automated these processes, thereby improving efficiency and reducing workload (Iyaji et al., 2024). Islam et al. (2025) noted that AI adoption in libraries has accelerated due to advancements in machine learning and natural language processing.

AI-powered systems can automatically generate metadata such as author names, titles, and subject classifications (Palve & Arora, 2025). Arlitsch and Newell (2017) described AI as a transformative tool that enables libraries to meet users' evolving needs. Harisanty et al. (2023) found that AI enhances cataloguing, circulation, and reference services, while Chandwani (2018) emphasized its role in providing 24/7 access to library resources. Additionally, AI tools can summarize complex academic texts and improve information retrieval (Adetoun, 2021; Ex, 2019). Chatbots and virtual assistants now provide instant support to users, enhancing accessibility and user satisfaction (Adetayo, 2023; Johnson, 2018). Despite these benefits, Nwosu (2024) observed that many school libraries still operate manually with limited AI integration. However, studies by Palve and Arora (2025), Steiger (2024), and Fabunmi and Akinyemi (2024) confirm that AI significantly improves library efficiency and user experience.

While existing studies have explored AI applications in managing student services, there is limited context-specific research focusing on public secondary schools in Etung Local Government Area of Cross River State. This study therefore seeks to fill this gap.

Statement of the Problem

Effective management of student services is essential for creating a safe, supportive, and resourceful learning environment that enables students to maximize their potential and become productive members of society. However, evidence from observations and complaints by students and parents indicates that student services in Etung Local Government Area are poorly managed. For instance, many schools lack functional libraries, and those available are often stocked with outdated materials, limiting students' access to relevant learning resources.

In addition, insecurity within and around schools remains a major concern. Students are frequently exposed to unsafe conditions, including bullying, cultism, vandalism, theft, and physical violence. In many cases, schools lack adequate security personnel and monitoring systems to prevent such incidents, even during official school hours. These challenges contribute to declining academic performance and negatively affect society, as some students become involved in antisocial behaviours.

Despite government efforts such as employing security personnel, establishing counselling units, and renovating school facilities, these problems persist. This suggests that traditional approaches alone are insufficient. Therefore, the integration of Artificial Intelligence (AI) presents a viable alternative for improving the management of student services. Against this backdrop, this study examines whether the adoption of AI can enhance the management of student services in public secondary schools in Etung Local Government Area, Cross River State, Nigeria.

Purpose of the study

The main purpose of this study was to examine Artificial Intelligence (AI) utilization and management of student services in public secondary schools in Etung Local Government Area, Cross River State. Specifically, the study examined the relationship between:

i. Artificial Intelligence utilization and management of management of students' security services.
ii. Artificial Intelligence utilization and management of students' library services.

Research hypotheses

The following null hypotheses guided the study:

i. There is no significant relationship between Artificial Intelligence utilization and the management of students' security services.
ii. There is no significant relationship between Artificial Intelligence utilization and the management of students' library services.

Research method

This study adopted correlational research design. The population consisted of all

1,535 students in the 12 public secondary schools in Etung Local Government Area. The census method was adopted in selecting all the schools for the study while simple random sampling technique was employed in selecting a total of 307 students which is 20% of the study population as sample for the study through the hat and draw method. Data were collected using a structured questionnaire titled Artificial Intelligence Utilization and Management of Student Services Questionnaire (AIUMSSQ). The instrument was organized into two clusters and was structured on a 4-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). It was validated by experts in Educational Management as well as Test and Measurement Unit, University of Calabar. Their input guided revisions for clarity, relevance, and comprehensiveness. To ascertain the reliability of the instrument, a pilot test was conducted on a population outside the study area. Cronbach's Alpha was used to determine the reliability and it yielded a coefficient index of 0.82. The questionnaire was administered on the respondents with the assistance of 3 trained and motivated research assistants after seeking permission from the various school administrators in the study area. After some time, all the questionnaires were retrieved back with 100% return rate. Data analysis was carried out using Pearson Product Moment Correlation (PPMC) statistic at a 0.05 level of significance. The result is presented in tables.

Presentation of Results

Hypothesis One: There is no significant relationship between Artificial Intelligence utilization and the management of students' security services.

The two variables in this hypothesis are Artificial Intelligence utilization and the management of students' security services. Pearson Product Moment Correlation was used to test the hypothesis and the result of the analysis is presented in Table 1. Table 1 showed the correlation coefficient between Artificial Intelligence and the management of students' security services. The correlation coefficient is statistically significant for management of students' security services ($r = .59$, $p<.05$). Since p (.000) is less than p (.05), hypothesis one is rejected. The result of the analysis implied that there is a statistically significant positive relationship between Artificial Intelligence utilization and the management of students' security services in public secondary schools in Etung Local Government Area, Cross River State.

Table 1: Summary of correlation between Artificial Intelligence utilization and the management of students' security services in public secondary schools in Etung Local Government Area, Cross River State. (n=307)

Variables	$\bar{X}$	S.D	R	Sig.
Artificial Intelligence utilization	18.17	4.34		
Management of students' security services	18.64	3.90	.59*	.000

*Significant at p<.05 df=305

Hypothesis Two: There is no significant relationship between Artificial Intelligence utilization and the management of students' library services. The two variables in this hypothesis are Artificial Intelligence utilization and the management of students' library services. Pearson Product Moment Correlation was used to test the hypothesis and the result of the analysis is presented in Table 2. Table 2 showed the correlation coefficient between Artificial Intelligence and the management of students' library services. The correlation coefficient is statistically significant for management of students' library services (r = .81, p<.05). Since *p*(.000) is less than *p*(.05), hypothesis two is rejected. The result of the analysis implied that there is a statistically significant positive relationship between Artificial Intelligence utilization and the management of students' library services in public secondary schools in Etung Local Government Area, Cross River State.

Table 2: Summary of correlation between Artificial Intelligence utilization and the management of students' library services in public secondary schools in Etung Local Government Area, Cross River State. (n=307)

Variables	$\bar{X}$	S.D	R	Sig.
Artificial Intelligence utilization	18.17	4.34		
Management of students' library services	19.10	4.42	.81*	.000

*Significant at p<.05 df=305

Discussion of findings

The result of hypothesis one indicates that there is a significant positive relationship between Artificial Intelligence utilization and management of students' security services in public secondary schools in Etung Local Government Area, Cross River State. The result is possible because it shows that school administrators integrate AI tools into their security management and thus, they experience reduced incidents of theft, vandalism, bullying, and other security breaches. The implication of this result is that the more school utilize AI in strengthening school security, the more they will promote a safer learning environment for the students.

These finding is supported by the studies of Chime et al. (2025), who found that AI significantly improve monitoring and rapid incident detection in secondary schools. Kingsley (2025) and Ubakanma et al. (2025) found that AI enable proactive security management, thus assisting school administrators to detect and respond to swiftly to potential threats thereby promoting a safer learning environment. Also, Adieme and Oliobi (2024); and Kepeghom (2024) reveal that that AI enhances the capability of security systems to recognize dangerous behaviors or objects and trigger timely interventions. The result therefore, confirms that AI utilization in school security management enhance the protection of students, school property, and promote a conducive atmosphere for teaching and learning to thrive.

The result of hypothesis two reveals a significant positive relationship between Artificial Intelligence utilization and the management of students' library services in public secondary schools in Etung Local Government Area, Cross River State. This result is not surprising because with AI, students have access to learning materials without physical presence. The implication of this result is that when school administrators integrating AI into library management, they will not only grant students' access to reliable educational resources but also support their academic performance and a productive learning environment.

The findings of this study are supported by previous research which revealed that that AI has significantly improve the discoverability of learning resources, and facilitate easier user access (Palve & Arora, 2025; Islam et al., 2025). Other studies revealed that AI-driven tools offer round-the-clock access, and summarize complex academic materials, thereby enhancing research efficiency and user satisfaction (Adetayo, 2023; Johnson, 2018; Adetoun, 2021; Ex, 2019). Studies in Nigerian secondary schools further supports the finding that implementing AI-based library management systems significantly improves efficiency, reduces workload, and broadens access to resources (Fabunmi & Akinyemi, 2024; Nwosu, 2024; Steiger, 2024). Therefore, AI is a critical tool for improving the management and effectiveness of students' library services in secondary schools.

Conclusion

The study investigated the relationship between Artificial Intelligence utilization and the management of student services in public secondary schools in Etung Local Government Area of Cross River State. The findings revealed a significant positive relationship between Artificial Intelligence utilization and the management of students' security services as well as library services in the study area. Based on these findings, the study concluded that the utilization of Artificial Intelligence is essential for the effective management of student services within the school system.

Recommendations

The following recommendations are made based on the findings of this study:

1. The government, through the Ministry of Education, should organize regular training and capacity-building programmes for school administrators on the application of Artificial Intelligence tools for effective security management in secondary schools.
2. Secondary schools should adopt AI-driven security technologies such as intelligent surveillance systems, biometric access control, and predictive monitoring tools to enhance safety, reduce security threats, and ensure prompt response to incidents.
3. School authorities should promote the integration of Artificial Intelligence in library management by providing the necessary infrastructure and technical support for AI-based systems.
4. School libraries should implement AI-powered tools such as automated cataloguing systems, virtual assistants (chatbots), and digital access platforms

to improve information retrieval, user support, and efficiency of library services.

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