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Impact of Artificial Intelligence on School Management and Record Keeping in Secondary Schools in Dutsinma Local Government Area of Katsina State

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Abstract
This study examined the impact of artificial intelligence on schools management and record keeping in secondary schools in Dutsinma Local Government Area of Katisna State. Descriptive survey design was adopted for the study. The population for the study comprised all the ten (10) Government secondary schools in Dutsinma LGA, making 2,155 teachers as the population. The sample for the study was 322 teachers. This was got from Krejcie and Morgan, 1970, who states that when the population of a study is in thousands, the closest sample should be picked. A research instrument titled Artificial Intelligence on Adequate Management of Schools and Record Keeping Questionnaire (AISMRKQ) in Dutsinma Local Government Area of Katsina, was used to elicit information from the respondents. Mean and standard deviation was used to answer the three research questions raised. The study found out that, Artificial Intelligence, if adequately used can reduce some of the difficulties found in administrative tasks and workload of the teachers. Based on the findings, it was concluded that AI is a veritable tool to reducing the teachers' workload in all the administrative tasks in secondary school. It was also found out that if the management of schools use AI in all the administrative daily routines, there would be little or no errors in the job of administration. The researchers recommended therefore that Artificial Intelligence should be used in all the administrative tasks in the school.

Keywords: Artificial intelligence, record keeping, adequate management, workload

Introduction
Educational administration is the process of managing and overseeing the organizational aspects of educational institutions, such as schools or universities. It encompasses task such as Planning, decision-making and coordination to ensure the optimal functioning of schools or educational system. This includes tasks like budgeting, staffing, curriculum development, and policy implementation and educational planning, on the other hand, involves the systematic process of setting educational goals, determining the resources needed to achieve these goals, and devising strategies to implement and evaluate educational programs effectively (Goksel & Bozkurt 2019).

In a broad term, educational administration involves managing educational institutions, while educational planning focuses on strategic development and implementation of educational programs (Goksel & Bozkurt 2019). Bayne (2015) posit that Education is the process of facilitating learning, acquisition of knowledge, skills, values, beliefs, and habits. It occurs through various formal and informal means, such as schooling, mentoring, self-directed learning, and experiential learning. Bringing Artificial Intelligence (AI) to education is revolutionizing education by offering personalized learning experiences, automating administrative tasks, and providing data-driven insights to improve teaching and learning outcomes. AI-powered educational tools assist

teachers in lesson planning, grading, scheduling, record-keeping, and providing feedback, thereby enhancing efficiency and effectiveness, freeing up time for educational administrators to focus on strategic planning of students support initiatives in the classroom.

A well-structured and organized administration, schools and educational institutions can provide a conducive learning environment for students, support teachers in their instructional practices, and foster overall growth and development. Additionally, Educational administration and planning have become even more significant in the face of technological advancements. With the integration of technology in education, administrators and planners have the opportunity to leverage innovative tools, platforms, and data-driven approaches to enhance teaching and learning experiences.

Technology has transformed education by revolutionizing also facilitated the automation of routine administrative processes. Tasks like student registration, grading, and reporting can now be efficiently managed through integrated software systems. This automation not only saves time but also minimizes errors and ensures data accuracy. Technology in education refers to the integration of digital tools, resources, and platforms to enhance teaching, learning, and administrative processes within educational institutions (Thahirah, 2018). This includes hardware such as computers, tablets, and interactive whiteboards, as well as software, online resources, and learning management systems (Goldberg 2015). Technology in educational system encompasses various aspects. Firstly, digital platforms and tools have simplified administrative tasks such as record-keeping, scheduling, and communication. For example, cloud-based systems allow for easy access to information, reducing paperwork and administrative burden.

In recent years, secondary schools have encountered a surge in the complexity and volume of administrative tasks, creating an unprecedented burden on educational institutions. The responsibilities ranging from student lesson plan creation, enrollment and class attendance tracking, data-keeping to curriculum planning and reporting, has significantly increased the workload for administrative staff. The traditional methods of managing these tasks, often reliant on manual processes and outdated systems, struggle to keep pace with the evolving demands of the educational landscape. This escalating administrative workload not only hampers operational efficiency but also poses challenges in maintaining accuracy, meeting regulatory requirements, and fostering a student-centric learning environment. This makes one wonder how teachers manage to handle the never-ending tasks of curriculum planning, creating engaging lesson plans, taking attendance, and keeping track of student data. It's a lot to handle, but imagine if they had a helping hand in the form of Artificial Intelligence (AI).

Artificial Intelligence (AI), refers to the development of computer systems capable of performing tasks that typically require human intelligence (Goksel & Bozkurt, 2019). These tasks include learning, reasoning, problem-solving, perception, understanding natural language, and interacting with the environment. AI encompasses various techniques and approaches, including machine learning, neural networks, natural language processing, computer vision, and robotics, among others. The goal of AI is to create systems that can autonomously process information, adapt to changing circumstances, and perform tasks with efficiency and accuracy, often surpassing human capabilities in specific domains (Devlin, Chang, Lee, and Toutanova 2018).

Artificial Intelligence refers to the simulation of human intelligence processes by machines, especially computer systems. Accordingly, Nathan, Abasi and Isuaiko (2025) refers to Artificial Intelligence (AI) as the study of how the human brain makes decisions, learns new things, and thinks through difficulties. Artificial

Intelligence (AI) has the potential to revolutionize various industries by augmenting human capabilities and automating tasks (Russell and Norvig 2020).

This includes learning, reasoning, problem-solving, perception, and language understanding. Artificial Intelligence, commonly known as AI, plays a significant role in various fields, including education. In the educational context, AI refers to the utilization of technologies that simulate human intelligence processes in machines, particularly computer systems. This simulation encompasses a range of functions such as learning, reasoning, problem-solving, perception, and language understanding.

The use of Artificial Intelligence continues to grow in the education sector. It is becoming increasingly clear to all that it offers many exciting possibilities for the learning outcomes of students and its importance help in achieving modern educational goals. AI offers some potential benefits to the students and teachers. AI brings benefits and opportunities to education by facilitating personalization of learning, providing instant feedback and improving efficiency in the assessment process. Thus, artificial intelligence can be integrated into online learning platforms, allowing content and activities to be customized according to the needs and knowledge level of each student. Management systems can use artificial intelligence to provide personalized recommendations, automatic feedback and monitor student progress. Thus, teachers and students can access relevant materials and resources according to their individual needs.

Furthermore, AI can be used to create tutorials and interactive virtual assistants, systems that can answer students' questions, provide additional explanations, and guide students in real time through the learning process. Thus, through tutorials and virtual assistance students can benefit from additional support and learn at an individualized pace receiving real-time guidance to support the learning process (Rutkin, 2015). AI can automate many time-consuming administrative tasks in teaching and learning. It could be used in grading assignments, providing feedback on student work, or even detecting plagiarism. AI can be used to create personalized learning experiences for students. Sonderlund, Hughas and Smith (2019) stated that AI-based learning systems can analyze student data, such as their learning style, pace, and preferences, and then provide them with tailored learning experiences. This can lead to improved engagement, motivation, and ultimately, better learning outcomes.

Brew and Leacock (2013) posits that the use of artificial intelligence (AI) in educational management can improve intelligent tutoring systems (ITS) by providing personalized and adaptive feedback to students. Thahirah (2018) also posits that AI-powered ITS can collect and analyze data on student performance, learning patterns, and engagement levels to provide individualized support and interventions. According to Chen, Yin, Isaisa, and Psotka (2020) AI can enable the ITS to adjust the difficulty of the content based on the student's proficiency level, which can promote mastery learning and increase motivation. AI-powered intelligent tutoring systems can provide immediate feedback to students, identify knowledge gaps and suggest suitable learning strategies. This can be particularly beneficial for students who need extra support in their learning.

Sonderlund, Hughas and Smith (2019) stated that AI can be used to improve the efficiency of administrative tasks in educational institutions. Zawacki-Richter & Anderson (2014) AI-powered systems can automate routine tasks, such as grading, scheduling, and record-keeping, freeing up educators' time to focus on more impactful work, such as lesson planning and student engagement. Educational institutions have to deal with a lot of administrative tasks, such as scheduling, grading, and record-keeping. He continued by stating that AI can automate many of these tasks, freeing up educators' time to focus on teaching and supporting students.

The integration of AI in automating administrative tasks in secondary schools in Dutsinma LGA, cannot be overemphasized because of its enhancing efficiency and reducing the workload on teachers. By embracing AI technologies for automation, data analytics, and decision support, schools can optimize their operations, improve student outcomes, and create a more conducive learning environment.

Statement of the Problem

Many secondary schools in Nigeria in general and Dutsinma in particular, are grappling with so many challenges marked by an overwhelming administrative workload, extending across a spectrum of critical responsibilities essential for effective operation. Some of these tasks included spanning student enrollment, attendance tracking, grading, communication management, curriculum planning, and lesson plan creation, has expanded beyond the capacity of conventional administrative processes where manual entries are made. Manual methods of task execution are proving increasingly insufficient, leading to inefficiencies, inaccuracies, and placing strain on the operational resources of educational institutions.

The challenges faced by secondary school's teachers in managing administrative tasks are multifaceted and gone beyond manual tasks. Student records and data-keeping, curriculum planning, lesson plan creation, along with attendance tracking and grading, demand meticulous attention. These tasks often involve time-consuming processes prone to human errors. Furthermore, the evolving landscape of educational standards and the integration of technology bring forth a surge in regulatory compliance and data reporting requirements, amplifying the complexity of administrative responsibilities.

To this end, emphasis should be laid on the need for efficient solutions which is crucial, given that this escalating workload not only impede the operational efficiency of secondary school teachers but also raises concerns about staff burnout and compromised productivity. Conventional manual methods are no longer sustainable, and secondary school teachers should urgently require innovative approach that may leverage technology to streamline administrative processes. The introduction of such solutions is pivotal not only for reducing the workload but also for improving productivity, allowing administrators to redirect their efforts toward strategic initiatives that enhance the overall educational experience. This was why the researchers seek to explore and advocate for these efficient solutions, with a specific focus on the transformative potential of Artificial Intelligence (AI) in redefining secondary school teachers' administrative practices.

Objectives of the Study

The main objective of this study is to explore the potential of Artificial Intelligence (AI) in automating administrative task and reducing workload on secondary school teachers in Dutsinma LGA, Katsina state, Nigeria. Specifically, the study sought to:

1. Examine impact of using Artificial Intelligence in automating administrative tasks and reducing workload on secondary school teachers in Dutsinma LGA of Katsina State.
2. Examine the Impact of using Artificial Intelligence in automating student's records and data keeping by reducing administrative task and teachers' workload in Dutsinma LGA of Katsina State.
3. Examine the impact of using Artificial Intelligence (AI) in automating the class attendance of students by reducing teachers' workload in secondary schools in Dutsinma LGA of Katsina State.

Research Questions

1. To what extent has the use of Artificial Intelligence reduced the administrative task and workload on teachers in secondary schools in Dutsinma LGA of Katsina State?

2. What is the impact of using Artificial Intelligence in automating student's records and data keeping by reducing administrative task and teachers' workload in secondary school in Dutsinma LGA of Katsina State?
3. What is the impact of using Artificial Intelligence in automating the class attendance of students by reducing teachers' workload in secondary schools in Dutsinma LGA of Katsina State?

Methods

This study used descriptive research design to examine Secondary Schools effectiveness of integrating AI in automating administrative tasks and reducing the workload of secondary school teachers in Dutsinma LGA, Katsina State. The population of the study comprised all the ten (10) Government secondary schools in Dutsinma LGA, making 2,155 teachers as the population. These schools were purposively selected among others. The sample for the study was 322 teachers out of the population. This was got from Krejcie and Morgan, 1970, who states that when the population of a study is in thousands, the closest sample should be picked. The instrument for the study was a self-structured questionnaire on Artificial Intelligence on Schools Management and Record Keeping Questionnaire (AISMRKQ) in automating the class attendance of students by reducing teachers' workload in secondary schools in Dutsinma LGA of Katsina State? Impact of Artificial Intelligence on Adequate Management of Schools and Record Keeping (IAIAMSRK) in Dutsinma Local Government Area of Katsina. It was Four Likert-scale questionnaire of 15 items which was designed to elucidate information from the respondents, ranging from Strongly Agree (SA= 4), Agree A = 3), Disagree (D = 2) and Strongly Disagree (SD = 1). The instrument was validated by two experts in the department of Educational Management and the unit of Measurement and Evaluation Faculty of Education, Federal University Dutsinma, Katsina State with a reliability index of 0.75. The data collected was analysed using descriptive statistics of mean and standard deviation.

Results

Research Question 1: To what extent has the use of Artificial Intelligence to reduce the administrative task and workload on teachers in secondary schools in Dutsinma LGA of Katsina State?

Table 1: Indicates the responses of the teachers on the extent to which the use of AI has reduced the administrative task and workload in secondary schools in Dutsinma LGA, Katsina State N = 322

S/N	Statements	SA	A	D	SD	X	STD	Decision
1.	AI technology can effectively automate routine administrative tasks in schools	102	63	41	15	3.40	0.70	Agreed
2.	Integrating AI in school administration can help reduce the workload on teachers	125	78	48	32	4.40	0.90	Agreed
3.	AI systems can improve the efficiency of handling student records and data in schools	115	62	43	18	3.70	0.74	Agreed
4.	AI tools can enhance communication and collaboration among teachers, students, and parents	135	33	22	15	3.18	0.64	Agreed
5.	AI can positively impact the daily administrative tasks in your school	127	78	46	20	4.21	0.84	Agreed
	Cumulative Mean					**3.78**		

Source: Field work, 2024.

Table 1 indicated that the use of AI reduces the administrative task and workload of the teachers in secondary schools in Dutsinma in particular and Nigeria in general. This can be seen in the cumulative mean of 3.78 and the items on the table which shows an affirmation to the decision by the respondents.

Research Question 2: What is the impact of using Artificial Intelligence in automating student's records and data keeping by reducing administrative task and teachers' workload in secondary school in Dutsinma LGA of Katsina State?

Table 2: Shows the responses of the respondents on the impact of using AI in automating the students' records and data keeping by reducing administrative task and workload for teachers in secondary school in Katsina State N = 322

S/N	Statements	SA	A	D	SD	X	STD	Decision
1.	There has been training on how to use AI tools for administrative tasks in your school	85	61	52	28	3.51	0.70	Agreed
2.	AI technologies are often used to assist in your administrative responsibilities	55	36	25	15	2.03	0.41	Disagreed
3.	AI tools are user-friendly and easy to integrate into your daily work routine	145	75	30	24	4.25	0.85	Agreed
4.	There has been challenges when using AI technologies in your administration tasks in your school	171	85	15	11	4.38	0.88	Agreed
5.	There is the need to assess more training and support to enhance your use of AI tools for administrative purposes.	159	71	42	8	4.35	0.87	Agreed
	Cumulative Mean					**3.70**		

Source: Field work, 2024.

In table 2, it is indicated that AI impacted so much in automating students' records and data keeping by the teachers and managers of schools. This also seen in the cumulative mean of 3.70 for affirmation, though, item two in the series was disagreed upon, stating that AI technologies are not used in the administrative duties of the administrators and the teachers. AI-based learning systems can analyze students' data, such as their learning style, pace, and preferences, and then provide them with tailored learning experiences. This can lead to improved engagement, motivation, and ultimately, better learning outcomes and easy automating of students' records and data keeping.

Research Question 3: What is the impact of using Artificial Intelligence in automating the class attendance of students by reducing teachers' workload in secondary schools in Dutsinma LGA of Katsina State?

Table 3: Indicates the responses of the respondents on the impact using of AI in automating the class attendance of students by reducing teachers' workload in secondary schools in Dutsinma LGA of Katsina State
N=322

S/N	Statements	SA	A	D	SD	X	STD	Decision
1.	The teachers use AI to prepare their lesson	43	36	27	10	1.80	0.36	Disagreed
2.	Automated lesson plan makes the lesson easier	152	42	21	15	3.57	0.71	Agreed
3.	AI has potential impact on the lesson delivery	143	57	28	12	3.73	0.75	Agreed
4.	The integration of AI in schools has drawn lesson closer to the students	162	88	31	21	4.69	0.94	Agreed
5.	The integration of AI has created laziness to the teachers	155	78	52	14	4.64	0.93	Agreed
	Cumulative Mean					**3.69**		

For table 3, it is seen that the teachers' use of AI to automate their lesson plan has reduced the administrative task

and workload in secondary school in Katsina State. This can be seen in the cumulative mean of 3.69, though item 1 on the table indicated negative in disagreement. In support to the table and responses, items 2, 3, 4, and 5 indicated in affirmation that the use of AI has really reduced the workload and administrative tasks of the teachers.

Discussion of Findings

Results in table 1 revealed that AI reduces the administrative tasks and workload on teachers in secondary school in Dutsinma LGA. In cause of the investigation, it was discovered that the use of Artificial Intelligence reduces the administrative task and workload on teachers in secondary schools in Dutsinma LGA of Katsina State in particular and Nigeria in general. This can be seen in the cumulative mean of 3.78 which was as a result respondent responses on the table. In line with this agreement, Sonderlund, Hughas and Smith (2019) AI-powered systems can automate routine tasks, such as grading, scheduling, and record-keeping, freeing up educators' time to focus on more impactful work, such as lesson planning and student engagement, invariably reducing the old system of using manual record-keeping.

Table two revealed that the use of Artificial Intelligence in automating the students' records and data keeping reduces the administrative task and workload for teachers in secondary school in Kaduna State. It was also discovered that if AI is adequately used it will automatically reduce the mistakes and amount of work on students' records and data keeping among the administrative tasks for the teachers. This can be seen in the cumulative mean of 3.70 for affirmation, though, item two in the series was disagreed upon. This result was from the respondent responses as indicated on the table. Sonderwlund, Hughas and Smith (2019) stated that AI can be used to create personalized learning experiences for students. AI-based learning systems can analyze students' data, such as their learning style, pace, and preferences, and then provide them with tailored learning experiences. This can lead to improved engagement, motivation, and ultimately, better learning outcomes.

Table 3 revealed the responses of the teachers on the use of AI in automating the lesson plan to reduce administrative task and workload in secondary schools in Katsina state. It was seen that the teachers' use of AI to automate their lesson plan has reduced the administrative task and workload in secondary school in Katsina State. This can be seen in the cumulative mean of 3.69, though item 1 on the table indicated negative in disagreement. In line to the table and responses of the respondents, it was really affirmed that the use of AI has reduced the workload and administrative tasks of the teachers. Mislevy, Yan, Gobert and Sao-Pedro (2020) suggested that the application of artificial intelligence (AI) in educational management can help to improve teaching and learning outcomes for teachers and students. Again, O'Neil and Chuang, (2019) posited that AI-powered tutoring systems can provide personalized feedback and adaptive learning experiences that are tailored to each student's needs and learning styles. Brew and Leacock (2013) suggested that the application of artificial intelligence (AI) in educational management can help to improve learning outcomes for students. Again, Thahirah (2019) posited that AI-powered tutoring systems can provide personalized feedback and adaptive learning experiences that are tailored to each student's needs and learning style. Furthermore, Zawacki-Richter & Anderson (2014) posited that AI can also be used to analyze large amounts of student data, such as assessment scores and behavioral patterns, in order to identify areas where students may be struggling and provide targeted interventions.

Conclusion

The study examined the impact of Artificial Intelligence on School Management and Record Keeping in Secondary Schools in Dutsinma Local Government Area of Katsina State. Based on the findings, it was concluded that AI is a veritable tool to reducing the teachers' workload in all the administrative tasks in Secondary School in Dutsinma Local Government Area of Katsina State. It was also found out that if the schools management use

AI in all the administrative daily routines.

Recommendations

Based the finding of the study, the following recommendations were made:

1. Artificial Intelligence (AI) should be used in all the administrative tasks in secondary school;
2. AI should be used in keeping all the data and records of the students;
3. Teachers should be compelled to use AI to compile students records as it will enable them have accurate records in both the lesson plan and other records of the students, in Dutsinma Local Government area of Katsina State;
4. Teachers should be trained on the use of AI in the classroom; and
5. AI should be included in the curriculum by the curriculum planners and educational policy makers.

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