MANAGEMENT OF TEACHER EDUCATION PROGRAMMES IN ERA OF ARTIFICIAL INTELLIGENCE IN FEDERAL COLLEGES OF EDUCATION NORTH WEST ZONE, NIGERIA

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Abstract

This study was on Management of Teacher Education Programmes in Era of Artificial Intelligence in Federal Colleges of Education North West Zone, Nigeria. The study had two objectives which are; ddetermine Management of student's enrolment in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria and find out management of student's records keeping in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria. In line with these objectives, two research questions and two null hypotheses were asked and formulated respectively. Related literature was reviewed along with fourteen (14) empirical studies. Descriptive research design was adopted for the study. A total of 346 respondents were sampled from the total population of 3134, using research advisor (2006). A structured questionnaire was used to collect data from the respondents. The data collected were presented in tables and analyzed using (weighted means of 3.0) to give the responses of respondents to the research questions. The two null hypotheses were tested using One Way Analysis of Variance (ANOVA) at 0.05 alpha level of significance. Descriptive statistics was used to analyze the bio- data of the respondents. Major findings of the study were that: All Federal Colleges of Education West Zone, Nigeria have not adopted the use of artificial intelligence in the management of student's enrolment and Artificial intelligence is yet to be adopted in the management of student's record keeping in Federal Colleges of Education West Zone, Nigeria. The following recommendations were made: All Federal Colleges of Education in North West Zone, Nigeria should fully integrate management information system in the management of student's enrolment and the management of all federal colleges of education should as a matter of necessity acquire more outdated ICT facilities and train and retrain personnel in order to effective manage students records in their respective institutions.The study concluded thatThe advent of the era of artificial intelligence is progressively changing the perception, approach concepts and methods of education management. The adoption of artificial intelligence will erupt significant changes that could both convenience and resolve challenges

Keywords: *Management, teacher education programme, artificial intelligence, students enrolment and records keeping*

Introduction

Artificial intelligence (AI) is having impact on every aspect of con-temporary life. Artificial intelligence (AI) is being increasingly widely used in an effort to imitate human cognitive abilities via applications that make people's lives simpler and more efficient. Artificial intelligence is also being used in the education industry to enhance the learning and teaching processes. People can employ AI systems to help them learn. The growing usage of artificial intelligence is reshaping the educational environment rapidly.

The importance of artificial intelligence in education is recognized worldwide. Artificial intelligence is already having a greater impact on education particularly in the developed world. Artificial intelligence has continued to evolve and day by day has more applications in the various fields of human activity with particular interest in education. Artificial Intelligence (AI) has the potential to address some of the biggest

challenges in education today, innovation in teaching and learning practices, and accelerating progress towards SDG 4 (UNESCO, 2019). Al is increasingly having an impact on education, bringing opportunities as well as numerous challenges (COE, 2022). It is important to note that like previous educational technologies, the era of artificial intelligence in education (AIEd) is already threatening to disrupt the status quo in the administration and management of education with proponents highlighting the potential for efficiency and democratization

As opined by Henry in Hesham, Vish and Pedro (2023) innovation does not imply that society should just work with what has been the standard, such as finding methods to make horses quicker. It is sometimes important to look beyond the conventional and create fresh methods of doing things. The same principles can be applied in education; rather than figuring out strategies to allow teachers to develop more skills on papers writing for example, why not automate teachers' tedious efforts by using computerized technology that can do the tedious work of teaching and free up teachers for more innovative tasks where they can deliver the learning process in an effective and efficient manner. In other words, through intelligent computing machines teachers roles can be improved in tasks involving test design, exam marking, and providing systemic feedback to students faster and with much ease.

Educational management is a process of planning, organizing, directing, and controlling resources (human, financial, and physical) within an educational institution to achieve specific goals and objectives. It involves various activities such as curriculum development, teacher training, student assessment, and school budgeting. Educational management is essential for ensuring that educational institutions run efficiently and effectively to provide quality education to students. The management of education requires pro-active leadership devoid of sentiment, corruption and nonchalant attitude.

Educational management is an important field of study that helps educational institutions to meet their goals and objectives. Effective educational management requires the use of appropriate management techniques and tools, such as strategic planning, performance management, and financial management Bush and Glover (2014). The management of education at all levels requires absolute concentration on provision, utilization and maintenance of the three basic resources (human, financial and material).

Teacher Education Programmes

Colleges of education have the mandate of preparing intakes to be qualified teachers to handle primary and junior secondary school levels of the educational enterprise who will in turn be responsible for educating the younger ones. Teaching has been observed to be one of the oldest occupations known to man, but the real revolution in teacher education come as a result of the Ashby Commission of 1960. The Ashby report observed that the country's human capital development depends largely on availability of qualified and competent teachers and recommended for attention to be given to teacher education because the whole system of education depends on it.

The most significant development in the teacher education sub-sector was the setting up of the National Commission for Colleges of Education (NCCE) under decree number 3 (section 5b & c) of 1986. This was in line with the policy decision to remove colleges of education from being appendages of unwanted self-determination for operational efficiency, NCCE thus, become a parastatal charged with the primary responsibility of making recommendations on national policies that are necessary for the full development of teacher education and professional preparation of teachers (Micaiah, 2013 & Ubani, 2014)

Management of student's enrolment in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

Artificial intelligence (AI) is rapidly transforming various industries, including education. AI is being used in educational management to enhance the learning process, improve student outcomes, and streamline administrative tasks. Although many of us may have gained some limited understanding or experience of AI in popular applications through the media or in our day-to-day lives, the use of AI in educational settings continues to be a mystery for many. The thought process automatically generates a great number of unanswered questions. How exactly does artificial intelligence (AI) operate in schools, and what precisely can it do there? Are among several un answered questions (Xiaoyang, 2023)

Artificial intelligence is simply utilizing computer machines to think and act humanly and rationally. This definition has four dimensions: think humanly, act humanly, think rationally, and act rationally. Today,

with the rapid development of artificial intelligence technology, intelligence and digitalisation have become the mainstream trend in today's world.

Every year, the population of applicants seeking admission continues to rise. The crowd at the Joint Admissions and Matriculation Board (JAMB) assessment centres shows how the market for university education has risen exponentially in recent years. Records from undergraduate matriculation examination bodies showed that over one million secondary school leavers annually seek placement into Nigerian universities (JAMB Registration Statistics, 2019).

Student enrolment refers to the number of students, regardless of age, enrolled in all types of tertiary educational institutions in the country, including public, private and all other institutions providing organized tertiary level educational programmes. Generally, enrolment pattern across the universities under consideration over the years had an upward trend. The deployment of artificial intelligence to manage the process of students enrolment in tertiary institutions will bring great relief and succor to the management of the tertiary institutions.

Artificial intelligence can complete multiple tasks independently or assisted, so when effectively deployed, it will promote the transformation of the management of students enrolment process that is often characterized with tediousness, stress and other forms of inconveniencies. Through AI the purpose of making the organization flexible, agile, elastic and creative will be achieved with much ease. Artificial intelligence in education management may play an important role in the organization of material and financial resources (Shen, 2023).

Management of student's records keeping in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

Artificial intelligence can greatly improve the speed and quality of data processing and be used to process large amounts of complex data, increasing data security. Artificial intelligence, when used extensively, not only improves the information processing capability of computer systems but also promotes their evolution toward intelligence and automation. Furthermore, it can completely ensure the system's stability. Massive amounts of data are generated every second in the big data environment. Artificial intelligence can greatly improve the speed and quality of data processing and be used to process large amounts of complex data to improve data security Alomari (2020). With the development of artificial intelligence and the arrival of the 5G communication era, in order to realize the effective management of massive network information, advanced artificial intelligence technology can be adopted, many scientific and reasonable solutions can be compiled, and an expert knowledge sharing system can be established to gradually improve the data analysis and processing effect.

School records are official documents, books and files containing essential routinely updated information about students, staff, the quality of teaching and learning, as well as activities taking place in the school (Nwaomah, 2017). School records include all available and accessible documents containing important information on school personnel (students, teaching and nonteaching) past and present activities of the school as well as other relevant information such as school policies, educational laws, minutes of school meetings, including information from the government, educational bodies, and other stakeholders pertaining to the growth and development of the school (Ololube, 2013)

School records are genuine documents of occurrences in a school and they constitute a store house of useful information to students, parents, teachers, school heads and employers on the activities and progress of staff and students. These records could be on paper formats such as reports, letters, memos, books, journals and diaries or it could be in other formats like roll such as microfilm, microfiche or computer output microfiche (COM) formats (microforms); as photographs, including prints, negatives, transparencies and x-ray films; as sound recordings on disk or tape; as moving images on film or video (audiovisual records); as electronic text or images copied on magnetic tape or magnetic or optical disk or held in online databases (electronic records; formerly known as machine-readable records); as three-dimensional models, scientific specimens or other objects; or as combinations of any of the above formats in an electronic form known as multimedia (Queensland State Archives 2010).

The conventional student record keeping method relies heavily on individual experience and subjective assessment, placing significant emphasis on administrative and disciplinary management. These traditional educational models gradually reveal their are problems of low efficiency, inaccurate information, and difficulty in meeting personalized requirements. These led to many students encountering difficulties in

accessing accurate records of their academic performance. With the development of information technology, more and more intelligent systems are being used in the field of education and record keeping in particular, but there are some shortcomings in intelligent record keeping To address these challenges, the use of AI technology in this article has been recognized as one of the solutions.

Objectives of the study
The following objectives are to guide the study
1. Determine Management of student's enrolment in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria
2. Find out Management of student's records keeping in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

Research Questions
The following research questions are formulated to guide the study
1. How is student's enrolment managed in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria
2. To what extent is student's records keeping managed in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

Research Hypotheses
The following null hypotheses are formulated for the study
1. There is no significant difference in the opinions of the respondents on management of student's enrolment in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria
2. There is no significant difference in the opinions of the respondents on management of student's record keeping in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

Research Methodology
Research Design
This study is a descriptive survey research. It is a descriptive survey research because it is based principally on the views of the respondents from the population of study. The research design permits the gathering of information through the use of questionnaire and/or interview from a population based on appropriate sampling techniques. This agreed with the opinion of Mustapha in Usman (2021) that survey research is a technique in research where the desired characteristic of a given population is systematically examined.

Population of the Study
There are five (5) Federal Colleges of Education (FCE) located in North-West of Nigeria which was used for the study. The target population of this study included the management staff, Deans and HODs in Federal Colleges of Education (FCOE) in North-West of Nigeria. The total population for this study was therefore 3134. Details of the population distribution are on table 1

Table 1: Population of the study

s/n	Names of Colleges	Mgt staff	Deans	HODs	Lectures	Total
1	Federal Colleges of Education Zaria	7	9	45	905	966
2	Federal Colleges of education Kano	7	7	36	850	900
3	Federal Colleges of Education (Tech) Bichi Kano	7	10	21	538	576
4	Federal Colleges of Education (tech), Gusau	7	9	29	249	294
5	Federal Colleges of Education Katsina	7	8	32	351	398
6	**Total**	**35**	**43**	**163**	**2893**	**3134**

Source: Federal Ministry of education 2020

Sample and Sampling Procedures

The sample size of the study is 346 respondents, which comprise 25 mgt staff, 25 Deans, 50 HODs and 246 lecturers. Research advisor table (2006) was used to determine the sample size of the study. The research advisor table, indicates that a population of above 3000 to 3500 should have a corresponding sample size of 346. Thus, the sample size of 346 was chosen for the study.

In distribution the sample size among the respondents, the researcher adopted proportionate sampling technique for lecturers which gave the researcher the opportunity to select a sample size based on the respective population of each colleges of education. However, purposive sampling techniques was used for management staff Deans and HODs respectively. This is in line with the opinion of Nwana (2007) who opined that a researcher can use his or her discretion to determine the sample of a study based on his or her understanding of the population of the study. Details of the distribution are on Table 2

Table 2: Sample of the study

s/n	Names of Colleges	Mgt staff	Deans	HODs	Lecturers	Total
1	Federal Colleges of Education Zaria	5	5	10	59	79
2	Federal Colleges of Education Kano	5	5	10	54	74
3	Federal Colleges of Education(Tech) Bichi Kano	5	5	10	48	68
4	Federal Colleges of Education (tech), Gusau	5	5	10	41	61
5	Federal Colleges of Education Katsina	5	5	10	44	64
6	**Total**	**25**	**25**	**50**	**246**	**346**

Instrumentation

The instrument for data collection was primarily questionnaire developed by the researchers The questionnaire, entitled Management of Teacher Education Programmes in Era of Artificial Intelligence in Federal Colleges Of Education Questionnaire (MTEPEAIQ) was meant to elicit information from Mgt staff, Deans, and HODs . The questionnaire which was self-designed consists of three sections, A, B and C with 20 item statement was used for this study. The Likert rating scale of strongly agree (SA), Agree (A), undecided (U), strongly disagree (SD) and disagree (D) were used to obtain raw data from the respondents.

Procedure for Data Analysis

The data collected through the questionnaire was analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics frequency and simple percentage was used to analyze the bio-data of the respondents, while weighted mean of 3.0 was used to analyse responses of the respondents to the research questions. However, inferential statistics of the F-test One –Way Analysis of Variance (ANOVA) at 0.05 levels of significant was used to test the two (2) postulated hypotheses of the study in order to determine whether or not to retain the respective null hypotheses or otherwise.

Results
Hypothesis I (HO$_1$): There is no significant difference in the opinions of the respondents on management of student's enrolment in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

The hypothesis relates to item 1-10 on the questionnaire. The respondent's opinions were collected, analyzed and presented in table. Details are entered in table 3

Table 3: Summary of the One Analysis of Variance (ANOVA) on management of student's enrolment in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.983	3	.661	0.410	0.046
Within Groups	583.873	343	1.613		
Total	585.856	346			

From table 3, the F-value is 0.410 and the P-value is 0.046 at 0.05 levels of significance. Since the P-value was less than the level of significance set for the study, the hypothesis was therefore rejected, thus, there was no Significant Difference of Opinion of respondents on management of student's enrolment in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

Hypothesis II (HO₂): There is no significant difference in the opinions of the respondents on management of student's records keeping in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

The hypothesis relates to item 11-20 on the questionnaire. The respondents' opinions were collected, analyzed and presented in table. Details are entered in table 4.

Table 4.: Summary of the One Analysis of Variance (ANOVA) on management of student's records keeping in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.808	3	2.936	2.035	0.009
Within Groups	522.136	343	1.442		
Total	530.944	346			

From table 4., the F-value is 2.035 and the P-value is 0.009 at 0.05 levels of significance. Since the P-value was less than the level of significance set for the study, the hypothesis was therefore rejected, thus, there is no significant difference in the opinions of the respondents on management of student's records keeping in era of Artificial Intelligence in Federal Colleges of Education West Zone, Nigeria

Findings:
1. All Federal Colleges of Education West Zone, Nigeria have not adopted the use of artificial intelligence in the management of student's enrolment. However, most of the federal colleges deployed the use of management information system in the management of students enrolment
2. Artificial intelligence is yet to be adopted in the management of student's record keeping in Federal Colleges of Education West Zone, Nigeria. however, most of the school institutions used ICT facilities in the management of students records

Discussions of the Findings
This study was able to establish that; all Federal Colleges of Education West Zone, Nigeria have not adopted the use of artificial intelligence in the management of student's enrolment. However, most of the federal colleges deployed the use of management information system in the management of student's enrolment. It was further revealed that 89 % of the respondents agreed that their institutions were not yet ripe for the use of artificial intelligence. 95 % of the respondents further established that lack of resources was the major hindrance to the use artificial intelligence in Federal Colleges of Education West Zone, Nigeria. the finding is in line with

This study was able to establish that; artificial intelligence is yet to be adopted in the management of student's record keeping in Federal Colleges of Education West Zone, Nigeria. However, most of the school institutions used ICT facilities in the management of students records. 92 % of the respondents attributed it inadequate infrastructure / facilities, personnel among others. 96 % of the respondents believed that the used of already existing ICT facilities for students record keeping is effective and there is no need waste resources on artificial intelligence in Federal Colleges of Education West Zone, Nigeria. the finding is in line with.

Conclusions

The advent of the era of artificial intelligence is progressively changing the perception, approach concepts and methods of education management. The adoption of artificial intelligence will erupt significant changes that could both convenience and resolve challenges. However, it may take a while before developing countries like Nigeria to be can be able to integrate artificial intelligence in management of our education system.

Recommendations

All Federal Colleges of Education in North West Zone, Nigeria should fully integrate management information system in the management of student's enrolment. This will significant improve the students enrolment process pending on when artificial intelligence can be applicable

The management of all federal colleges of education should as a matter of necessity acquire more outdated ICT facilities and train and retrain personnel in order to effective manage students records in their respective institutions

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