

Application of AI for Curriculum Design and Predictive Analysis of Student's Performance for Transformative Management of Teacher Training Program in Shehu Shagari College of Education, Sokoto

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Abstract

This study was conducted on application of artificial intelligence and digital connectivity for transformative management of teacher training program in Shehu Shagari college of education, Sokoto. Examine the impact of AI for Curriculum design and delivery for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto and to determine the application of AI for Predictive analysis of student's performance for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto. In line with these objectives, two research questions, two null hypotheses were formulated. Related literatures were reviewed. Descriptive research design was adopted for the study, a total of 181 respondents were sampled from the total population of 132, through the use of research advisor (2006). Questionnaire was used to collect data from the respondents. The data collected were presented in table and were analyzed using weighted mean. The two null hypotheses were tested using ANOVA at 0.05 alpha levels of significance. Descriptive statistic was used. findings of the study were; The use of AI for curriculum design and delivery in Shehu Shagari College of Education, Sokoto is not fully operational but efforts are being made in that direction and Integration of Artificial Intelligence (AI) for predictive analytics to forecast students performance is not fully deployed in Shehu Shagari College of Education, Sokoto. It was recommended that: Staff of Shehu Shagari College of Education should be well equip with specialized skills and knowledge on the use of AI for teacher training programme through workshops, seminars and self development and all the existing and operational systems in Shehu Shagari College of Education should be made to work collaborative and seamlessly in order to be able to infuse AI into the operational systems. The study concluded that the use of AI for intelligent tutoring, grading of assignments and exams, curriculum design and delivery and predictive analysis of student's performance is not fully deployed in Shehu Shagari College of Education, Sokoto

Keywords: Artificial intelligence, curriculum design and delivery and predictive analysis, student's performance

Cite this as (APA): Bello, I., & Tambuwal, K. I. (2026). Application of AI for Curriculum Design and Predictive Analysis of Student's Performance for Transformative Management of Teacher Training Program in Shehu Shagari College of Education, Sokoto. *Rima International Journal of Education*, 5(6), 104—124. DOI: <https://doi.org/10.65760/rijessu.v5.6.7>

Introduction

Artificial Intelligence (AI) has become an increasingly important component of education systems worldwide. Its use has expanded from experimental applications to practical activities such as personalised learning, intelligent tutoring, automated assessment, lesson planning, learning analytics, academic advising, language learning, and administrative decision-making. Globally, the rapid emergence of generative AI tools since 2022 has significantly increased students' and teachers' interaction with AI. Recent OECD PISA 2025 evidence indicates that AI chatbots are now used for schoolwork by a majority of students in most participating countries and economies. Students commonly use AI to help them learn, conduct preliminary research, draft written assignments and summaries texts (UNESCO, 2025)

Today, with the rapid development of artificial intelligence technology, intelligence and digitalization have become the mainstream trend in today's world. In education, the use of AI has revolutionized the traditional mode of teaching and management, greatly enhancing the effectiveness and standard of instruction. The application of Artificial Intelligence (AI) in education has the potential to transform traditional curriculum development processes by offering innovative solutions to enhance learning outcomes. The integration of Artificial Intelligence (AI) into teacher education programs in Nigeria addresses the need for contemporary teaching skills suitable for the 21st century. Artificial intelligence is the science of making machines that can think like humans. It can do things that are considered "smart." AI technology can process large amounts of data in ways, unlike humans. The goal for AI is to be able to do things such as recognize patterns, make decisions, and judge like humans.

Curriculum development is a planned, purposeful, progressive, and systematic process aimed at creating positive improvements in the educational system. Whenever changes or developments occur around the world, school curricula are affected (Khan & Yacef, 2022). Integrating artificial intelligence (AI) into curriculum development in Shehu Shagari College of Education, Sokoto can enhance educational experiences and better prepare students for the rapidly evolving technological landscape. The following are several ways through which AI can be utilized in curriculum development in Shehu Shagari College of Education, Sokoto: Predictive technology, an integral component

of AI-driven assessments, plays a critical role in advancing educational evaluation Pardamean et al (2022); Predictive analytics, this involves the use of historical and current student data to forecast future learning outcomes. This technology has been effectively applied in various educational settings to identify students at risk of failing or underperforming, thus allowing educators to implement timely interventions (Vistorte *et al*, 2024)

AI has the potential to transform Teacher Education Programmes, but there are also significant limitations and challenges that need to be considered; and addressing these limitations requires careful planning, ongoing evaluation, and a commitment to ethical and responsible use of AI in teacher education programme (Innocent, 2023). Therefore, the application of AI in teacher training programmes in Shehu Shagari College of Education, Sokoto is saddled with many challenges, such as lack of technical expertise and resources in Shehu Shagari College of Education, Sokoto. AI requires specialized skills and knowledge, and the institution does not have adequate and the necessary resources to implement AI for curriculum development effectively. There is near absence of training and professional development opportunities for lecturers and management staff to use AI effectively Shehu Shagari College of Education, Sokoto. This to a large extent has affected the required transformative management of teacher training programmes

Another challenge is the issue of compatibility between different existing information systems with AI systems. Educational institutions like Shehu Shagari College of Education, Sokoto, uses several different information systems, such as learning management systems, student information systems, and assessment tools. So, migrating or integrating the two pose a serious challenge because of the technicalities involves.

Shehu Shagari Colleges of Education lack sufficient computers, reliable internet connectivity, digital laboratories, servers and other infrastructure required for effective AI-supported curriculum development. AI-supported curriculum development depends on continuous access to electricity for computers, internet equipment and digital learning platforms, which is not guaranteed in Shehu Shagari Colleges of Education. In addition, Generic AI systems are trained largely on globally available information and may not adequately reflect the linguistic, cultural, social and educational realities of North-East Nigeria among others.

This study will adopt Technology Acceptance Model (TAM) as it's theoretical framework. The framework explains why and how people accept, adopt, and use a particular technology. It was developed by Fred Davis in 1989 and has been extensively applied in education, information systems, healthcare, business, and other fields. The technology acceptance model (TAM) explains the acceptance of information systems by individuals. TAM postulates that the acceptance of technology is predicted by the users' behavioural intention, which is, in turn, determined by the perception of technology usefulness in performing the task and perceived ease of its use.

TAM is particularly useful in educational research because it explains why teachers, students, administrators, and other educational stakeholders decide to accept or reject technological innovations. In a teacher-training context, for example, teacher educators may perceive an AI-based predictive analytics system as useful if they believe it can help them identify students who are likely to perform poorly and enable them to provide appropriate interventions. If teacher educators find an AI predictive system easy to learn, understand, and operate, they are more likely to accept and use it. This theory is therefore relevant to this study because is premised on individuals wiliness to accept new technology based on usefulness and ease of use. This study is particularly concerned with how lecturers in Shehu Shagari college of education will accept to apply AI in curriculum design and delivery and predictive analysis of student's performance.

Several scholars and researchers such as For Zhang and Li (2021), Wang et al. (2020), Singh and Singh (2021) and Smith (2021& 2022) have identified ways the applications of AI are evident in the field of educational management by extension teachers training programmes. AI can be used to grade assignments and exams, which can save lecturers time and provide more consistent grading. This is in line with the submission of Ecker et al. (2018), that automated grading systems have been shown to be as accurate as human graders in many cases.

AI has the potential to transform Teacher Education Programmes, but there are also significant limitations and challenges that need to be considered; and addressing these limitations requires careful planning, ongoing evaluation, and a commitment to ethical and responsible use of AI in teacher education programme (Innocent, 2023).

One of the primary challenges of AI in teacher training programme is the lack of ethical and legal guidelines. AI algorithms can produce biased and discriminatory results, and it is essential to ensure that AI is used ethically and transparently. It is crucial to have guidelines that protect student's privacy, ensure data security, and prevent AI from being used for surveillance purposes. This aspect is seriously lacking in Shehu Shagari College of Education, Sokoto, consequently, the required transformative management of teacher training programmes is therefore hindered, yet there is the need for transformative teacher training programme

Another challenge is the lack of technical expertise and resources Shehu Shagari College of Education, Sokoto. AI requires specialized skills and knowledge, and the institution does not have adequate and the necessary resources to implement AI effectively. There is near absence of training and professional development opportunities for lecturers and management staff to use AI effectively Shehu Shagari College of Education, Sokoto. This to a large extent has affected the required transformative management of teacher training programmes

Another challenge is the lack of interoperability and compatibility between different AI systems. Educational institutions like Shehu Shagari College of Education, Sokoto, uses several different systems, such as learning management systems, student information systems, and assessment tools. It is essential to ensure that these systems can work together seamlessly to provide a cohesive and efficient educational experience. Hence the need for this study

Application of AI for Curriculum design and in teacher training programmes

Teachers' knowledge plays a fundamental role in the successful educational integration of any technology. Consequently, "in the Artificial Intelligence (AI) era, pedagogical competence is crucial". The integration of AI in the educational field also demands careful planning, since "the design of activities, content, resources, evaluations and time for each course and career must be planned, based on the objectives and profile of the graduating student that is desired to be achieved" (Salmeron et al., 2023). Therefore, teachers' pedagogical competence in planning tasks is reflected in their ability to didactically select, organize, and integrate AI or generative artificial intelligence (GenAI) tools (such as those designed to create texts, images, multimedia presentations, or videos) into the curriculum (Viera, 2024),.

AI can also enhance the personalization of education by adapting curriculum content to individual student needs. Through machine learning techniques, AI algorithms can analyze student data, such as learning preferences, strengths, and weaknesses, to develop customized learning pathways (An & Xie, 2020) this personalized approach, ensures that each student receives tailored instruction, maximizing their learning potential and engagement, this implies that each student progresses at their own pace (Al-Enezi, & Alshareeda, 2020).

These tools provide teachers with the possibility of generating different types of educational content. For example, they can support the creation of written materials to improve foreign language learning with ChatGPT or assist in the development of assessments. They can also facilitate the design of visual art with applications such as DALL-E 3 and Midjourney (Hutson & Lang, 2023), as well as the creation of interactive videos using tools like Synthesia or Heygen, which allows you to generate a realistic avatar of the teacher, creating a personalized experience for students (Amado-Salvatierra et al, 2023)

Application of AI for Predictive analysis of student's performance in teacher training programmes

In recent years, the integration of Artificial Intelligence (AI) and predictive analytics has revolutionized various fields, including education. By leveraging vast amounts of student data, institutions are increasingly turning to AI-driven predictive analytics to forecast student performance and enhance educational outcomes. This innovative approach holds promise for identifying at-risk students early, personalizing learning experiences, and optimizing educational resources effectively. Predictive analytics in education involves the application of advanced algorithms to analyze historical data, student demographics, academic behaviors, and performance indicators (Mwita, 2022).

These algorithms generate actionable insights that empower educators and administrators to make informed decisions tailored to individual student needs. By predicting academic outcomes with greater accuracy, institutions can implement timely interventions, allocate resources efficiently, and foster a supportive learning environment conducive to student success. The application of AI-powered predictive analytics in education leverages vast amounts of data generated from student information systems, learning management platforms, assessment results, demographic data, and even socio-

economic factors (Simon and Riede, 2020). By employing advanced algorithms, predictive models can identify patterns and correlations within these datasets to generate actionable insights for educators and administrators.

Artificial intelligence has storage capabilities that can help obtain rich data, including text, audio, video and other multimedia materials. It can automatically generate work files in the middle and end of the semester to facilitate the situation in the phase conduct comparative analysis and summary. At the same time, artificial intelligence collects data and summarizes according to specific procedures. The collected data has corresponding classification standards, which is convenient for direct comparison. At the same time, the collected data is rich and diverse, which can help school administrators to understand the entire school and even the area (Wenjun, 2021)

It is also obvious that the use of AI for intelligent tutoring, grading of assignments and exams, curriculum design and delivery and predictive analysis of students performance is not fully deployed Shehu Shagari College of Education, Sokoto. This will assist in closing the gap identified.

Objectives of the study

The following objectives are formulated to guide the study

1. Examine the impact of AI for Curriculum design and delivery for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto.
2. Determine the application of AI for Predictive analysis of student's performance for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto.

Research Questions

This research will answer the following questions:

1. How is AI for Curriculum design and delivery applied for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto?

2. To what extent is AI for Predictive analysis of student's performance applied for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto?

Research Hypotheses

HO₁: There is no significant difference in the opinion of respondents on the application of AI for Curriculum design and delivery for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto.

HO₂: There is no significant difference in the opinion of respondents on the application of AI for Predictive analysis of student's performance for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto.

Methodology

The study is quantitative in nature because it involved collection data through the opinions of the respondents, therefore, descriptive survey research design was deployed.

Population of the Study

The population of the study comprised Deans, HODs and lecturers in Shehu Shagari College of Education, Sokoto. There are seven (7) deans from seven schools, thirty one HODs (31) and one hundred and thirty three lecturers. Making a total population of one hundred and eighteen (181). Details of the distribution is on table 1

Table 1:

Population of the study

S/n	Schools	Deans	HODs	Lecturers	Total
1	School of general education	1	5	75	81
2	School of secondary education sciences	1	5	75	81
3	School of secondary education languages	1	5	75	81
4	School of art and social studies	1	5	75	81
5	School of general education voc and tech	1	4	60	65
6	Preliminary studies	1	5	75	81
7	School of general education Adult and non-formal	1	3	45	49
	Total	7	32	480	519

Sample of the Study

The sample size of the study is 234, this was determined by relying on research advisor (2006). From the table, a population of 519 has a corresponding sample size of 234. Since the number of schools is just seven (7) which is manageable, the seven schools were adopted as the sample of the study. Proportionate sampling technique was used to distribute the sample size among the Deans, HODs and lecturers in the 7 schools accordingly.

Therefore, there are 7 deans, 21 HODs and 206 lecturers sampled for the study. Details of the distribution is on table 2

Table 2:

Sample of the study

S/n	Schools	Deans	HODs	Lecturers	Total
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1	School of general education	1	3	29	33
2	School of secondary education sciences	1	3	29	33
3	School of secondary education languages	1	3	29	33
4	School of art and social sciences	1	3	29	33
5	School of Secondary education voc and tech	1	3	27	31
6	Preliminary studies	1	3	29	33
7	School of Secondary education Adult and non-formal	1	3	25	29
Total		7	21	206	234

A self -structured questionnaire in line with the research questions was used as instrument for data collection. The questionnaire consists of three sections, A, B and C with 20 item statement used for this study. It was designed on likert scale rating of strongly agree (SA), agree (A), undecided (U), disagree and strongly disagree and used to obtain raw data from the respondents

The drafted questionnaire was subject face and content validity. The instrument was given to experts in the field of measurement and evaluation for validation. All observations and suggestions raised were corrected and effected before the instrument was certified to be used for this study.

The data collected from the pilot test was subjected to Cronbach Alpha statistical tool at 0.05 levels of significance. This was to determine the reliability of the instrument. The instrument was therefore declared reliable when the liability coefficient was found to be 0.87.

The designed Questionnaire was the instruments used for data collection. On the spot method of data collection was deployed. The questionnaire were administered to the respondent directly and the researcher waited to collect the administered questionnaire. 234 questionnaire were administered, and 234 were 234 were completely filled and returned

The data collected was analyzed using Statistical Package for Social Science (SPSS), using descriptive statistics such as frequency counts, simple percentages and weighted mean. However, inferential statistics of the F-test One –Way Analysis of Variance (ANOVA) at 0.05 levels of significant was

used to test the four (4) postulated hypotheses of the study in order to determine whether or not to retain the respective null hypotheses.

Research Question One: How is AI for Curriculum design and delivery applied for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto?

Table 3:

Mean score of respondents on application of AI intelligent for Curriculum design and delivery for Transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto

S/N	Item Statement	Respondents	SA	A	UD	D	SD	N	Mean
1	Artificial intelligence tools enhance the design of teacher education curricula by aligning learning outcomes with current educational needs.	Dean	1	3	-	2	1	7	3.9
		HODs	9	2	1	3	6	21	3.9
		Lecturers	67	102	1	1	6	20	4.3
						0		6	
2	AI-supported curriculum planning improves the quality and relevance of teacher training programmes.	Dean	2	1	-	1	3	7	3.6
		HODs	12	3	2	3	1	21	4.7
		Lecturers	68	106	1	2	7	20	4.1
						4		6	
3	AI applications facilitate the development of personalized learning experiences for teacher trainees.	Dean	2	2	-	1	2	7	3.2
		HODs	12	3	1	3	1	21	3.9
		Lecturers	10	46	2	1	38	20	4.0
			2			7		6	
4	The integration of AI into curriculum delivery increases the effectiveness of classroom instruction in teacher training institutions.	Dean	1	4	-	2	-	7	3.6
		HODs	8	5	1	6	3	21	3.6
		Lecturers	10	67	-	3	2	20	4.1
			0			6		6	
5	AI-assisted assessment provides	Dean	4	1	-	1	1	7	3.1
		HODs	3	6	1	3	8	21	3.7

	timely and accurate feedback that enhances teacher trainees' learning	Lecturers	80	62	1	1	26	20	3.8
						7		6	
6.	AI technologies improve lecturers' efficiency in preparing instructional materials and learning resources.	Dean	2	2	-	1	2	7	3.9
		HODs	10	2	1	3	6	21	3.6
		Lecturers	52	93	-	4	20	20	3.0
						0		6	
7	The use of AI supports data-driven decision-making for continuous curriculum improvement in teacher training programmes.	Dean	2	3	-	2	-	7	3.8
		HODs	7	5		5	3	21	3.9
		Lecturers	16	28	-	1	1	10	3.8
			4			0		5	
8	AI enhances collaboration between lecturers and teacher trainees through interactive and adaptive learning platforms.	Dean	4	1	-	1	1	7	3.5
		HODs	7	9	2	2	1	21	4.0
		Lecturers	98	66	-	3	7	20	3.5
						4		6	
9	The adoption of AI in curriculum design and delivery contributes to the transformative management and modernization of teacher training programmes.	Dean	1	4	-	2	-	7	3.4
		HODs	8	5	1	5	4	21	3.5
		Lecturers	10	55	3	4	2	20	2.9
			0			6		6	
10	Teacher training institutions should invest in AI technologies and staff capacity building to improve curriculum design and instructional delivery.	Dean	3	1	1	1	1	7	3.4
		HODs	6	4	2	3	6	21	3.9
		Lecturers	41	92	2	1	56	20	3.9
						5		6	

Aggregate Mean= 3.7

Table 3 revealed the views of Deans, HODs and Lecturers on application of AI intelligent for Curriculum design and delivery for Transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto. Item 1 showed the responses of respondents the item statement. From the responses of the respondents, the item statement was accepted by all the respondents with the mean score of 3.9, 3.9 and 4.3 respectively. Item 2 shows the responses of respondents, the mean scores of the respondent show that the item statement was accepted by the respondents with the mean scores of 3.6, 4.7 and 4.1 for Deans, HODs, and Lecturers respectively. Item 3 was similarly accepted by the respondents with the means scores, Deans 3.2, HODs 2.9 and Lecturers 4.0. Item 4 had mean scores of 3.6, 3.6, and 4.1 for Deans, HODs and Lecturers respectively and was accepted. Item 5 was accepted by the respondents with the mean scores of 3.1, 2.7 and 3.8 for Deans, HODs, and Lecturers.

From the responses of the respondents on item 6, the item statement was accepted by the respondents with the mean score of 3.9, 2.6 and 2.0 respectively. Item 7 shows the responses of respondents which indicated acceptance by all the respondents with the mean scores of 3.8, 3.9 and 3.8 respectively. Item 8 showed the responses of the respondents to the item statement with the following mean scores Deans 3.5, HODs 4.0 and Lecturers 3.5. Item 9 has the mean scores of 3.4, 3.5, and 2.9 for Deans, HODs and Lecturers respectively. Item 10 statement was accepted by the respondents with the mean scores of 3.4, 3.9 and 3.9 for Deans, HODs, and Lecturers accordingly.

Research Question Two: To what extent is AI for Predictive analysis of student's performance applied for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto?

Table 4:

Mean score of Respondents on application of AI intelligent for Predictive analysis of student's performance for Transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto

S/N	Item statement	Respondent	SA	A	UD	D	SD	N	Mean
1	Artificial intelligence systems accurately predict teacher trainees' academic performance using students' learning data.	Dean	1	3	-	1	2	7	3.9
		HODs	11	3	1	4	1	21	3.6
		Lecturers	107	56	2	12	29	206	3.4
2	AI-based predictive analytics enable lecturers to identify teacher trainees who are at risk of poor academic performance at an early stage.	Dean	3	1	-	2	2	7	3.4
		HODs	13	2	1	3	2	21	4.4
		Lecturers	53	0	101	15	16	206	3.2
3	AI intelligence assists teacher educators in making timely instructional decisions based on predicted student performance.	Dean	2	3	-	-	2	7	3.8
		HODs	5	13	1	1	-	21	3.1
		Lecturers	55	77	7	16	51	206	3.1
4	Predictive analytics powered by AI improve the monitoring of teacher trainees' academic progress throughout their programme.	Dean	1	4	-	2	-	7	3.6
		HODs	8	5	1	5	3	21	3.5
		Lecturers	90	55	2	56	3	206	3.9
5	AI-generated predictions help lecturers provide timely interventions to improve teacher trainees' learning outcomes.	Dean	1	3	-	1	2	7	3.3
		HODs	11	3	-	4	1	21	3.4
		Lecturers	97	57	2	12	28	206	3.7
6	The use of AI for predictive analysis enhances the effectiveness of academic advising and mentoring in teacher training programmes.	Dean	3	1	-	2	2	7	3.3
		HODs	13	2	-	3	2	21	3.4
		Lecturers	53	10	1	35	16	206	3.5
7	AI intelligence supports evidence-based decision-making for the transformative management of teacher training programmes.	Dean	2	3	1	1	1	7	3.8
		HODs	5	6	1	2	6	21	3.4
		Lecturers	64	65	1	70	6	105	3.5

8	Predictive analytics using AI contribute to improved student retention and programme completion rates in teacher training institutions.	Dean	2	2	-	1	2	7	3.7
		HODs	5	8	1	2	5	21	3.7
		Lecturers	65	87	7	16	31	206	3.2
9	The integration of AI predictive analytics enhances the overall quality and efficiency of teacher training programme management.	Dean	1	3	-	2	1	7	3.1
		HODs	9	2	1	3	6	21	3.7
		Lecturers	67	10	1	10	6	206	3.3
0	Teacher training institutions should adopt AI-powered predictive analytics to improve educational planning, student support, and institutional decision-making.	Dean	2	1	-	1	3	7	3.2
		HODs	12	3	2	2	1	21	3.8
		Lecturers	68	76	1	54	7	206	3.8

Aggregate mean= 3.6

Table 4 revealed the views of Deans, HODs and Lecturers on application of AI intelligent for Predictive analysis of student's performance for Transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto. Item 11 showed the responses of respondents the item statement. From the responses of the respondents, the item statement was accepted by all the respondents with the mean score of 3.9, 3.6 and 3.4 respectively. Item 12 shows the responses of respondents, the mean scores of the respondent show that the item statement was accepted by the respondents with the mean scores of 3.4, 4.4 and 3.2 for Deans, HODs, and Lecturers respectively. Item 13 was similarly accepted by the respondents with the means scores, Deans 3.8, HODs 3.1 and Lecturers 3.0. Item 14 had mean scores of 3.6, 3.5, and 3.9 for Deans, HODs and Lecturers respectively and was accepted. Item 15 was accepted by the respondents with the mean scores of 3.3, 3.4 and 3.7 for Deans, HODs, and Lecturers.

From the responses of the respondents on item 16, the item statement was accepted by the respondents with the mean score of 3.3, 3.4 and 3.5 respectively. Item 17 shows the responses of respondents which indicated acceptance by all the respondents with the mean scores of 3.8, 3.2 and 3.5 respectively. Item 18 showed the responses of the respondents to the item statement with the following mean scores Deans 3.7, HODs 3.6 and Lecturers 3.2. Item 19 has the mean scores of 3.1, 3.7, and 3.3 for Deans, HODs and Lecturers respectively. Item 20 statement was accepted by the respondents

with the mean scores of 3.2, 3.8 and 3.7 for Deans, HODs, and Lecturers accordingly.

Hypotheses 1 (HO₁): There is no significant difference in the opinion of respondents on the application of AI for Curriculum design and delivery for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto.

Table 4:

Summary of Analysis of Variance (ANOVA) on the opinion of respondents on the application of AI for Curriculum design and delivery for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.292	2	4.420	0.213	0.058
Within Groups	194.505	232	1.055		
Total	207.797	234			

From table 5 the F-value is 0.213 and the P-value is 0.058 at 0.05 levels of significance. Since the P-value is more than the level of significance set for the study, the hypothesis was therefore retained, thus, here is no significant difference in the opinion of respondents on the application of AI for Curriculum design and delivery for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto

Hypotheses 2 (HO₂): There is no significant difference in the opinion of respondents on the application of AI for Predictive analysis of student's performance for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto.

Table 6:

Summary of Analysis of Variance (ANOVA) on the opinion of respondents on the application of AI for Predictive analysis of student's performance for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.292	2	4.420	0.113	0.138
Within Groups	394.505	232	1.055		
Total	407.797	234			

From table 6 the F-value is 0.113 and the P-value is 0.134 at 0.05 levels of significance. Since the P-value is more than the level of significance set for the study, the hypothesis was therefore retained, thus, there is no significant difference in the opinion of respondents on the application of AI for Predictive analysis of student's performance for transformative management of teacher training programmes in Shehu Shagari College of Education, Sokoto.

Findings

1. The use of AI for curriculum design and delivery in Shehu Shagari College of Education, Sokoto is not fully operational but efforts are being made in that direction. This was supported by aggregate means of 3.7
2. Integration of Artificial Intelligence (AI) for predictive analytics to forecast students' performance is not fully deployed in Shehu Shagari College of Education, Sokoto. This can be achieved through staff training and re-training. This was supported by aggregate means of 3.6.

Discussion

It was revealed that the use of AI for curriculum design and delivery in Shehu Shagari College of Education, Sokoto is not fully operational but efforts are being made in that direction. This is attributed to the fact that AI has not been fully integration into curriculum design and delivery for effective classroom instruction in Shehu Shagari College of Education, Sokoto. In addition, AI-

assisted has not been used for assessment to provide timely and accurate feedback that enhances teacher trainees' learning in Shehu Shagari College of Education, Sokoto. The study found that Artificial intelligence tools were not utilized to design of teacher education curricula in order to align learning outcomes with current educational needs. There is therefore the need for careful and proper planning in line with the opinion of Salmeron et al. (2023) that the integration of AI in the educational field also demands careful planning, since "the design of activities, content, resources, evaluations and time for each course and career must be planned, based on the objectives and profile of the graduating student that is desired to be achieved.

It was also revealed that Integration of Artificial Intelligence (AI) for predictive analytics to forecast student's performance is not fully deployed in Shehu Shagari College of Education, Sokoto. This was attributed to lack of technical expertise and resources Shehu Shagari College of Education, Sokoto. AI requires specialized skills and knowledge, and the institution does not have adequate and the necessary resources to implement AI effectively. This is in agreement with Simon and Riede (2020) that the application of AI-powered predictive analytics in education leverages vast amounts of data generated from student information systems, learning management platforms, assessment results, demographic data, and even socio-economic factors (Simon and Riede, 2020). It is imperative to say that if the right facilities, fund and expertise for AI use are fully deployed, Shehu Shagari College of Education, Sokoto will rank among the top most teacher training institutions in northern Nigeria

Conclusion

It is also obvious that the use of AI for intelligent tutoring, grading of assignments and exams, curriculum design and delivery and predictive analysis of student's performance is not fully deployed in Shehu Shagari College of Education, Sokoto. This is not impossible, it only required sincere commitment on the part of management to ensure that staff are adequately trained, needed resources provided and collapse all operational systems into one single AI driven operational system.

Recommendations

1. Staff of Shehu Shagari College of Education should be well equipped with specialized skills and knowledge on the use of AI for teacher training programme through workshops, seminars and self-development. This will improve the quality-of-service delivery and the over objectives will be accomplished.
2. All the existing and operational systems in Shehu Shagari College of Education should be made to work collaborative and seamlessly in order to be able to infuse AI into the operational systems that will ensure AI powered curriculum design and delivery and ease of student's assessment and learning outcome.

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