CHALLENGES IN ARTIFICIAL INTELLIGENCE UTILIZATION FOR JOB MANAGEMENT EFFICIENCY AMONG ACADEMIC STAFF IN COLLEGES OF EDUCATION IN ANAMBRA STATE

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Abstract

The inefficiency of many colleges of education (COEs) academic staff towards execution of their job responsibilities in the current digitalized society, thereby, causing low achievement of instructional objectives, led the researchers to conduct this study. The present study sought to examine the challenges to academic staff utilization of artificial intelligence (AI) for improved job management efficiency in colleges of education (COEs) in Anambra State. Four research questions guided the study. A descriptive survey research design was employed in the study. Population of the study comprised 699 academic staff of two COEs in Anambra State. Sample for the study constituted 350 academic staff of these two COEs in Anambra State selected at 50% using the simple random sampling technique. A 33-item questionnaire developed by the researchers was used for data collection. Validation of the research instrument was done by three expects from the Department of Educational Foundations, Faculty of Education, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. Reliability of questionnaire was established through a pilot-test carried out on a single administration of the instrument to a sample of 25 academic staff of two COEs in Enugu which was not part of the study. Scores obtained after the pilot test were collated and measured using Cronbach Alpha method which gave internal coefficient consistency of 0.88, 0.89, 0,83 and 0.77 for the four clusters respectively, which added up to give an overall coefficient of internal consistency of 0.84, showing that the questionnaire was reliable and trustworthy. Data collated were analyzed using mean statistics rated at 2.50 and standard deviation statistics. Findings of the study revealed among others that challenges such as financial constraints, inexperience in using AI technology, lack of constant involvement in training and retraining AI programmes, time constraints, academic staff workloads and so on, obstructed academic staff utilization of artificial intelligence (AI) for improved job management efficiency in colleges of education (COEs) in Anambra State. It was found out that academic staff holds positive perceptions regarding the potential benefits of AI technology for their improved job management efficiency in COEs in Anambra State. Based on the findings, the study recommended among others that both the Federal and Anambra State government should allocate adequate financial resources and establish funding mechanisms that supports ongoing staff training likewise, the acquisition, mobilization, maintenance, upgrades and accessibility of AI technologies and infrastructure, in order to alleviate financial constraints and ensure sustained integration of AI for improved job management efficiency in the COEs

Keywords: *Challenges, Academic staff, Utilization, Artificial Intelligence (AI), Job, Management, Efficiency*

Introduction

The Colleges of Education (COEs) are one of the teacher education institutions known for the preparation and production of teachers who provide educational services in the primary and junior secondary schools. The Colleges of Education (COEs) are educational institutions that specialize in preparing the student-teachers for careers in teaching and educational leadership (U.S. Department of Education, 2020). They offer undergraduate (example: Nigeria Certificate in Education – NCE courses) and graduate (such as: Professional Diploma in Education - PDE) programmes in education, curriculum development, pedagogy, and educational administration (Levinson, 2019). The COEs, as indicated by the Federal Republic of Nigeria (FRN, 2014) under section 5, page 43 of the National Policy on Education (NPE), have been established in the country to achieve the goals and objectives of teacher education, which includes producing highly motivated, conscientious and efficient classroom teachers for all levels of the educational system; encouraging the spirit of enquiry and creativity in teachers; and helping teachers with the intellectual and professional background adequate for their commitment to national goals, among others. Efforts for attainment of these teacher education goals and objectives largely depends on professionals like the academic staff, whose improved job management efficiency matters. Job management involves the planning, organizing, coordinating, and controlling of resources, tasks, and activities to achieve specific objectives within an organizational context (Project Management Institute, 2017). It includes overseeing and directing the work of individuals or teams to ensure efficient and effective completion of assigned duties and responsibilities (Kerzner, 2013). In the COEs, visibility of academic staff job management also known as job description, is projected through their various task (responsibilities) performance, which involves lecturing and instructional delivery, students counselling, assessment and evaluation, students project supervision, research development, exam monitoring and invigilation, script marking, micro-teaching and teaching practice supervision, necessary for the attainment of both institutional objectives and educational goals. They also engage in administrative activities, consultancy and auxiliary services, likewise, adjunct activities outside the institution, requiring their efficiency. Efficiency as viewed within the context of this study, can be referred to as academic staff proficiency, adeptness, expertise and skills applied for management of their responsibilities in order to achieve educational goals. All academic staff responsibilities are targeted towards improved job management efficiency. Improved job management efficiency, can be described as the application of strategies, technologies, or practices that enhance the efficiency, effectiveness, or quality of job management processes and outcomes (Fisher & Fisher, 2018). It involves implementing innovations or best practices to optimize efficiency in resource allocation, task allocation, and performance monitoring within job management frameworks (Dinsmore & Cabanis-Brewin, 2011).

Academic staff of the COEs therefore, are among the important human resources whose unceasing improved job management efficiency not only leads to production of vibrant teachers for all levels of the education system but equally, the overall achievement of teacher education goals and objectives. Academic staff can be referred to as professionals and experts employed by higher educational institutions to engage in teaching, research, consultancy services and academic administration (Australian Government Department of Education, Skills and Employment, 2020). They include lecturers, professors, researchers, instructors and administrative personnel involved in academic activities within the COEs, universities, or other higher educational settings (Barr, 2019). For academic staff improved job management efficiency, this is can be support through the utilization of modern technologies such as the Artificial Intelligence (AI). Artificial Intelligence (AI) according to Russell and Norvig (2022), can be referred to the simulation of human intelligence processes by machines, especially computer systems, to perform tasks that typically require human intelligence. It encompasses various techniques such as machine learning, natural language processing, and computer vision to analyze data, make decisions, and solve instructional problems autonomously (Nilsson, 2014). Examples of these AI technologies which can be utilized by academic staff for their improved job management efficiency as indicated by Arnold & Pistilli (2012), Bosch (2020), Jurafsky and Martin (2019), Romero and Ventura (2013), Russell and Norvig (2022), and VanLehn (2011) include Natural Language Processing (NLP) which helps to analyze and improve language skills through interactive exercises, **AI-powered student assessment systems which** automates grading of assignments, quizzes, and exams, **Intelligent Tutoring Systems (ITS) which** supports personalized learning experiences, **predictive analytics** that improve students' retention rates, AI-driven virtual teaching assistants that provides information on course schedules, assignments and resources, **AI-enhanced curriculum design that** analyze students' performance

data and feedback to optimize curriculum design and update content dynamically, and AI **Educational Data Mining (EDM)** providing techniques applied to educational data to discover patterns and trends, which inform instructional design and educational policy decisions. Others may include: **AI-based adaptive learning platforms** that adjust contents and difficulty levels based on real-time assessment of students learning progress and performance, AI models that analyze student work and provide personalized feedback on assignments, essays and projects, and AI-powered robots used in educational settings to assist with hands-on learning activities, coding workshops, and STEM education, among others. These examples demonstrate the diverse applications of AI technologies in educational settings, specifically in COEs, to enhance job management efficiency and improve educational outcomes. AI-driven learning management systems assist to streamline course delivery, assignment grading, and student feedback processes. AI tools are employed by academic staff to tailor educational materials and teaching strategies based on individual student needs and learning styles, thereby enhancing engagement and learning outcomes (Nilsson, 2014). Artificial Intelligence (AI) is increasingly revolutionizing various sectors, including education, by offering innovative solutions to enhance job management efficiency and effectiveness. Despite the growing potentials of AI to revolutionize educational practices and improve job management efficiency, its effective utilization or integration into the main stream of education in the Anambra State COEs seem to have been a difficult task and hindered by some challenges. In research contexts, challenges are viewed as specific issues or problems that require investigation or resolution to advance knowledge or practice (Creswell, 2014). Utilization refers to the act, process, or state of using something effectively or efficiently (Oxford University Press, 2021).

In educational contexts, utilization can specifically denote the effective application, incorporation or deployment of resources, technologies or strategies to achieve desired outcomes (Pritchett & Salganik, 2019). Within the context of COEs in Anambra State, Nigeria, integrating AI technologies holds promise for improving job management efficiency among academic staff. However, this potential is accompanied by several challenges that need to be understood and addressed to facilitate successful implementation. These challenges as pointed out by a few scholars like Wang and Hannafin (2021) include: inadequate technological infrastructure, skills gap, resistance to change, resource constraints, ethical and privacy concerns, academic staff perception of the potential benefits of AI, and preparedness to the use of AI, among others. This implies that many institutions lack adequate technological infrastructure such as high-speed internet and computing resources necessary to support AI applications effectively. Limited infrastructure and inadequate technical support can hinder the effective implementation and maintenance of AI technologies in COEs. Academic staff may encounter challenges related to outdated IT systems, insufficient network bandwidth, and unreliable access to AI tools and platforms. Improving infrastructure investments and providing robust technical support are essential for creating a conducive environment for AI adoption and utilization. Implementing AI systems often requires substantial initial investments for acquiring hardware, software licenses, and training programmes but financial constraints make the COEs struggle with limited budgets allocated for technological advancements, hindering their ability to adopt and maintain AI solutions for job management purposes. (Alaieri & Ghasem-Aghaee, 2020; Wang & Hannafin, 2021). There is often a significant gap in digital literacy and AI-specific skills among academic staff, which hinders their ability to utilize AI tools effectively (Nguyen, Pham, Nguyen & Le, 2020). Many academic staff may also lack the necessary training and skills to effectively utilize AI technologies in their job roles. AI systems require specialized knowledge in data analytics, machine learning algorithms, and AI applications relevant to educational contexts (Alaieri & Ghasem-Aghaee, 2020). Without adequate training programmes and professional development opportunities, academic staff may feel uncertain or unprepared to integrate AI into their daily job management practices. Academic staff may resist adopting AI technologies due to concerns about job displacement, unfamiliarity with AI applications, and fear of technology replacing human expertise (Brynjolfsson & McAfee, 2017). They may perceive AI as a threat to job security, fearing that automated processes could replace human roles or diminish the value of traditional teaching and administrative practices. Overcoming this resistance requires proactive efforts to educate staff about the benefits of AI, dispel myths, and demonstrate how AI can complement and enhance their job management efficiency (Alaieri & Ghasem-Aghaee, 2020). Limited funding and budgetary allocations for AI implementation projects constrain the adoption and integration of AI tools in educational settings (Taylor & Zamarripa, 2019).

The ethical implications of AI usage, such as data privacy, algorithmic bias, and transparency in decision-making, are critical concerns for academic staff in COEs. AI systems that collect, analyze, and interpret data may raise ethical dilemmas regarding student privacy, fairness in assessment, and the responsible use of AI-generated insights (Anderson & Rainie, 2021). Addressing these concerns requires clear

policies, guidelines, and ethical frameworks to ensure responsible AI deployment while maintaining trust and compliance with regulatory standards.

Another area of concern which might hinder academic staff utilization of AI technology in the COEs is their perceptions of the potential benefits of AI. When academic staff sees the potential benefits of using AI technology as a positive change towards assisting them with automated routine administrative tasks such as grading, scheduling, and data analysis for more meaningful instructional activities, this will leverage AI utilization for improved job management efficiency (Wu & Liu, 2020). Also, academic staff seeing the potential benefits of utilizing AI-powered tools in enhancing personalize learning experiences based on students' needs and preferences, potentially improving student engagement and learning outcomes; this will equally leverage their utilization. AI enables data analytics that can provide insights into student performance trends, helping educators make informed decisions about curriculum design and instructional strategies (Siemens, 2019; Taylor & Zamarripa, 2019). Additionally, the level of academic staff preparedness (that is, readiness) to the use AI in improving job management efficiency is equally of great concern. This readiness to embrace AI tools varies and is influenced by two main factors such as technical preparedness and institutional preparedness. Technical preparedness deals with the levels of digital literacy, skills, and proficiency that academic staff possess to impact their readiness to engage with AI technologies effectively (Nguyen & Brunskill, 2020; Wang & Hannafin, 2021). And institutional preparedness encompasses the readiness of COEs to support the integration of AI into educational practices in terms of resources, policies, and leadership commitment to AI integration, which influences staff preparedness (Nguyen et al., 2020; Zawacki-Richter, Marín, Bond & Gouverneur, 2021). All these aforementioned challenges can be controlled through facilitation of strategic interventions. Strategic interventions include various initiatives, programmes, policies, strategies and supports aimed at addressing challenges and promoting readiness. To foster effective AI utilization among academic staff, strategic interventions should include: implementing comprehensive training programs focused on AI literacy and application for academic tasks. Establishing policies that promote experimentation and innovation with AI technologies, while addressing concerns about job security (Brynjolfsson & McAfee, 2017; Siemens, 2019; Taylor & Zamarripa, 2019; Wu & Liu, 2020). Other strategic inventions will include encouraging strong collaboration between academic staff, technology experts, and educational researchers to develop AI solutions tailored to educational needs (Wu & Liu, 2020). Upgrading technological infrastructure to support AI implementations, including reliable internet connectivity and access to AI tools (Brynjolfsson & McAfee, 2017; Siemens, 2019; Taylor & Zamarripa, 2019; Wu & Liu, 2020). By addressing these challenges and leveraging strategic interventions, COEs in Anambra State can harness the transformative potential of AI to enhance job management efficiency among academic staff and improve educational outcomes. But it seems that limited research explores effective strategies and interventions that can mitigate the identified challenges and promote the successful adoption of AI among academic staff in COEs.

Understanding these interventions is crucial for developing targeted policies and initiatives aimed at fostering a supportive environment for AI integration in educational practices. Looking into the issues concerning academic staff utilization of AI for their improved job management efficiency is of utmost importance, considering the age of advanced technology in which we are in. it is expected that many academic staff of the COEs including those in Anambra Staff are familiar likewise prepared to use new technologies that will boost their efficiency at work. But in reality, many of these academic staff still rely heavily on the old conventional and traditional methodologies in executing their tasks. For improved job management efficiency in the COEs, academic staff should be exposed, knowledgeable and prepared to constantly utilize AI technology for achievement of instructional goals and objectives; but utilization of these AI becomes difficult, given some challenges. From all the foregoing discussions, it becomes essential to investigate the challenges impeding academic staff utilization of AI for their improved job management efficiency in COEs. Previous empirical studies like those of Alaieri & Ghasem-Aghaee (2020), Wang and Hannafin (2021), Nguyen, and Brunskill (2020) and Zawacki-Richter et al (2021) have been conducted in the aspects of use of modern technologies and AI as well, but all these studies have their differences, findings and mix which have warranted the present study. But none of these studies looked into the aspect of the challenges to academic staff utilization of artificial intelligence (AI) for improved job management efficiency in teacher education institutions. The dearth of researches in this area have motivated the researchers and deemed it possible to conduct this study. This study however, investigated the challenges to academic staff utilization of artificial intelligence (AI) for their improved job management efficiency in colleges of education (COEs) in Anambra State.

Statement of the Problem

Despite the growing potentials of Artificial Intelligence (AI) to revolutionize educational practices, including improving job management efficiency in Colleges of Education (COEs), there exists a significant gap in understanding the specific challenges hindering academic staff from effectively utilizing AI technologies. While AI offers promising solutions to streamline administrative tasks and enhance educational outcomes, its integration into the daily practices of academic staff in COEs faces substantial barriers. Academic staff play a pivotal role in the implementation and utilization of AI tools aimed at improving job management efficiency, yet the adoption rate remains low. The gap lies in identifying and addressing the specific challenges that deter academic staff from embracing AI technologies. These challenges include technological limitations, insufficient training and skills development opportunities, concerns over job security, and institutional constraints. The perceptions of academic staff towards AI technologies is also of great concern in this study. This includes their attitudes, beliefs, and concerns about the use of AI for improved job management efficiency, as well as, their current level of preparedness in terms of skills, training, and readiness to embrace AI tools effectively, has created a gap in knowledge which needs to be filled. Furthermore, there is a lack of comprehensive research focusing on the perceptions of academic staff regarding the potential benefits of AI for job management efficiency and their current level of preparedness to adopt AI tools effectively. All these gap underscores the need for empirical investigation to explore these factors in the context of COEs in Anambra State. In essence, understanding the challenges and perceptions related to AI utilization among academic staff is crucial for developing targeted interventions and strategies to promote effective adoption. Addressing these issues can lead to enhanced job management efficiency, improved educational outcomes, and ultimately contribute to the advancement of educational practices in COEs. By bridging this gap, educational institutions can better harness the transformative potentials of AI to meet the evolving demands of 21st-century education. This study sought to fill the existing gap by providing empirical insights into the barriers hindering AI utilization among academic staff in COEs in Anambra State. Hence, the problem in which this study sought to address is the challenges to academic staff utilization of AI for improved job management efficiency in COEs in Anambra State.

Purpose of the Study

The purpose of this study was to examine the challenges to academic staff utilization of artificial intelligence (AI) for improved job management efficiency in colleges of education (COEs) in Anambra State. Specifically, the study sought to:

1. Ascertain the specific challenges to academic staff utilization of AI for their improved job management efficiency in COEs in Anambra State.
2. Assess academic staff perceptions regarding the potential benefits of AI technology for their improved job management efficiency in COEs in Anambra State.
3. Analyze the current level of preparedness of academic staff to embrace AI tools and platforms for their improved job management efficiency in COEs in Anambra State.
4. Suggest strategic interventions to overcome barriers and enhance effective AI utilization among academic staff for their improved job management efficiency in COEs in Anambra State.

Research Questions

The following research questions guided the study:

1. What are the specific challenges to academic staff utilization of AI for their improved job management efficiency in COEs in Anambra State?
2. How do academic staff perceive the potential benefits associated with utilizing AI technology for their improved job management efficiency in COEs in Anambra State?
3. What is the current level of preparedness among academic staff to utilize AI tools and platforms for their improved job management efficiency in COEs in Anambra State?
4. What strategic interventions can be facilitated to enable academic staff overcome barriers and enhance effective AI utilization for their improved job management efficiency in COEs in Anambra State?

Methods

A descriptive survey research design was employed in the study. This research design entailed using a questionnaire to collect data from a sample of academic staff within their large population of academic staff in

the colleges of education in Anambra State. Information retrieved from the sample of academic staff was thereafter analyzed using a statistical tool in other to generate data and draw generalization based on the findings. Population of the study comprised 699 academic staff of two COEs in Anambra State (that is; FCE (T) Umunze – 448 academic staff & Nwafor Orizu COE Nsugbe COE – 251 academic staff). Sample for the study constituted 350 academic staff of these two COEs in Anambra State selected at 50% using the simple random sampling technique. The simple random sampling technique was employed in order to enable the researchers to randomly draw the samples of the academic according to their numbers within a given population. This is to ensure that all elements were given equal chance and opportunity to be selected from the two COEs used in the study. Nworgu (2015) opined that sample which ranged from 10% to 80% is representable and enough in situations where there is a large population in a study. As regards the sample used in the present study is sizeable enough to conduct the study. A 33-item questionnaire developed by the researchers was used for data collection. Items on the questionnaire was structured on a 4-point rating scale and response items of Strongly Agree (SA) - 4 points, Agree (A) - 3 points, Disagree (D) - 2 points and Strongly Disagree (SD) -1 point, in order to answer research questions one, two and four. While questionnaire items structured on 4-point scale of Highly Prepared (HP) - 4 points, Prepared (P) - 3 points, Less Prepared (LP) - 2 points and Not Prepared (NP) -1 point, was used to answer only research question three. The research instrument was constructed based on the purpose of the study and research questions. Validation of the research instrument was done by three expects from the Department of Educational Foundations, Faculty of Education, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. These experts validated the questionnaire in order to determine its face and content validity. Few corrections were made on the questionnaire by the experts based on double-barrel items, content coverage and sentence/language construction. The instrument was corrected before its final administration to the respondents. Reliability of questionnaire was established through a pilot-test carried out on a single administration of the instrument to a sample of 25 academic staff of two COEs in Enugu which was not part of the study. Scores obtained after the pilot test were collated and measured using Cronbach Alpha method which gave internal coefficient consistency of 0.88, 0.89, 0,83 and 0.77 for the four clusters respectively, which added up to give an overall coefficient of internal consistency of 0.84, showing that the questionnaire was reliable and trustworthy. Method of data collection was through direct and face to face contact, with the help of two research assistants from each of the two COEs sampled. An on-the-spot method was employed as well, which enabled the researchers and the two research assistants to meet the respondents, that is, academic staff, in their respective institutions to wait and collect the necessary information from them. The research assistants were communicated on how to collect the necessary information from the academic staff using the questionnaire. At first, the research assistants met with the heads of departments whom they also communicated the purpose and intention of the research before administering the questionnaire to their colleagues in their various departments. Distribution of the questionnaire to the respondents took a period of five working days. A total of 350 copies of the questionnaire were distributed to the academic staff sampled and all of them were retrieved at a 100% rate of return. Data collated were analyzed using mean statistics rated at 2.50 and standard deviation statistics for answering the research questions. The decision rule for taking decisions on the items on the questionnaire was rated at 2.50. Any mean score which rated at 2.50 and above was regarded to be in support of the statement and therefore termed as either agree (A) or prepared (P). Any mean score that rated below 2.50 was regarded as not in support of the statement and therefore termed disagree (D) or less prepared (LP).

Results

Research Question One: What are the specific challenges to academic staff utilization of AI for their improved job management efficiency in COEs in Anambra State?

Table 1: Mean Scores and SD of Academic Staff concerning the Specific Challenges to their Utilization of AI for their Improved Job Management Efficiency (N = 350 Academic Staff)

S/N	Please showcase your agreement concerning the specific challenges to your utilization of AI for improved job management efficiency in your college	SA	A	D	SD	X	SD	Decision
1.	Financial constraints to invest on AI utilization	161	117	29	43	3.13	1.01	**Agree**
2.	Poor/lack of mobilization of AI technologies likewise infrastructure such as hardware, software licenses, up-to-date IT systems, active ICT centre with constant internet	135	171	25	19	3.21	0.79	**Agree**

	accessibility, active network bandwidth, reliable access to AI tools and platforms							
3.	Lack the necessary skills, proficiency likewise expertise to effectively utilize AI technologies on job roles	153	125	38	34	3.13	0.96	**Agree**
4.	Lack of constant involvement in training/retraining AI programmes likewise professional development opportunities for capacity building to integrate AI on job management practices	127	142	45	36	3.03	0.95	**Agree**
5.	Resistance to change from old, traditional conventional teaching methodologies including skepticism towards new technologies	114	166	49	21	3.07	0.84	**Agree**
6.	Perceiving AI utilization as a threat to job security, fearing that automated processes could replace human roles	63	89	108	90	2.36	1.05	**Disagree**
7.	Lack of awareness of ethical implications of AI usage likewise privacy concerns hindering its utilization for improved job management efficiency	126	134	62	28	3.02	0.93	**Agree**
8.	Lack of technical support from outside stakeholders likewise colleagues and professionals affecting AI utilization	107	146	41	56	2.87	1.02	**Agree**
9.	Lack of institutional support to promote AI utilization in the curriculum	113	107	87	43	2.83	1.02	**Agree**
10.	Time constraints likewise heavy workloads to utilization of AI on job management practices	159	112	48	31	3.14	0.96	**Agree**
	Overall Mean Score & SD =					**2.98**	**0.98**	**Agree**

Analysis of result in Table 1 revealed that all the items from 1 to 5 and 7 to 10 were rated above 2.50 of the acceptable mean score by the academic staff in order to show their agreement with all these statements. Except for only items 6 which was rated below 2.50 of the acceptable mean score by the academic staff in order to show their disagreement with these statements. The overall mean score and standard deviation (SD) of 2.98 and 0.98 showcased closeness in the mean responses of the academic staff. Therefore, this result indicated the specific challenges hindering academic staff utilization of AI for their improved job management efficiency in COEs in Anambra State.

Research Question Two: How do academic staff perceive the potential benefits associated with utilizing AI technology for their improved job management efficiency in COEs in Anambra State?

Table 2: Mean Scores and SD of Academic Staff concerning their Perceptions towards the Potential Benefits Associated with Utilizing AI for Improved Job Management Efficiency (N = 350 Academic Staff)

S/N	**Please showcase your agreement concerning your perception on the potential benefits associated with utilizing AI technology for improved job management efficiency in your college.**	**SA**	**A**	**D**	**SD**	**X**	**SD**	**Decision**
	I perceive AI technology as:							
11.	being capable of automating routine administrative tasks, such as grading, scheduling, data management which can save time, reduce the administrative burden, likewise improve teaching and students engagement	152	117	28	53	3.05	1.06	**Agree**
12.	having the potential to personalize learning experiences for students, which also offers targeted interventions that cater to individual student needs	129	143	31	47	3.01	1.00	**Agree**
13.	valuable tool that assists in making data-driven decisions that inform instructional strategies and educational policies	133	124	49	44	2.99	1.01	**Agree**
14.	important work tool that enable professionals to work more efficiently, allocate resources effectively, likewise collaborate more seamlessly with colleagues and other stakeholders	155	110	46	39	3.09	1.01	**Agree**
15.	having capabilities in virtual simulations, augmented reality which fosters innovative teaching practices and creativity	147	129	31	43	3.09	1.00	**Agree**
16.	a valuable tool that improves all aspects of academic research development	114	138	44	54	2.89	1.03	**Agree**
	Overall Mean Score & SD =					**3.02**	**1.02**	**Agree**

Analysis of result in Table 2 revealed that all the items from 11 to 16 were rated above 2.50 of the acceptable mean score by the academic staff in order to show their agreement with all these statements. None of the items was rated below 2.50 of the acceptable mean score by the academic staff in order to show their disagreement with any of these statements. The overall mean score and standard deviation (SD) of 3.02 and 1.02 showcased closeness in the mean responses of the academic staff. Therefore, this result indicated that the academic staff holds positive perceptions regarding the potential benefits associated with utilizing AI technology for their improved job management efficiency in COEs in Anambra State.

Research Question Three: What is the current level of preparedness among academic staff to utilize AI tools and platforms for their improved job management efficiency in COEs in Anambra State?

Table 3: Mean Scores and SD of Academic Staff concerning their Current Level of Preparedness to Utilize AI Tools and Platform for their Improved Job Management Efficiency in Anambra State
N = 350 Academic Staff

S/N	Please showcase your agreement concerning your current level of preparedness to utilize AI tools and platforms for improved job management efficiency in your college	HP	P	LP	NP	X	SD	Decision
17.	I am currently experienced in using various AI technologies including platforms to leverage improved job management efficiency	41	61	119	129	2.04	1.00	**Less Prepared**
18.	I possess the requisite technical skills, proficiency likewise familiarity with AI technologies likewise platforms in order to boost AI utilization for improved job management efficiency	37	63	132	118	2.05	0.97	**Less Prepared**
19.	I possess high level of digital literacy to engage with AI technologies including AI platforms effectively for improved job management efficiency	39	53	128	130	2.00	0.98	**Less Prepared**
20.	Institutional support which I get through access to AI infrastructure and resources has positive impacts on my readiness towards utilizing various AI tools likewise platforms in order to enhance efficient job management practices	50	45	140	115	2.09	1.01	**Less Prepared**
21.	I have positive attitude likewise the mindset towards AI technology integration including using different platforms to promote innovations in teaching for improved job management efficiency	131	127	48	44	2.99	1.01	**Prepared**
22.	I constantly get involved in online peer learning networks likewise collaborative platforms with experienced colleagues who have successfully implemented AI for efficient job management practices	59	48	114	129	2.11	1.08	**Less Prepared**
	Overall Mean Score & SD =					**2.21**	**1.07**	**Less Prepared**

Analysis of result in Table 3 revealed that all the items from 17 to 20 and 22 were rated above 2.50 of the acceptable mean score by the academic staff in order to show their agreement with all these statements. Except for only item 21 which was rated below 2.50 of the acceptable mean score by the academic staff in order to show their disagreement with the statement. The overall mean score and standard deviation (SD) of 2.21 and 1.07 showcased closeness in the mean responses of the academic staff. Therefore, this result indicated that the academic staff were less prepared to utilize AI tools and platforms for their improved job management efficiency in COEs in Anambra State.

Research Question Four: What strategic interventions can be facilitated to enable academic staff overcome barriers and enhance effective AI utilization for their improved job management efficiency?

Table 4: Mean Scores and SD of Academic Staff concerning the Strategic Interventions which can be Facilitated to enable them Overcome Barriers and Enhance Effective AI Utilization for their Improved Job Management (N = 350 Academic Staff)

S/N	Please show your agreement concerning the strategic interventions which could be facilitated to overcome barriers and enhance effective AI utilization for improved job management efficiency in your college	SA	A	D	SD	X	SD	Decision
23.	Implementation of comprehensive professional development programmes focused on AI literacy likewise skills enhancement for academic staff capacity building towards utilization of AI for their job management efficiency	110	157	39	44	2.95	0.96	**Agree**
24.	Institutional support towards providing opportunities for practical applications of AI technology in educational contexts likewise hands-on training with AI tools to encourage academic staff utilization of AI for their job management efficiency	131	142	25	52	3.01	1.02	**Agree**
25.	Fostering collaborative communities of practice likewise supportive organizational culture through where academic staff can share experiences, exchange best practices, and collaborate on AI projects	114	155	48	33	3.00	0.92	**Agree**
26.	Encouraging support for peer learning networks for mutual support, knowledge sharing, and continuous improvement in AI adoption to enhance job management efficiency	123	136	54	37	2.99	0.96	**Agree**
27.	Developing clear policies likewise strategic plans that addresses funding allocation, ethical considerations, data privacy, in order to prioritize AI utilization in educational management	147	128	36	39	3.09	0.98	**Agree**
28.	Adequate mobilization of new AI infrastructure which enhances access and utilization of AI tools and resources for job management efficiency	151	117	48	34	3.10	0.97	**Agree**
29.	Provision adequate funding to support AI utilization for improved job management efficiency	108	162	37	43	2.96	0.95	**Agree**
30.	Improving academic staff preparedness through effective institutional and technical supports	128	143	30	49	3.00	1.01	**Agree**
31.	Upgrading including maintenance of old technological infrastructure to support AI integration, likewise providing reliable internet connectivity that supports efficient job management	134	107	48	61	2.90	1.10	**Agree**
32.	Constant orientation for academic staff to see the potential benefits of AI which positively impacts on AI utilization for improved job management efficiency	140	135	39	36	3.08	0.96	**Agree**
33.	Integration of AI into curriculum likewise reduced workloads for academic staff	118	158	25	49	2.99	0.98	**Agree**
	Overall Mean Score & SD =					**3.01**	**0.99**	**Agree**

Analysis of result in Table 4 revealed that all the items from 23 to 33 were rated above 2.50 of the acceptable mean score by the academic staff in order to show their agreement with all these statements. None of the items was rated below 2.50 of the acceptable mean score by the academic staff in order to show their disagreement with any of these statements. The overall mean score and standard deviation (SD) of 3.01 and 0.99 showcased closeness in the mean responses of the academic staff. Therefore, this result indicated the strategic interventions which can be facilitated to enable academic staff overcome barriers and enhance effective AI utilization for their improved job management efficiency.

Discussion of Findings

Finding of this study revealed the specific challenges hindering academic staff utilization of AI for their improved job management efficiency in COEs in Anambra State. They include: financial constraints; Poor/lack of mobilization of AI technologies likewise infrastructure such as hardware, software licenses, up-to-date IT systems, active ICT centre with constant internet accessibility, active network bandwidth, and

reliable access to AI tools and platforms; lack the necessary skills, proficiency and expertise; lack of constant involvement in training/retraining AI programmes likewise professional development opportunities for capacity building; resistance to change from old, traditional conventional teaching methodologies and skepticism towards new technologies; lack of awareness of ethical implications of AI usage likewise privacy concerns; lack of technical support from outside stakeholders, colleagues and professionals; lack of institutional support to promote AI utilization in the curriculum; and time constraints likewise heavy workloads. These factors collectively create barriers that impede the integration and effective use of AI to improve academic staff job management efficiency within COEs. Besides, perceiving AI utilization as a threat to job security, and fearing that automated processes could replace human roles, was not among the challenges hindering academic staff utilization of AI for their improved job management efficiency in the COEs. This finding corroborates and relates with findings of the studies of Alaieri and Ghasem-Aghaee (2020), Taylor and Zamarripa (2019), Wang and Hannafin (2021), Nguyen and Brunskill (2020) which discovered the challenges and barriers to effective utilization of AI technologies in institutions. They discovered that many institutions lacked adequate technological infrastructure such as high-speed internet and computing resources necessary to support AI applications effectively. There was often a significant gap in digital literacy and AI-specific skills among academic staff, which hinders their ability to utilize AI tools effectively (Nguyen et al., 2020). Also, limited funding and budgetary allocations for AI implementation projects constrained the adoption and integration of AI tools in educational settings, among others (Taylor & Zamarripa, 2019).

It was found through the finding of this study that the academic staff holds positive perceptions regarding the potential benefits associated with utilizing AI technology for their improved job management efficiency in COEs in Anambra State. They recognized AI's capabilities towards: automating routine administrative tasks, such as grading, scheduling, data management which can save time, reduce the administrative burden, likewise improve teaching and students' engagement; having the potential to personalize learning experiences for students, which also offers targeted interventions that cater to individual student needs; being a valuable tool that assists in making data-driven decisions that inform instructional strategies and educational policies; being an important work tool that enable professionals to work more efficiently, allocate resources effectively, likewise collaborate more seamlessly with colleagues and other stakeholders; having capabilities in virtual simulations, augmented reality which fosters innovative teaching practices and creativity; and being a valuable tool that improves all aspects of academic research development. Generally, the academic staff recognized AI capability to streamline administrative tasks, improve teaching effectiveness, and enhance overall educational outcomes. Despite the challenges, academic staff acknowledge the transformative potential of AI and express a willingness to explore its applications in their professional roles. This finding agrees with findings of the previous studies of Siemens (2019), Taylor and Zamarripa (2019) and Wu and Liu (2020) which indicated the benefits of AI which enhanced its integration in education as enabling educators make informed decisions about curriculum design and instructional strategies, improving students' engagements and learning outcomes, and automating routine administrative tasks for more meaningful instructional activities, among others.

The finding of this study further revealed that the academic staff were less prepared to utilize AI tools and platforms for their improved job management efficiency in COEs in Anambra State. Although, the academic staff had positive attitude and the mindset towards AI technology integration including using different platforms to promote innovations in teaching for improved job management efficiency, but they were not currently experienced in using various AI technologies including platforms to leverage improved job management efficiency. They did not possess the requisite technical skills, proficiency likewise familiarity with AI technologies likewise platforms in order to boost AI utilization for improved job management efficiency. Academic staff did not possess high level of digital literacy to engage with AI technologies including AI platforms effectively for improved job management efficiency. There was also no institutional support through access to AI infrastructure and resources in order to make positive impacts on their readiness towards utilizing various AI tools and platforms to enhance efficient job management practices in the COEs. The academic staff were also less prepared because they did not constantly get involved in online peer learning networks likewise collaborative platforms with experienced colleagues who have successfully implemented AI for efficient job management practices in the colleges. This finding collaborates with the finding of Nguyen and Brunskill (2020) study which confirmed that while educators recognize the potential benefits of AI, many lack the necessary skills and training to prepare them to effectively implement and utilize AI tools. The present study finding further relates with Nguyen and Brunskill (2020) which indicated that

educators who exhibited a growth mindset and openness to innovation were more prepared and inclined to explore and experiment with AI solutions to enhance job management efficiency. The present study finding corresponds with the finding of Zawacki-Richter et al. (2021) study which discovered that institutions which prioritized investment in AI infrastructure, provided access to AI tools, and offered ongoing technical support that more likely fostered a conducive environment for staff to adopt and integrate AI into their job management practices.

Finally, the finding of this study discovered strategic interventions which can be facilitated to enable academic staff overcome barriers and enhance effective AI utilization for their improved job management efficiency. These strategic interventions include: implementation of comprehensive professional development programmes focused on AI literacy and skills enhancement for academic staff capacity building towards utilization of AI; institutional support towards providing opportunities for practical applications of AI technology in educational contexts and hands-on training with AI tools to encourage academic staff utilization of AI; fostering collaborative communities of practice and supportive organizational culture where academic staff can share experiences, exchange best practices, and collaborate on AI projects; encouraging support for peer learning networks for mutual support, knowledge sharing, and continuous improvement in AI adoption; developing clear policies likewise strategic plans that addresses funding allocation, ethical considerations, data privacy, in order to prioritize AI utilization in educational management; adequate mobilization of new AI infrastructure which enhances access and utilization of AI tools and resources; provision adequate funding to support AI utilization; improving academic staff preparedness through effective institutional and technical supports; upgrading and maintenance of old technological infrastructure to support AI integration, and providing reliable internet connectivity that supports efficient job management; constant orientation for academic staff to see the potential benefits of AI which positively impacts on AI utilization; and integration of AI into curriculum and reduced workloads for academic staff. This finding is similar to Siemens (2019), Taylor and Zamarripa (2019) and Wu and Liu (2020) which discovered the strategies for staff to overcome barriers and enhance effective AI utilization in education. With these strategies AI technology can be fully incorporated and integrated into academic tasks in order to harness the transformative potentials of AI to enhance job management efficiency among academic staff and improve educational outcomes.

Conclusion

This study submits and concludes that there are several challenges hindering academic staff utilization of AI for improved job management efficiency in the COEs, which primarily revolves around financial constraints, lack of AI infrastructure provision and development, technological readiness, inadequate institutional and technical support, staff perceptions and readiness, among many others. Despite the potential benefits of AI in optimizing administrative tasks, improving teaching effectiveness, and enhancing student learning outcomes, its adoption among academic staff in COEs remains limited. Therefore, strategic interventions are crucial to overcoming these challenges and promote effective utilization of AI among academic staff. These interventions include comprehensive training programmes tailored to academic staff needs, establishing robust AI infrastructure within COEs, fostering a supportive organizational culture that embraces technological innovation, among others.

Recommendations

Based on the findings of this study, the following recommendations have been proffered:

1. Both the Federal and Anambra State government should allocate adequate financial resources and establish funding mechanisms that supports ongoing staff training likewise, the acquisition, mobilization, maintenance, upgrades and accessibility of AI technologies and infrastructure, in order to alleviate financial constraints and ensure sustained integration of AI for improved job management efficiency in the COEs.
2. Institutions should foster a collaborative environment among academic staff, IT professionals and educational administrators to share best practices, knowledge, ideas and experiences in AI integration through orientation, workshops, forums and seminars, in order to encourage academic staff to continue holding positive perceptions regarding the potential benefits associated with utilizing AI technology for their improved job management efficiency in the COEs.
3. The colleges with adequate support from National Commission for Colleges of Education (NCCE) should provide both institutional and technical support by encouraging continuous learning through

implementation of regular and comprehensive training programmes tailored to cover both basic and advanced AI skills, focusing on practical applications relevant to build academic staff confidence, competence and preparedness in utilizing AI technologies effectively for their improved job management efficiency in the COEs.

4. The government through NCCE should strive to implement all these strategic intervention programmes in the COEs through support for continuous professional development, adequate funding, technology infrastructural development, workload reduction, among others, to enable academic staff overcome barriers and enhance effective AI utilization for their improved job management efficiency.

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