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Research Article

AI Integration in Education: Global Educators' Perspectives on Adoption, Challenges, and Ethical Imperatives

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Abstract

This study investigates global educators' perspectives on the adoption, challenges, and ethical dimensions of artificial intelligence (AI) in education. Employing a global cross-sectional survey design, data were collected through an online questionnaire distributed to educators worldwide. The sample was derived from verified email contacts extracted from open-access educational journals, yielding 350 valid responses across diverse regions and institutional settings.

Findings reveal a high level of AI adoption (74.5%), particularly in Asia (78.9%) and Europe (64.4%), where educators recognized AI's potential to enhance teaching efficiency, student engagement, and personalized learning. However, insufficient training (30.9%), technical difficulties (22.3%), and resistance to change (16%) emerged as key barriers to integration. Respondents strongly emphasized the ethical imperatives of transparency and data protection—84.9% rated transparent data use as important or very important. The study also found that low AI literacy (only 6.3% identified as experts) and limited institutional support significantly hinder effective implementation.

Results support the hypotheses that AI-driven personalized learning improves motivation and engagement while highlighting that ethical governance and educator training are essential for sustainable adoption. The research concludes that successful integration of AI in education requires collaborative efforts among educators, technologists, and policymakers to establish ethical frameworks, enhance AI literacy, and ensure equitable access to technological resources.

Keywords: artificial intelligence, education, educators' perspectives, ethical implementation, personalized learning, AI literacy, global study

Introduction

Artificial intelligence (AI) is the core of transformation in several sectors, and education is no different. The application of AI in education has the potential to provide a new transformative approach toward ameliorating learning experiences, personalizing education, and streamlining administrative processes (Alam & Hasan, 2024; Xue & Wang, 2022). AI has changed even the meaning of education by bringing adaptive learning technologies or intelligent tutoring systems, which would mean personalized instruction and better educational results (Huang et al., 2023; Widodo et al., 2023). But with these vast opportunities come significant challenges, such as issues of equity, data privacy, and the need for teachers to adapt to new technologies (Pandey, 2025; Ryzheva et al., 2024). Navigating an ever-changing landscape, educators and policymakers will have to strike a critical balance between realizing AI's promises and meeting its challenges in the future of education. The underlying purpose is to unpack such opportunities and challenges within the complete understanding of how AI can be harnessed in creating effective, inclusive, dynamic learning environments.

Review of the Related Literature

Xue and Wang (2022) who worked on "artificial intelligence for education and teaching." The authors used literature research, case analysis, and interview methods in this research study. For study 96, a questionnaire was randomly administered to select teachers from several Qingdao City, China schools. The result revealed that artificial intelligence significantly advances the professional development of 52.1% of teachers. AI benefits in professional growth, believe 32.3% of the teachers. The percentage of teachers who know about the existence of artificial intelligence is 12.5%. In general, only 3.1% of teachers think AI has little value for their professional growth.

Altememy et al. (2023) worked on "the influence of the artificial intelligence capabilities of higher education institutions in Iraq on students' academic performance: The role of AI-based technology application as a mediator." The research utilized a quantitative survey-based approach to gather data, employing a questionnaire as the data collection instrument. The results are a breakthrough in that adopting AI-driven technology may enhance academic achievements in higher education institutions in Iraq. The integration of AI will possibly revolutionize traditional learning methods into more personalized methods of realizing distinctive student needs and tastes in learning.

Huang et al. (2023) focused on the "effects of artificial Intelligence–enabled personalized recommendations on learners' learning engagement, motivation, and outcomes in a flipped classroom." This study aimed to enhance students' intrinsic motivation by offering them a curated list of recommended videos to review to improve their academic performance. The study involved 102 students enrolled in a systems programming course at a university in northern Taiwan. The research examines how an AI-

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based personalized recommendation system for flipped classrooms affects motivation, engagement, and achievement. Results suggested that the proposed method might be helpful to increase students' motivation to learn. The study observed that students with middle motivation showed significantly more improvements than students with high and low motivation.

Widodo et al. (2023) focused on "artificial intelligence based decision support system for education management in higher education." The research used qualitative and quantitative approaches. The research aims to identify and implement strategies for incorporating artificial intelligence into lecturer performance evaluation systems in higher education. As such, the study findings have been that AI does play an essential role in the evaluation system, teaching, and research, with participants accepting that, indeed, most universities have fewer technology sources and IT experts.

Alam and Hasan (2024) researched "applications and future prospects of artificial intelligence in education." The study was based on a qualitative method-based. The study aimed to explore AI's application and future prospects in education. Researchers wrote in the discussion section that the use of AI makes learning more exciting and interactive. AI significantly plays a role in a learning management system that transmutes the traditional classroom to an online one. AI globally offers a way for teachers and students to communicate with each other and collaborate, regardless of the distance between them. It breaks geographical borders and gives opportunities for exchanging ideas and cultures.

Marić and Petković (2024) researched "vision of education for future teachers in the era of artificial intelligence-challenges of a new reality." The study utilized qualitative methodology in 75 students of Educons University. The study's findings proved that a variety of attitudes evoked by the reality of the use of AI tools and the system of education. The majority of students, 38%, considered that the most popular AI tools nowadays are those applied to the content of education, evaluation methods by 25%, and student choice AI by 23%. As for the teaching process, this category is chosen by only 14% of students. Also, 13% consider education to be risky.

Ryzheva et al. (2024) pointed out, "artificial intelligence in higher education: Opportunities and challenges." The findings of the study selected 208 higher education students. The study reveals that 76% of the students in higher education used AI over the past year. On the other hand, 50% think that AI is beneficial in the education process, for example, in homework and assignments. Thus, the study proves that AI is an essential technology in education.

Ţală et al. (2024) researched "Exploring university students' perceptions of generative artificial intelligence in education." The exploratory research was conducted on 364 graduate and postgraduate students in Romania. The primary outcome of the study was that 72% of the respondents claimed to have used AI models to generate content occasionally, and 47% had the will to use AI tools in other academic fields. The results implicate high awareness and interest in content generation models. They also signify that users who believe the content quality generated is good believe its integration into their academic activities can help them be creative and gain better employment opportunities.

Uygun (2024) worked on "teachers' perspectives on artificial intelligence in education." In the study, the author used a survey model as a method and selected 74 school teachers through the purposive sampling technique. According to the study statistics, it is evident that a majority of the teachers have a positive perception of AI as a boon rather than a bane to their classrooms. To the teachers, technology will aid in the form of learning and better-designed instruction, increased productivity, value added to the economy, and even measurement of learning progress among students. However, there remains a significant portion of educators who harbor reservations about AI applications in their classrooms. These reservations include the possibility of making people into passive robots, threats to privacy and security, and the creation of a cold and emotionless environment.

Zormanová (2024) carried out the work on "attitudes of Czech teachers towards the use of artificial intelligence in schools." The purpose of the research study was to ascertain the instructors' subjective opinions about the use of artificial intelligence in the classroom. Study results are based on five primary and secondary school teachers. From the study, it emerged that most teachers argue they cannot prevent the introduction of artificial intelligence into classrooms. Therefore, they try to accept it and understand that their current responsibility is to teach students how to use AI as an ordinary tool to avoid its disadvantages. Teachers are also aware that how instruction, assessment, and homework are implemented in schools must change as artificial intelligence is given a more significant role. Problems need to be presented to students that AI can't solve for them or assist them with. However, some teachers see AI as one of the tools that may help prepare and conduct the lesson. Therefore, they are already using chatbots in their class. They also felt that the AI helps cut down workload and time management, thus increasing efficiency in teaching. Some research says that teachers have concerns regarding the advent of AI and the applications they will have in the classroom. They fear that this will result in students being stifled in their natural intelligence and depending entirely on technology for problem-solving and doing their assignments. On the same note, most educators share a worry that pupils will misuse AI, for example, when they tend to cheat or plagiarize information.

Vaghrodia and Raval (2024) focused on "a study of teachers' perceptions of AI (Artificial Intelligence) in the Indian context." The study aimed to find out the Indian teachers' views on AI. For the study, 60 teacher educators were randomly selected from the Anand and Gandhinagar districts in Gujarat. The study results revealed that 44 (73.3%) teachers use the Al in teaching. ChatGPT users 31 (51.7%) and all levels of education, mostly 50 (80%) higher education teachers use the AI. Plus, sixty-six percent of teachers believed AI affected the students' reasoning and creativity abilities.

Iqbal et al. (2024) conducted a review on "the role of artificial intelligence (AI) in transforming educational practices: opportunities, challenges, and implications." The main objective of the study was to understand the advent, expansion, and application of AI in education, including the problems pertaining to its integration and use of disruptive technology. Researchers selected 139 papers that's published after 2009 from the Web of Science and Google Scholar. Through their various articles and studies, researchers found that AI seems to be very active in the education field. It is becoming an essential medium in providing ample information and knowledge. It was found in the study that teachers using AI or tapping into the use of AI can increase efficiency and effectiveness in carrying out most tasks, including completing administrative tasks such as student work evaluation and grading and providing feedback. In addition, AI-based teachers enhance the quality of instruction through web-based intelligent systems and chatbots. Research on the downsides of AI is not left behind, focused on specific erosions in academic integrity achieved through the use of AI-powered paper churning and paper mill services that allow for cheating.

Statement of Problem

The introduction of AI in education offers immense opportunities in the sector and tremendous challenges that must be addressed strategically. On the one hand, AI can revolutionize educational systems by offering personalized learning experiences, automating administrative activities, and creating easier accessibility to academic resources. In other ways, it does present some critical issues. One of the significant opportunities that AI presents in education is personalization: personalizing content to fit the needs of students for practical and exciting learning experiences. It helps to analyze the strengths and weaknesses of different students, thus enabling the educator to adjust their approach to teaching. In addition, AI automates routine administrative tasks so an educator can invest more time in education and interacting with the student. However, there are significant challenges to making AI educational. This incorporates data privacy and security concerns, where if student data is collected and analyzed using the AI system, it may be susceptible to a breach and misuse of sensitive information. There is also a risk of expanding the gaps in educational inequalities, as access to AI technology might not be evenly distributed in different socioeconomic groups and regions. Moreover, with much money being poured into the implementation of AI in education, it is usually the instructors' training that becomes the limiting factor for most institutions. These challenges should be addressed with a comprehensive and balanced approach: sound ethical guidelines, equitable access to technology, and ongoing support of educators and students to realize maximum benefits from AI.

Objectives

This study seeks to examine global educators' perspectives on the adoption, challenges, and ethical imperatives of AI in education, emphasizing how these insights can inform responsible, inclusive, and effective integration strategies for the future of learning. Objectives of the study were to:

1. Evaluate how AI is currently being utilized in educational settings to enhance learning outcomes and educational processes.
2. Point out possible chances where artificial intelligence can be progressively included into education to advance efficiency, personalization, and accessibility.
3. To examine how transparency in data usage and algorithmic decision-making, along with the ethical implementation of artificial intelligence in education, contribute to building educators' trust, confidence, and acceptance of AI-driven tools and systems for teaching and learning.
4. Create suggestions for how technologists, policy makers, and educators might efficiently include artificial intelligence technologies into their respective fields of work, so optimizing benefits and reduce risk.

Hypothesis

1. Learning results among students of educational institutions that successfully incorporate artificial intelligence technologies will be better than those depending just on conventional approaches.
2. Compared to more traditional one-size-fits-all solutions, AI-driven personalized learning platforms will increase student involvement and motivation levels.
3. Transparency in data use and algorithmic decision-making combined with ethical application of artificial intelligence in education will help to build confidence and acceptance among educators.
4. Overcoming technological constraints and improving AI literacy among educators will help to enable better integration and adoption of AI tools in several educational environments.

Methodology

Design

The present study adopted a **g**lobal cross-sectional design to explore educators' perspectives on the integration of Artificial Intelligence (AI) in education. Preliminary literature searches were conducted in June 2024 using databases such as ResearchGate, Web of Science, Google Scholar, and CrossRef to obtain a comprehensive understanding of the scope, seriousness, and depth of AI-related educational research. Relevant studies were retrieved from these databases using keywords such as artificial intelligence, education, student, teacher, teaching-learning process, and ethical considerations.

AI, as a discipline, encompasses the capability of computers to mimic human intelligence. Given its inherently interdisciplinary and global nature, the review included research studies from diverse geographical regions to ensure the representation of multiple educational contexts and experiences.

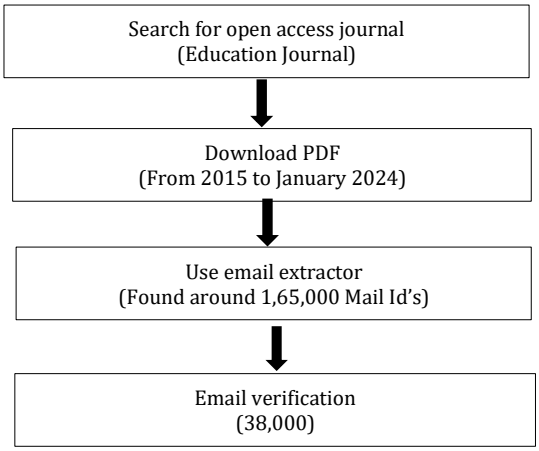
Participants/ Sampling

Given the global scope of the study and the researcher's professional engagement within the field of education, data were collected from educators across multiple regions worldwide through an online survey. The sampling approach was purposive and convenience-based, targeting individuals actively involved in educational institutions and scholarly research.

To assemble the participant pool, the researcher identified potential respondents by downloading open-access research articles from educational journals published between 2015 and January 2024. From these articles, the authors' email addresses were extracted using an automated email extraction tool. The extracted dataset initially contained approximately 165,000 email IDs, which were subsequently verified for accuracy and validity, yielding a final list of around 40,000 verified addresses. From this verified pool, approximately 38,000 emails were selected and organized into an Excel database for systematic outreach and follow-up during the survey distribution phase. This approach ensured diverse participation, representing educators from various continents, educational levels, and institutional types.

A schematic representation of the participant selection process is presented in Figure 1 (Participants Selection Flowchart).

Figure 1
Participants Selection Flowchart

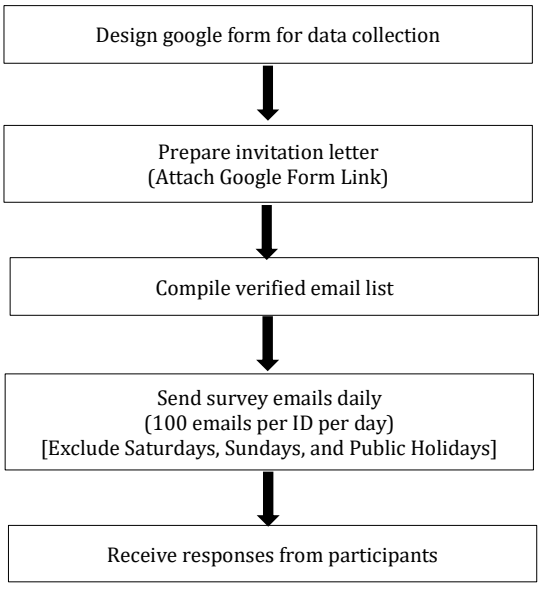


Data Collection

A Google form was prepared for data collection, which was divided into two sections. The first section contained nine questions related to the respondents' personal information, such as age group, working experience, region, etc., while the second section had 17 questions related to AI. All questions were based on different Likert scales. The main challenge was to send the survey form to the selected respondents and receive responses. For this, emails were sent daily (excluding Saturday and Sunday) from two Gmail IDs and one institutional email ID, with 100 emails sent from each ID per day.

The major drawback of this process was that it was time-consuming, and due to Gmail and Google's policy, the email inbox response rate was very low, resulting in a significantly low response rate, which was quite disappointing.

Figure 2
Data Collection Flowchart



Results

The study's first objective was to determine how AI is currently being utilized in educational settings to enhance learning outcomes and educational processes (Tables 1-5).

Table 1
Responses to Do You Currently Use AI Technologies in Your Teaching?

Categories	Yes		No		Total
	f	%	*f*	%	*n*
Total response	260	74.3	90	25.7	350
Continent					
Africa	31	59.6	21	40.4	52
Asia	165	78.9	44	21.1	209
Australia	02	66.7	01	33.3	03
Europe	52	64.4	24	31.6	76
North America	05	100	00	0.0	05
South America	05	100	00	0.0	05
Gender					
Male	137	72.5	52	27.5	189
Female	123	76.4	38	23.6	161
Age group					
≤ 25	01	50	01	50.0	02
26-35	29	85.3	05	14.7	34
36-45	89	77.4	26	22.6	115
46-55	87	71.9	34	28.1	121
≥ 56	54	69.2	24	30.8	78
Qualification					
PhD	203	73.6	73	26.4	276
Masters	47	75.8	15	24.2	62
Graduate	10	83.3	02	16.7	12
Residence					
Large urban city	79	80.6	19	19.4	98
City	134	73.6	48	26.4	182
Town	34	73.9	12	26.1	46
Village	13	54.2	11	45.8	24
Organization					
Government	173	73.3	63	26.7	236
Private	64	71.1	26	28.9	90
Semi Government	23	95.8	01	4.2	24
Level of teaching					
Higher Education	240	75.0	80	25.0	320
Senior Secondary School	06	54.5	05	45.5	11
Secondary School	06	85.7	01	14.3	07
Middle Level	02	100.0	00	0.0	02
Primary School	06	60.0	04	40.0	10
Teaching experience					
1-5	22	81.5	05	18.5	27
6-10	34	69.4	15	30.6	49
11-15	54	80.6	13	19.4	67
16-20	40	69.0	18	31.0	58
21-25	48	75.0	16	25.0	64
26-30	34	75.6	11	24.4	45
≥ 31	28	70.0	12	30.0	40
Faculty					
Business and Management	26	83.9	05	16.1	31
Education	136	76.0	43	24.0	179
Humanities	59	69.4	26	30.6	85
Medical	17	68.0	08	32.0	25
Science	22	73.3	08	26.7	30

Overall evaluation of Table 1 of the study indicates a significant use of technology response, with 74.5% of participants. The Asia continent has the highest use at 78.9%, Europe at 64.4%, followed by Africa, which is lower at 59.6%. Based on gender, males and females use AI at almost similar rates at 72.5% and 76.4%, respectively. The age group indicates (*f* = 89, 77.4%; *f* = 87, 71.9%) higher adaptation in the 36-45 and 46-55 age groups, respectively. Qualifications of participants, PhD holders are at (*f* = 203, 73.6%), Postgraduates at (*f* =47, 75.8%), and Graduates at (*f* = 10, 83.3%), respectively. That is fascinating—holding advanced degrees does not necessarily correlate with greater use of AI. Individuals with degrees may have a better understanding of technology. The author should highlight regions with notably low sample sizes, as the data in those areas may be less trustworthy. Regarding residence; the large urban city has the highest use of AI (*f* = 79, 80.6%), then the city (*f* = 134, 73.6%), followed by the village (*f* = 13, 54.2%). It is understandable considering the improved resources available in urban areas. The respondents of 95.8% from semi-government colleges accepted that they use AI in their teaching work, while 73.3% and 71.01% of the respondents from government and private colleges accepted the same, respectively. The point to be noted here is that there were 23 respondents from semi-government colleges, whereas the number of respondents from government colleges was 173. The 320 respondents were related to higher education, and of the total number of respondents, 350. Higher education respondents (*f* =204, 75%) agreed they use AI in their educational work. Based on the teaching experience, it was found that about 70% of the teachers in all categories accept the use of AI in their teaching work. The study data clearly show that respondents across all faculties are using more than AI tools in their teaching.

The answers to the question, "Do you think AI has the potential to improve education?" are analyzed in Table 2. Overall (*f* = 316, 90.6%) said yes and the remaining 34 respondents were unsure or said no. The data in Table 2 shows that more than 80% of the respondents across all categories agreed that AI has the potential to improve education. Regarding gender, the study results show that both males (*f* = 172, 91%) and females (*f* = 144, 89.4%) almost equally believe that AI has the potential to improve education. These figures can be beneficial for any other study in the future.

Table 2
Do You Think AI has the Potential to Improve Education?

Categories	Yes		Unsure		No		Total
	f	%	*f*	*n*	*f*	%	*n*
Total response	316	90.3	05	1.4	29	8.3	350
Continent							
Africa	50	96.2	01	1.9	01	1.9	52
Asia	188	90.0	03	1.4	18	8.6	209
Australia	02	66.7	00	0.0	01	33.3	03
Europe	66	86.8	01	1.3	09	11.9	76
North America	05	100	00	0.0	00	0.0	05
South America	05	100	00	0.0	00	0.0	05
Gender							
Male	172	91	03	1.6	14	7.4	189
Female	144	89.4	02	1.2	15	9.4	161
Age group							
≤ 25	01	50.0	00	0.0	01	50.0	02
26-35	28	82.4	02	5.9	04	11.8	34
36-45	102	88.7	02	1.7	11	9.6	115
46-55	114	94.2	01	0.9	06	5.0	121
≥ 56	71	91	00	0.0	07	9.0	78
Qualification							
PhD	249	90.2	04	1.5	23	8.3	276
Masters	57	92.0	01	1.6	04	6.5	62
Graduate	10	83.3	00	0.0	02	16.7	12
Residence							
Large urban city	89	90.8	01	1.0	08	8.2	98
City	163	89.6	03	1.6	16	8.8	182
Town	42	91.3	00	0.0	04	8.7	46
Village	22	91.7	01	4.1	01	4.2	24
Organization							
Government	213	90.2	03	1.3	20	8.5	236
Private	81	90.0	02	2.2	07	7.8	90
Semi Government	22	91.7	00	0.0	02	8.3	24
Level of teaching							
Higher Education	289	90.3	05	1.6	26	8.1	320
Senior Secondary School	10	91	00	0.0	01	0.0	11
Secondary School	06	85.8	00	0.0	01	14.3	07
Middle Level	02	100	00	0.0	00	0.0	02
Primary School	09	90	00	0.0	01	10.0	10
Teaching experience							
1-5	25	92.6	00	0.0	02	7.4	27
6-10	40	81.6	02	4.0	07	14.3	49
11-15	57	85	02	3.0	08	12.0	67
16-20	57	98.2	00	0.0	01	1.7	58
21-25	59	92.2	01	1.6	04	6.2	64
26-30	41	91.1	00	0.0	04	8.9	45
≥ 31	37	92.5	00	0.0	03	7.5	40
Faculty							
Business and Management	30	96.8	00	0.0	01	3.2	31
Education	162	90.5	03	1.7	14	7.8	179
Humanities	74	87.0	02	2.3	09	10.6	85
Medical	22	88.0	00	0.0	03	12.0	25
Science	28	93.3	00	0.0	02	6.7	30

Table 3 shows the data about familiarity with AI. Only (f = 48, 13.7%) are very familiar, (f = 143, 40.9%) are familiar, (f = 138, 39.4%) are neutral, and the remaining 21 respondents were Unfamiliar with AI. The results of the study show that the majority of the respondents are more in agreement with familiarity and neutral towards AI technology in most of the categories. The study found that the educators of the African continent had 61.5% more families than the Asian continent, 55%. Another surprising result has come out in the study, in which it was found that the educators of the European continent have a lower familiarity, only 48.7%, than the other continents. The data in Table 3 shows that male respondents are more familiar with AI technology than females. On the other hand, female respondents are more neutral (45.3%) about their knowledge of AI technology than male (34.4%) respondents. On studying the data from the organizational point of view, it was found that educators working in semi-government institutions are more familiar (50.2%) with AI Technology. The results of the research show that most of the categories have a nearly equal percentage of familiar and neutral responses to the third question.

Table 3
How Familiar are You with AI Technologies Used in Education?

Categories	Very familiar		Familiar		Neutral		Unfamiliar		Very unfamiliar		Other
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	48	13.7	143	40.9	138	39.4	18	5.1	03	0.9	350
Continent											
Africa	09	17.3	23	44.2	18	34.6	02	3.9	00	0.0	52
Asia	26	12.4	89	42.6	84	40.2	08	3.8	02	1.0	209
Australia	01	33.3	01	33.3	01	33.3	00	0.0	00	0.0	03
Europe	10	13.2	27	35.5	31	40.8	07	9.2	01	1.3	76
North America	02	40.0	02	40.0	01	20.0	00	0.0	00	0.0	05
South America	00	0.0	01	20.0	03	60.0	01	20.0	00	0.0	05
Gender											
Male	28	14.8	83	43.9	65	34.4	11	5.8	02	1.1	189
Female	20	12.4	60	37.3	73	45.3	07	4.3	01	0.6	161
Age group											
≤ 25	01	50.0	00	0.0	00	0.0	01	50.0	00	0.0	02
26-35	03	8.8	20	58.8	08	23.5	02	5.9	01	3.0	34
36-45	17	14.8	41	35.6	50	43.4	06	5.2	01	0.9	115
46-55	16	13.2	57	47.1	46	38.0	02	1.7	00	0.0	121
≥ 56	11	14.1	25	32.1	34	43.6	07	9.0	01	1.3	78
Qualification											
PhD	39	14.1	108	39.1	112	40.6	15	5.4	02	0.7	276
Masters	06	9.7	29	46.8	23	37.1	03	4.84	01	1.6	62
Graduate	03	25.0	06	50.0	03	25.0	00	0.0	00	0.0	12
Residence											
Large urban city	15	15.3	42	42.9	36	36.7	05	5.1	00	0.0	98
City	25	13.7	72	39.6	75	41.2	09	5.0	01	0.6	182
Town	05	10.9	23	50.0	16	34.8	02	4.3	00	0.0	46
Village	03	12.5	06	25.0	11	45.8	02	8.3	02	8.3	24
Organization											
Government	37	15.7	94	39.8	92	39.0	11	4.7	02	0.8	236
Private	07	7.8	36	40.0	40	44.0	06	6.7	01	1.1	90
Semi Government	04	16.7	13	54.2	06	25.0	01	4.2	00	0.0	24
Level of teaching											
Higher Education	42	13.1	130	40.6	131	40.9	15	4.7	02	0.6	320
Senior Secondary School	01	9.1	05	45.4	05	45.4	00	0.0	00	0.0	11
Secondary School	02	28.6	02	28.6	01	14.3	01	14.3	01	14.3	07
Middle Level	00	0.0	02	100.0	00	0.0	00	0.0	00	0.0	02
Primary School	03	30	04	40.0	01	10.0	02	20.0	00	0.0	10
Teaching experience											
1-5	04	14.8	12	44.4	09	33.3	01	3.7	01	3.7	27
6-10	02	4.1	17	34.7	24	48.9	06	12.2	00	0.0	49
11-15	13	19.4	31	46.3	19	28.4	03	4.5	01	1.5	67
16-20	05	8.6	28	48.3	23	39.7	02	3.4	00	0.0	58
21-25	07	10.9	28	43.7	28	43.7	01	1.6	00	0.0	64
26-30	09	20.0	15	33.3	17	37.8	03	6.7	01	2.2	45
≥ 31	08	20.0	12	30.0	18	45.0	02	5.0	00	0.0	40
Faculty											
Business and Management	03	9.7	14	45.2	13	41.9	01	3.2	00	0.0	31
Education	31	17.3	74	41.3	59	33	13	7.3	02	1.1	179
Humanities	07	8.2	37	43.5	37	43.5	03	3.5	01	1.2	85
Medical	03	12	06	24.0	15	60.0	01	4.0	00	0.0	25
Science	04	13.3	12	40.0	14	46.7	00	0.0	00	0.0	30

Table 4
Responses on to What Extent do You Believe AI Integration can Improve Learning Outcomes Compared to Traditional Methods?

Categories	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	96	27.4	186	53.1	55	15.7	12	3.4	01	0.3	350
Continent											
Africa	21	40.9	23	44.2	05	9.6	03	5.7	00	0.0	52
Asia	55	26.3	120	57.4	28	13.4	06	2.9	00	0.0	209
Australia	00	0.0	02	66.7	00	0.0	01	33.3	00	0.0	03
Europe	14	18.4	37	48.7	22	29.0	02	2.6	01	1.3	76
North America	03	60.0	02	40.0	00	0.0	00	0.0	00	0.0	05
South America	03	60.0	02	40.0	00	0.0	00	0.0	00	0.0	05
Gender											
Male	54	28.6	103	54.5	23	12.2	08	4.2	01	0.5	189
Female	42	26.1	83	51.6	32	19.9	04	2.5	00	0.0	161
Age group											
≤ 25	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
26-35	11	32.4	15	44.1	05	14.7	03	8.8	00	0.0	34
36-45	34	29.6	59	51.3	19	16.5	03	2.6	00	0.0	115

Categories	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	96	27.4	186	53.1	55	15.7	12	3.4	01	0.3	350
46-55	31	25.6	67	55.4	20	16.5	03	2.9	00	0.0	121
≥ 56	19	24.7	45	57.7	10	12.8	03	3.8	01	1.3	78
Qualification											
PhD	67	24.3	151	54.7	47	17.0	10	3.6	01	0.4	276
Masters	24	38.7	30	48.4	06	9.7	02	3.2	00	0.0	62
Graduate	05	41.7	05	41.7	02	16.7	00	0.0	00	0.0	12
Residence											
Large urban city	27	27.6	52	53.1	14	14.3	05	5.1	00	0.0	98
City	43	23.6	103	56.6	30	16.5	05	2.7	01	0.6	182
Town	18	39.1	21	45.6	06	13.1	01	2.2	00	0.0	46
Village	08	33.3	10	41.7	05	20.8	01	4.2	00	0.0	24
Organization											
Government	63	26.7	121	51.3	42	17.8	09	3.8	01	0.4	236
Private	26	28.9	51	56.7	11	12.2	02	2.2	00	0.0	90
Semi Government	07	29.2	14	58.3	02	8.3	01	4.2	00	0.0	24
Level of teaching											
Higher Education	87	27.2	169	52.9	53	16.6	10	3.1	01	0.3	320
Senior Secondary School	02	18.2	07	63.6	01	9.1	01	9.1	00	0.0	11
Secondary School	03	42.9	03	42.9	00	0.0	01	14.2	00	0.0	07
Middle Level	01	50.0	01	50.0	00	0.0	00	0.0	00	0.0	02
Primary School	03	30.0	06	60.0	01	10.0	00	0.0	00	0.0	10
Teaching experience											
1-5	10	37.0	14	51.8	03	11.1	00	0.0	00	0.0	27
6-10	08	16.33	28	57.1	11	22.5	02	4.1	00	0.0	49
11-15	22	32.8	30	44.8	10	14.9	04	6.0	01	1.5	67
16-20	16	27.6	35	60.3	07	12.1	00	0.0	00	0.0	58
21-25	16	25.0	38	59.4	08	12.5	02	3.1	00	0.0	64
26-30	12	26.7	20	44.4	11	24.4	02	4.4	00	0.0	45
≥ 31	12	30.0	21	52.5	05	12.5	02	5.0	00	0.0	40
Faculty											
Business and Management	07	22.6	19	61.3	03	9.7	02	6.4	00	0.0	31
Education	55	30.7	93	52.0	25	14.0	05	2.8	01	0.6	179
Humanities	23	27.1	43	50.6	14	16.5	05	5.9	00	0.0	85
Medical	03	12.0	14	56.0	08	32.0	00	0.0	00	0.0	25
Science	08	26.7	17	56.7	05	16.7	00	0.0	00	0.0	30

Table 4 data indicated that AI improves learning outcomes, 27.4% strongly agree, 53.1% agree. Asian (57.4%) and European (48.7%) respondents show higher agreement that AI improves learning outcomes compared to the African (44.2%) respondents. The responses of male and female respondents to this question are almost the same. To the question of whether AI integration can improve learning outcomes compared to the traditional method? Most of the respondents from the town and village areas also gave positive views. Faculty-wise data analysis revealed that all faculty members believe that AI integration is more effective than traditional methods.

Table 5
Responses to What Challenges Do You Face in Integrating AI Technologies into Your Teaching

Categories	Technical difficulties		Resistance to change		High costs		Privacy concerns		Insufficient training		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	78	22.3	56	16.0	52	14.9	42	12.0	108	30.9	14	4.0	350
Continent													
Africa	15	28.8	08	15.4	04	7.7	03	5.8	20	38.5	02	3.8	52
Asia	52	25.0	30	14.4	34	16.3	20	9.6	69	33.0	04	1.9	209
Australia	00	0.0	01	33.3	01	33.3	01	33.3	00	0.0	00	0.0	03
Europe	10	13.2	15	19.7	11	14.5	15	19.7	17	22.4	08	10.5	76
North America	00	0.0	02	40.0	01	20.0	02	40.0	00	0.0	00	0.0	05
South America	01	20.0	00	0.0	01	20.0	01	20.0	02	40.0	00	0.0	05
Gender													
Male	42	22.2	38	20.1	31	16.4	16	8.5	54	28.6	08	4.2	189
Female	36	22.4	18	11.2	21	13.0	26	16.1	54	33.5	06	3.7	161
Age group													
≤ 25	01	50.0	00	0.0	00	0.0	00	0.0	01	50.0	00	0.0	02
26-35	09	26.5	06	17.6	06	17.6	04	11.8	08	23.5	01	2.9	34
36-45	27	23.5	09	7.8	23	20.0	14	12.2	40	34.8	02	1.7	115
46-55	23	19.0	22	18.2	14	11.6	17	14.0	38	31.4	07	5.8	121
≥ 56	18	23.1	19	24.4	09	11.5	07	9.0	21	26.9	04	5.1	78
Qualification													
PhD	57	20.7	46	16.7	39	14.1	32	11.6	90	32.6	12	4.3	276
Masters	17	27.4	09	14.5	11	17.7	09	14.5	14	22.6	02	3.2	62
Graduate	04	33.3	01	8.3	02	16.7	01	8.3	04	33.3	00	0.0	12
Residence													
Large urban city	22	22.4	18	18.4	16	16.3	11	11.2	30	30.6	01	1.0	98
City	38	20.9	26	14.3	23	12.6	24	13.2	62	34.1	09	4.9	182
Town	12	26.1	09	19.6	11	23.9	02	4.3	09	19.6	03	6.5	46

Categories	Technical difficulties		Resistance to change		High costs		Privacy concerns		Insufficient training		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	78	22.3	56	16.0	52	14.9	42	12.0	108	30.9	14	4.0	350
Village	06	25.0	03	12.5	02	8.3	05	20.8	07	29.2	01	4.2	24
Organization													
Government	45	19.1	38	16.1	35	14.8	32	13.6	75	31.8	11	4.7	236
Private	25	27.8	14	16.6	15	16.7	08	8.9	27	30.0	01	1.1	90
Semi Government	08	33.3	04	16.7	02	8.3	02	8.3	06	25.0	02	8.3	24
Level of teaching													
Higher Education	69	21.6	52	16.3	48	15.0	37	11.6	101	31.6	13	4.1	320
Senior Secondary School	02	18.2	02	18.2	01	9.1	02	18.2	04	36.4	00	0.0	11
Secondary School	01	14.3	00	0.0	01	14.3	03	42.9	01	14.3	01	14.3	07
Middle Level	02	100.0	00	0.0	00	0.0	00	0.0	00	0.0	00	0.0	02
Primary School	04	40.0	02	20.0	02	20.0	00	0.0	02	20.0	00	0.0	10
Teaching experience													
1-5	13	48.1	04	14.8	03	11.1	02	7.4	05	18.5	00	0.0	27
6-10	08	16.3	05	10.2	11	22.4	02	4.1	22	44.9	01	2.0	49
11-15	18	26.9	06	9.0	09	13.4	09	13.4	22	32.8	03	4.5	67
16-20	13	22.4	09	15.5	10	17.2	10	17.2	16	27.6	00	0.0	58
21-25	10	15.6	09	14.1	09	14.1	11	17.2	21	32.8	04	6.3	64
26-30	08	17.8	12	26.7	06	13.3	05	11.1	10	22.2	04	8.9	45
≥ 31	08	20.0	11	27.5	04	10.0	03	7.5	12	30.0	02	5.0	40
Faculty													
Business and Management	05	16.1	05	16.1	03	9.7	04	12.9	13	41.9	01	3.2	31
Education	38	21.2	29	16.2	26	14.5	23	12.8	58	32.4	05	2.8	179
Humanities	20	23.5	13	15.3	12	14.1	08	9.4	27	31.8	05	5.9	85
Medical	04	16.0	03	12.0	08	32.0	02	8.0	06	24.0	02	8.0	25
Science	11	36.8	06	20.0	03	10.0	05	16.7	04	13.3	01	3.3	30

The data from Table 5 indicates the multiple barriers educators face when integrating AI technologies into teaching practices. Across 350 responses, insufficient training was found to be the most significant barrier (*f* = 108, 30.9%), followed by technical difficulties (*f* = 78, 22.3%), resistance to change (*f* = 56, 16.0%), high costs (*f* = 52, 14.9%), and privacy concern (*f* = 42, 12.0%). Continental disparities were evident: African (*f* = 20, 38.5%), Asian (*f* = 69, 33.0%), and European (*f* = 17, 22.4%) educators noted insufficient training as a primary obstacle. African and Asia respondents highlighted that technical difficulties were the second significant challenge that educators face when integrating AI technologies into their teaching, while European respondents emphasized privacy concerns and resistance to change (*f* = 15, 19.7%). The study revealed that both genders identified insufficient training (Male 28.6%; Female 33.5%) and technical difficulties (Male 22.2%; Female 22.4%) as the main challenges. Regarding the Age group data shows that six (17.6%) respondents from the 26 to 35 group mentioned to the resistance of change and high caste, 23 (20.0%) respondents from the 36 to 45 group belong to high cost, 22 (18.2%) from 46 to 55 above Age group accepted to the resistance of change and high cost were a third main challenge. From the organizational point of view, almost all three groups of respondents considered resistance to change as the third major factor. Data from Science Faculty educators show that they consider technical difficulties (36.8%) the most and high cost (10.0%) the least deterrent factor.

Table 6

Responses on How Effective Do You Find AI-Driven Personalized Learning Platforms in Increasing Student Engagement?

Categories	Very effective		Effective		Neutral		Ineffective		Very ineffective		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	79	22.6	180	51.4	80	22.8	09	2.6	02	0.6	350
Continent											
Africa	14	26.9	25	48.1	10	19.2	03	5.8	00	0.0	52
Asia	45	21.5	118	56.5	42	20.1	03	1.4	01	0.5	209
Australia	00	0.0	01	33.3	02	66.7	00	0.0	00	0.0	03
Europe	16	21.1	31	40.8	25	32.9	03	3.9	01	1.3	76
North America	02	40.0	03	60.0	00	0.0	00	0.0	00	0.0	05
South America	02	40.0	02	40.0	01	20.0	00	0.0	00	0.0	05
Gender											
Male	45	23.8	93	49.2	45	23.8	05	2.6	01	0.5	189
Female	34	21.1	87	54.0	35	21.7	04	2.5	01	0.6	161
Age group											
≤ 25	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
26-35	06	17.6	18	52.9	07	20.6	02	5.9	01	2.9	34
36-45	28	24.3	56	48.7	29	25.2	02	1.7	00	0.0	115
46-55	29	24.0	61	50.4	28	23.1	02	1.7	01	0.8	121
≥ 56	15	19.2	45	57.7	15	19.2	03	3.8	00	0.0	78
Qualification											
PhD	62	22.5	137	49.6	68	24.6	07	2.5	02	0.7	276
Masters	12	19.4	40	64.5	08	12.9	02	3.2	00	0.0	62
Graduate	05	41.7	03	25.0	04	33.3	00	0.0	00	0.0	12
Residence											
Large urban city	24	24.5	53	54.1	18	18.4	01	1.0	02	2.0	98
City	36	19.8	89	48.9	49	26.9	08	4.4	00	0.0	182
Town	12	26.1	27	58.7	07	15.2	00	0.0	00	0.0	46

Categories	Very effective		Effective		Neutral		Ineffective		Very ineffective		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	79	22.6	180	51.4	80	22.8	09	2.6	02	0.6	350
Village	07	29.2	11	45.8	06	25.0	00	0.0	00	0.0	24
Organization											
Government	51	21.6	121	51.3	56	23.7	07	3.0	01	0.4	236
Private	24	26.7	48	53.3	17	18.9	01	1.1	00	0.0	90
Semi Government	04	16.7	11	45.8	07	29.2	01	4.2	01	4.2	24
Level of Teaching											
Higher Education	71	22.2	165	51.6	75	23.4	08	2.5	01	0.3	320
Senior Secondary School	02	18.2	05	45.5	03	27.3	01	9.1	00	0.0	11
Secondary School	02	28.6	05	71.4	00	0.0	00	0.0	00	0.0	07
Middle Level	01	50.0	01	50.0	00	0.0	00	0.0	00	0.0	02
Primary School	03	30.0	04	40.0	02	20.0	00	0.0	01	10.0	10
Teaching Experience											
1-5	06	22.2	14	51.9	05	18.5	01	3.7	01	3.7	27
6-10	03	6.1	29	59.2	16	32.7	01	2.0	00	0.0	49
11-15	17	25.4	31	46.3	16	23.9	03	4.5	00	0.0	67
16-20	18	31.0	32	55.2	07	12.1	01	1.7	00	0.0	58
21-25	13	20.3	33	51.6	15	23.4	02	3.1	01	1.6	64
26-30	09	20.0	22	48.9	13	28.9	01	2.2	00	0.0	45
≥ 31	13	32.5	19	47.5	08	20.0	00	0.0	00	0.0	40
Faculty											
Business and Management	06	19.4	19	61.3	05	16.1	01	3.2	00	0.0	31
Education	43	24.0	97	54.2	33	18.4	04	2.2	02	1.1	179
Humanities	22	25.9	37	43.5	24	28.2	02	2.4	00	0.0	85
Medical	02	8.0	14	56.0	08	32.0	01	4.0	00	0.0	25
Science	06	20.0	13	43.3	10	33.3	01	3.3	00	0.0	30

The study's second objective was to point out possible chances where artificial intelligence can progressively be included into education efficiency, personalization, and accessibility (Tables 6-8). In this context, the first question was, how effective do you find AI-driven personalized learning platforms in increasing student engagement? The data indicate a strong positive perception of AI-driven personalized learning tools among educators believed to be effective (*f* = 180, 51.4%), followed by neutral (*f* = 80, 22.8%), and very effective (*f* = 79, 22.6%). Geographical variations show educators in Africa (75% combined effectiveness) and the Asia continent effective (*f* = 118, 56.5%), very effective (*f* = 45, 21.5%), demonstrated higher confidence in AI-driven engagement strategies compared to Europe effective(*f* = 31, 40.8%), very effective (*f* = 16, 21.1%). Gender differences were negligible, with male (*f* = 138, 73%) and female (*f* = 138, 75.1%) educators reporting similar positive experiences. Older educators (46-55 and ≥ 56 years expressed stronger confidence (*f* = 90, 74.4% and *f* = 60, 76.9%, respectively), possibly due to greater exposure to diverse pedagogical tools. Business and Management (*f* = 25, 80.7%), Education (*f* = 140, 78.2%), and Humanities (*f* = 59, 69.4%) faculties reported the highest efficacy, whereas medical faculties (*f* = 16, 64%) were less convinced, indicating discipline-specific variability in AI integration success.

Table 7
Responses to Have You Observed Any Changes in Student Motivation When Using Personalized Learning Tools?

Categories	Significant increase		Moderate increase		No change		Moderate decrease		Significant decrease		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	107	30.6	180	51.4	36	10.3	07	2.0	04	1.1	16	4.6	350
Continent													
Africa	19	36.5	23	44.2	07	13.5	00	0.0	01	1.9	02	3.9	52
Asia	69	33.0	109	52.2	16	7.7	02	1.0	02	1.0	11	5.3	209
Australia	00	0.0	01	33.3	01	33.3	00	0.0	01	33.3	00	0.0	03
Europe	14	18.4	44	57.9	10	13.2	05	6.6	00	0.0	03	3.9	76
North America	01	20.0	03	60.0	01	20.0	00	0.0	00	0.0	00	0.0	05
South America	04	80.0	00	0.0	01	20.0	00	0.0	00	0.0	00	0.0	05
Gender													
Male	57	30.2	98	51.9	19	10.1	05	2.6	03	1.6	07	3.7	189
Female	50	31.1	82	50.9	17	10.6	02	1.2	01	0.6	09	5.6	161
Age group													
≤ 25	01	50.0	01	50.0	00	0.0	00	0.0	00	0.0	00	0.0	02
26-35	07	20.6	20	58.8	03	8.8	02	5.9	01	2.9	01	2.9	34
36-45	35	30.4	61	53.0	10	8.7	01	0.9	00	0.0	08	7.0	115
46-55	41	33.9	56	46.3	14	11.6	04	3.3	02	1.7	04	3.3	121
≥ 56	23	29.5	42	53.8	09	11.5	00	0.0	01	1.3	03	3.8	78
Qualification													
PhD	87	31.5	136	49.3	29	10.5	07	2.5	04	1.4	13	4.7	276
Masters	16	25.8	38	61.3	06	9.7	00	0.0	00	0.0	02	3.2	62
Graduate	04	33.3	06	50.0	01	8.3	00	0.0	00	0.0	01	8.3	12
Residence													
Large urban city	26	26.5	57	58.2	08	8.2	03	3.1	02	2.0	02	2.0	98
City	55	30.2	89	48.9	25	13.7	02	1.1	02	1.1	09	4.9	182
Town	15	32.6	24	52.2	02	4.3	02	4.3	00	0.0	03	6.5	46
Village	11	45.8	10	47.7	01	4.2	00	0.0	00	0.0	02	8.3	24

Categories	Significant increase		Moderate increase		No change		Moderate decrease		Significant decrease		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	107	30.6	180	51.4	36	10.3	07	2.0	04	1.1	16	4.6	350
Organization													
Government	64	27.1	129	54.7	22	9.3	04	1.7	02	0.8	15	6.4	236
Private	34	37.8	41	45.6	11	12.2	03	3.3	01	1.1	00	0.0	90
Semi	09	37.5	10	41.7	03	12.5	00	0.0	01	4.2	01	4.2	24
Government													
Level of teaching													
Higher	94	29.4	167	52.2	34	10.6	06	1.9	04	1.3	15	4.7	320
Education													
Senior	03	27.3	05	45.5	01	9.1	01	9.1	00	0.0	01	9.1	11
Secondary School													
Secondary	04	57.1	02	28.6	01	14.3	00	0.0	00	0.0	00	0.0	07
School													
Middle Level	01	50.0	01	50.0	00	0.0	00	0.0	00	0.0	00	0.0	02
Primary School	05	50.0	05	50.0	00	0.0	00	0.0	00	0.0	00	0.0	10
Teaching experience													
1-5	10	37.0	13	48.1	03	11.1	00	0.0	00	0.0	01	3.7	27
6-10	10	20.4	29	59.2	05	10.2	02	4.1	01	2.0	02	4.1	49
11-15	16	23.9	34	50.7	08	11.9	02	3.0	01	1.5	06	9.0	67
16-20	17	29.3	35	60.3	01	1.7	01	1.7	01	1.7	03	5.2	58
21-25	25	39.1	27	42.2	09	14.1	02	3.1	00	0.0	01	1.6	64
26-30	15	33.3	24	53.3	05	11.1	00	0.0	00	0.0	01	2.2	45
≥ 31	14	35.0	18	45.0	05	12.5	00	0.0	01	2.5	02	5.0	40
Faculty													
Business and	12	38.7	15	48.4	03	9.7	01	3.2	00	0.0	00	0.0	31
Management													
Education	61	34.1	86	48.0	19	10.6	03	1.7	03	1.7	07	3.9	179
Humanities	22	25.9	41	48.2	11	12.9	03	3.5	01	1.2	07	8.2	85
Medical	05	20.0	19	76.0	01	4.0	00	0.0	00	0.0	00	0.0	25
Science	07	23.3	19	63.3	02	6.7	00	0.0	00	0.0	02	6.7	30

Table 7 analyzes the answer to the question, "Have you observed any changes in student motivation when using personalized learning tools? Most educators (*f* = 287, 82%) observed improvements in student motivation, with 30.6% reporting a significant increase and 51.4% noting a moderate increase. Only (*f* = 11, 3.1%) observed a decline in motivation. Asia (85.2%) demonstrated the most pronounced motivational benefits, while Europe (76.3%) showed slightly tempered enthusiasm. Gender differences were not notable (See Table 7). Private organizations educators reported the highest motivational impact (*f* = 75, 83.4%) than government (*f* = 193, 81.8%) and Semi-government (*f* = 19, 79.2%), respectively. Science (86.7%) and Medical (76%) faculties reported notable motivational improvement compared to other streams.

Table 8

Responses on What are the Potential Drawbacks of Relying on AI-driven Personalized Learning Platforms?

Categories	Accessibility barriers		Algorithm bias		Data privacy issues		Limited human interaction		Over-reliance on technology		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	17	4.9	19	5.4	40	11.4	104	29.7	162	46.3	08	2.3	350
Continent													
Africa	03	5.8	02	3.8	07	13.5	13	25.0	25	48.1	02	3.9	52
Asia	10	4.8	11	5.3	20	9.6	64	30.6	100	47.8	04	1.9	209
Australia	00	0.0	00	0.0	00	0.0	03	100.0	00	0.0	00	0.0	03
Europe	04	5.3	05	6.6	11	14.5	21	27.6	33	43.4	02	2.6	76
North America	00	0.0	01	20.0	01	20.0	02	40.0	01	20.0	00	0.0	05
South America	00	0.0	00	0.0	01	20.0	01	20.0	03	60.0	00	0.0	05
Gender													
Male	07	3.7	11	5.8	19	10.1	60	31.7	88	46.6	04	2.1	189
Female	10	6.2	08	5.0	21	13.0	44	27.3	74	46.0	04	2.5	161
Age group													
≤ 25	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	00	0.0	02
26-35	03	8.8	04	11.8	03	8.8	10	29.4	14	41.2	00	0.0	34
36-45	08	7.0	06	5.2	14	12.2	32	27.8	53	46.1	02	1.7	115
46-55	02	1.7	06	5.0	15	12.4	37	30.6	59	48.8	02	1.7	121
≥ 56	03	3.8	03	3.8	07	9.0	25	32.1	36	46.2	04	5.1	78
Qualification													
PhD	10	3.6	16	5.8	32	11.6	83	30.1	128	46.4	07	2.5	276
Masters	07	11.3	02	3.2	05	8.1	19	30.6	29	46.8	00	0.0	62
Graduate	00	0.0	01	8.3	03	25.0	02	16.7	05	41.7	01	8.3	12
Residence													
Large urban city	04	4.1	07	7.1	10	10.2	31	31.6	43	43.9	03	3.1	98
City	10	5.5	09	4.9	21	11.5	51	28.0	87	47.8	04	2.2	182
Town	02	4.3	02	4.3	06	13.0	14	30.4	22	47.8	00	0.0	46
Village	01	4.2	01	4.2	03	12.5	08	33.3	10	41.7	01	4.2	24
Organization													

Categories	Accessibility barriers		Algorithm bias		Data privacy issues		Limited human interaction		Over-reliance on technology		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	17	4.9	19	5.4	40	11.4	104	29.7	162	46.3	08	2.3	350
Government	09	3.8	17	7.2	26	11.0	65	27.5	114	48.3	05	2.1	236
Private	06	6.7	02	2.2	14	15.6	30	33.3	36	40.0	02	2.2	90
Semi	02	8.3	00	0.0	00	0.0	09	37.5	12	50.0	01	4.2	24
Government													
Level of teaching													
Higher	13	4.1	19	5.9	35	10.9	97	30.3	149	46.6	07	2.2	320
Education													
Senior	01	9.1	00	0.0	00	0.0	05	45.5	04	36.4	01	9.1	11
Secondary School													
Secondary	00	0.0	00	0.0	02	28.6	00	0.0	05	71.4	00	0.0	07
School													
Middle Level	00	0.0	00	0.0	00	0.0	01	50.0	01	50.0	00	0.0	02
Primary School	03	30.0	00	0.0	03	30.0	01	10.0	03	30.0	00	0.0	10
Teaching experience													
1-5	03	11.1	00	0.0	03	11.1	12	44.4	09	33.3	00	0.0	27
6-10	05	10.2	02	4.1	08	16.3	11	22.4	21	42.9	02	4.1	49
11-15	01	1.5	06	9.0	06	9.0	23	34.3	31	46.3	00	0.0	67
16-20	05	8.6	03	5.2	07	12.1	14	24.1	28	48.3	01	1.7	58
21-25	01	1.6	04	6.3	07	10.9	15	23.4	35	54.7	02	3.1	64
26-30	02	4.4	02	4.4	06	13.3	12	26.7	21	46.7	02	4.4	45
≥ 31	00	0.0	02	5.0	03	7.5	17	42.5	17	42.5	01	2.5	40
Faculty													
Business and	01	3.2	00	0.0	05	16.1	07	22.6	17	54.8	01	3.2	31
Management													
Education	11	6.1	10	5.6	18	10.1	58	32.4	77	43.0	05	2.8	179
Humanities	02	2.4	05	5.9	11	12.9	26	30.6	40	47.1	01	1.2	85
Medical	01	4.0	02	8.0	03	12.0	07	28.0	11	44.0	01	4.0	25
Science	02	6.7	02	6.7	03	10.0	06	20.0	17	56.7	00	0.0	30

Table 8 represents the perceived drawbacks of AI-driven personalized learning. Educators reported over-reliance on technology (f = 162, 46.3%) emerged as the foremost drawback, followed by limited human interaction (f = 104, 29.7%) and data privacy issues (f = 40, 11.4%). Algorithm bias and Accessibility barriers were cited less frequently, but remain critical ethical considerations. Geographically, the analysis of the data shows that educators from Africa and Asia have the same consensus on over-reliance on technology, while educators from Africa and Europe have a consensus on privacy issues. Male educators emphasized limited human interaction (31.7%) more than their female counterparts (27.3%), while female counterparts highlighted privacy concerns (13%) more than their male (10.1%), reflecting gendered perspectives on data safety. Humanities (47.1%) and Medical (44%) educators were most concerned about over-dependence on AL underscoring discipline specific uncertainty.

Table 9

Responses on How Important is Transparent Data Usage and Algorithmic Decision-Making to You When Using AI in Education?

Categories	Very Important		Important		Neutral		Unimportant		Very Unimportant		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	149	42.6	148	42.3	47	13.4	03	0.9	03	0.9	350
Continent											
Africa	19	36.5	22	42.3	09	17.3	01	1.9	01	1.9	52
Asia	84	40.2	92	44.0	30	14.4	01	0.5	02	1.0	209
Australia	02	66.7	00	0.0	01	33.3	00	0.0	00	0.0	03
Europe	35	46.1	33	43.4	07	9.2	01	1.3	00	0.0	76
North America	04	80.0	01	20.0	00	0.0	00	0.0	00	0.0	05
South America	05	100.0	00	0.0	00	0.0	00	0.0	00	0.0	05
Gender											
Male	73	38.6	88	46.6	24	12.7	02	1.1	02	1.1	189
Female	76	47.2	60	37.3	23	14.3	01	0.6	01	0.6	161
Age group											
≤ 25	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
26-35	16	47.1	11	32.4	06	17.6	00	0.0	01	2.9	34
36-45	46	40.0	53	46.1	15	13.0	01	0.9	00	0.0	115
46-55	58	47.9	51	42.1	10	8.3	02	1.7	00	0.0	121
≥ 56	28	35.9	33	42.3	15	19.2	00	0.0	02	2.6	78
Qualification											
PhD	116	42.0	112	40.6	42	15.2	03	1.1	03	1.1	276
Masters	26	41.9	34	54.8	02	3.2	00	0.0	00	0.0	62
Graduate	07	58.3	02	16.7	03	25.0	00	0.0	00	0.0	12
Residence											
Large urban city	44	44.9	39	39.8	14	14.3	00	0.0	01	1.0	98
City	79	43.4	72	39.8	27	14.8	02	1.1	02	1.1	182
Town	17	37.0	26	56.5	03	6.5	00	0.0	00	0.0	46
Village	09	37.5	11	45.8	03	12.5	01	4.2	00	0.0	24
Organization											
Government	108	45.8	93	39.4	31	13.1	03	1.3	01	0.4	236

Categories	Very Important		Important		Neutral		Unimportant		Very Unimportant		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	149	42.6	148	42.3	47	13.4	03	0.9	03	0.9	350
Private	32	35.6	47	52.2	11	12.2	00	0.0	00	0.0	90
Semi Government	09	37.5	08	33.3	05	20.8	00	0.0	02	8.3	24
Level of teaching											
Higher Education	138	43.1	134	41.9	43	13.4	02	0.6	03	0.9	320
Senior Secondary School	03	27.3	06	54.5	01	9.1	01	9.1	00	0.0	11
Secondary School	03	42.9	04	57.1	00	0.0	00	0.0	00	0.0	07
Middle Level	00	0.0	01	50.0	01	50.0	00	0.0	00	0.0	02
Primary School	05	50.0	03	30.0	02	20.0	00	0.0	00	0.0	10
Teaching experience											
1-5	14	51.9	09	33.3	04	14.8	00	0.0	00	0.0	27
6-10	19	38.8	21	42.9	09	18.4	00	0.0	00	0.0	49
11-15	26	38.8	30	44.8	09	13.4	01	1.5	01	1.5	67
16-20	23	39.7	27	46.6	08	13.8	00	0.0	00	0.0	58
21-25	29	45.3	30	46.9	04	6.3	00	0.0	01	1.6	64
26-30	22	48.9	13	28.9	07	15.6	02	4.4	01	2.2	45
≥ 31	16	40.0	18	45.0	06	15.0	00	0.0	00	0.0	40
Faculty											
Business and Management	11	35.5	16	51.6	03	9.7	01	3.2	00	0.0	31
Education	83	46.4	71	39.7	23	12.8	01	0.6	01	0.6	179
Humanities	35	41.2	37	43.5	11	12.9	01	1.2	01	1.2	85
Medical	09	36.0	11	44.0	04	16.0	00	0.0	01	4.0	25
Science	11	36.7	13	43.3	06	20.0	00	0.0	00	0.0	30

The study's third objective was to examine how transparency in data usage and algorithmic decision-making, along with the ethical implementation of artificial intelligence in education, contribute to building educators' trust, confidence, and acceptance of AI-driven tools and systems for teaching and learning (Tables 9-12). In this context, the first question was, how important is transparent data usage and algorithmic decision-making to you when using AI in education? Respondents of (*f* = 297, 84.9%), deemed transparent data usages and algorithmic decision-making important (*f* = 148, 42.3%) or very important (*f* = 149, 42.6%). Only (*f* = 6, 1.8%) considered it unimportant. The geographical analysis reveals significant regional variations in perceptions and practices regarding ethical AI implementation in education. Asian respondents demonstrated particularly strong consensus on the importance of transparent data usage, rating it as important (*f* = 92, 44.0%) or very important (*f* = 84, 40.2%). Europeans are more conscious about data transparency; they show more moderate responses (*f* = 68, 89.5%). Based on gender, males and females express similar concern at 85.2% and 84.2%, respectively. The data in Table 9 shows that educators believe very important transparent data usage and algorithmic decision-making are very important when using AI in education (*f* = 58, 47.9%; *f* = 16, 47.1%) in the 46-55 and 26-35 Age groups, respectively. An overview of the institutional data shows that educators from government institutions considered transparency to be very important (*f* = 108, 45.8%), while those from private institutions considered (*f* = 47, 52.2%) to be the important. Based on teaching experience, there is no significant difference in the response to this 9th question.

Table 10

Responses on Do You Believe That Ethical Implementation of AI Affects Trust and Acceptance Among Educators, Students, and Parents?

Categories	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	129	36.9	162	46.3	41	11.7	13	3.7	05	1.4	350
Continent											
Africa	15	28.8	22	42.3	09	17.3	02	3.8	04	7.5	52
Asia	82	39.2	101	48.3	18	8.6	07	3.3	01	0.5	209
Australia	02	66.7	01	33.3	00	0.0	00	0.0	00	0.0	03
Europe	22	28.9	37	48.7	13	17.1	04	5.3	00	0.0	76
North America	03	60.0	01	20.0	01	20.0	00	0.0	00	0.0	05
South America	05	100.0	00	0.0	00	0.0	00	0.0	00	0.0	05
Gender											
Male	64	33.9	87	46.0	24	12.7	10	5.3	04	2.1	189
Female	65	40.4	75	46.6	17	10.6	03	1.9	01	0.6	161
Age group											
≤ 25	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
26-35	13	38.2	17	50.0	01	2.9	02	5.9	01	2.9	34
36-45	45	39.1	53	46.1	13	11.3	04	3.5	00	0.0	115
46-55	47	38.8	54	44.6	13	10.7	04	3.3	03	2.5	121
≥ 56	23	29.5	38	48.7	13	16.7	03	3.8	01	1.3	78
Qualification											
PhD	102	37.0	121	43.8	37	13.4	11	4.0	05	1.8	276
Masters	22	35.5	37	59.7	02	3.2	01	1.6	00	0.0	62
Graduate	05	41.7	04	33.3	02	16.7	01	8.5	00	0.0	12
Residence											
Large urban city	39	39.8	39	39.8	16	16.3	04	4.1	00	0.0	98
City	65	35.7	91	50.0	18	9.9	06	3.3	02	1.1	182
Town	17	37.0	22	47.8	02	4.3	03	6.5	02	4.3	46
Village	08	33.3	10	41.7	05	20.8	00	0.0	01	4.2	24
Organization											

Categories	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	129	36.9	162	46.3	41	11.7	13	3.7	05	1.4	350
Government	89	37.7	103	43.6	30	12.7	10	4.2	04	1.7	236
Private	32	35.6	46	51.1	09	10.0	02	2.2	01	1.1	90
Semi Government	08	33.3	13	54.2	02	8.3	01	4.2	00	0.0	24
Level of Teaching											
Higher Education	120	37.5	146	45.6	36	11.3	13	4.1	05	1.6	320
Senior Secondary School	05	45.5	05	45.5	01	9.1	00	0.0	00	0.0	11
Secondary School	02	28.6	05	17.4	00	0.0	00	0.0	00	0.0	07
Middle Level	01	50.0	01	50.0	00	0.0	00	0.0	00	0.0	02
Primary School	01	10.0	05	50.0	04	40.0	00	0.0	00	0.0	10
Teaching Experience											
1-5	10	37.0	15	55.6	00	0.0	02	7.4	00	0.0	27
6-10	19	38.8	21	42.9	08	16.3	00	0.0	01	2.0	49
11-15	24	35.8	30	44.8	08	11.9	04	6.0	01	1.5	67
16-20	21	36.2	28	48.3	06	10.3	01	1.7	02	3.4	58
21-25	26	40.6	33	51.6	03	4.7	02	3.1	00	0.0	64
26-30	15	33.3	16	35.6	11	24.4	02	4.4	01	2.2	45
≥ 31	14	35.0	19	47.5	05	12.5	02	5.0	00	0.0	40
Faculty											
Business and Management	15	48.4	12	38.7	04	12.9	00	0.0	00	0.0	31
Education	62	34.6	91	50.8	18	10.1	06	3.4	02	1.1	179
Humanities	34	40.0	32	37.6	10	11.8	06	7.1	03	3.5	85
Medical	07	28.0	13	52.0	03	12.0	01	4.0	00	0.0	25
Science	11	36.7	14	46.7	05	16.7	00	0.0	00	0.0	30

Table 10 analyzes the answer to the question, "Do you believe that ethical implementation of AI affects trust and acceptance among educators, students, and parents? The data demonstrate a strong positive correlation between ethical implementation and trust, agreed (f = 162, 46.3%) and strongly agreed (f = 129, 36.9%). Experience-based educators with 21-25 years of experience showed the highest agreement rates (f = 59, 91.9%). In the pattern of discipline business/ management (87.1%) and education (85.4%) faculties showed the strongest agreement.

Table 11
Responses to What Concerns Do You have Regarding the Ethical Use of AI in Education?

Categories	Bias and fairness		Equity and access		Privacy and data security		Student autonomy		Transparency and accountability		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	76	21.7	19	5.4	104	29.7	46	13.1	97	27.7	08	2.3	350
Continent													
Africa	15	28.8	02	3.8	14	26.9	09	17.3	11	21.1	01	1.9	52
Asia	42	20.1	11	5.3	64	30.6	23	11.0	66	31.5	03	1.4	209
Australia	01	33.3	00	0.0	00	0.0	00	0.0	02	66.6	00	0.0	03
Europe	16	21.0	05	6.6	23	30.2	14	18.4	15	19.7	03		76
North America	02	40.0	00	0.0	02	40.0	00	0.0	01	20.0	00	0.0	05
South America	00	0.0	01	20.0	01	20.0	00	0.0	02	40.0	01	20.0	05
Gender													
Male	82	43.4	12	6.3	56	29.6	25	13.2	52	27.5	02	1.1	189
Female	34	21.1	07	4.3	48	29.8	21	13.0	45	27.9	06	3.7	161
Age group													
≤ 25	01	50.0	01	50.0	00	0.0	00	0.0	00	0.0	00	0.0	02
26-35	10	29.4	02	5.9	09	26.5	06	17.6	07	20.6	00	0.0	34
36-45	27	23.5	04	3.5	40	34.8	15	13.0	27	23.5	02	1.7	115
46-55	25	20.7	05	4.1	33	27.3	14	11.6	40	33.1	04	3.3	121
≥ 56	13	16.7	07	9.0	22	28.2	11	14.1	23	29.5	02	2.6	78
Qualification													
PhD	59	21.4	17	6.2	78	28.3	36	13.0	79	28.6	07	2.5	276
Masters	12	19.3	02	3.2	24	38.7	06	9.7	18	29.0	00	0.0	62
Graduate	05	41.7	00	0.0	02	16.7	04	33.3	00	0.0	01	8.3	12
Residence													
Large urban city	23	23.5	06	6.1	28	28.6	13	13.3	25	25.5	03	3.1	98
City	40	22.0	10	5.5	51	28.0	24	13.2	54	29.7	03	1.6	182
Town	07	15.2	03	6.5	16	34.8	08	17.4	11	24.0	01	2.1	46
Village	06	25.0	00	0.0	09	37.5	01	4.2	07	29.2	01	4.1	24
Organization													
Government	56	23.7	15	6.7	60	25.4	34	14.4	66	28.0	05	2.1	236
Private	14	15.6	03	3.3	40	44.4	11	12.2	20	22.2	02	2.2	90
Semi Government	06	25.0	01	4.2	04	16.7	01	4.2	11	45.8	01	4.2	24
Level of teaching													
Higher Education	70	21.9	18	5.6	89	27.8	45	14.1	91	28.4	07	2.2	320
Senior Secondary School	01	9.1	00	0.0	06	54.5	00	0.0	03	27.3	01	9.1	11

Categories	Bias and fairness		Equity and access		Privacy and data security		Student autonomy		Transparency and accountability		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	76	21.7	19	5.4	104	29.7	46	13.1	97	27.7	08	2.3	350
Secondary School	01	14.3	00	0.0	03	42.9	00	0.0	03	42.9	00	0.0	07
Middle Level	01	50.0	00	0.0	00	0.0	01	50.0	00	0.0	00	0.0	02
Primary School	03	30.0	01	10.0	06	60.0	00	0.0	00	0.0	00	0.0	10
Teaching experience													
1-5	08	29.6	00	0.0	11	40.7	02	2.4	06	22.2	00	0.0	27
6-10	11	22.4	03	6.1	11	22.4	12	24.5	12	24.5	00	0.0	49
11-15	19	28.4	03	4.5	17	25.6	07	10.4	20	29.8	01	1.49	67
16-20	08	13.8	02	3.4	26	44.8	10	10.2	10	17.2	02	3.4	58
21-25	12	18.7	05	7.8	15	23.4	03	4.7	27	42.2	02	3.1	64
26-30	10	22.2	03	6.7	12	26.7	06	13.3	12	26.7	02	4.4	45
≥ 31	08	20.0	03	7.5	12	30.0	06	15.0	10	25.0	01	2.5	40
Faculty													
Business and Management	05	16.1	02	6.4	09	29.0	07	22.5	08	25.8	00	0.0	31
Education	38	21.3	09	5.0	53	29.6	24	13.4	49	27.4	06	3.3	179
Humanities	24	28.2	07	8.2	17	20.0	09	10.5	27	31.8	01	1.2	85
Medical	05	20.0	00	0.0	11	44.0	04	16.0	04	16.0	01	4.0	25
Science	04	13.3	01	3.3	14	46.7	02	6.7	09	30.0	00	0.0	30

Table 11 analyzes the answer to the question, what concerns do you have regarding the ethical use of AI in education? The data indicate several persistent challenges educators face regarding the ethical use of AI in education. Across 350 responses privacy and data security was found to be the most significant challenge (*f* = 104, 29.7%), followed by transparency and accountability (*f* = 97, 27.7%), bias and fairness (*f* = 76, 21.7%), student autonomy (*f* = 46, 13.1%), and equity and access (*f* = 19, 5.4%). Asian educators noted that transparency and accountability are the first; and privacy and data security are the second primary challenges. At the same time, educators from Africa have accepted bias and fairness as the first and privacy and data security as the second challenges, while educators from the continent of Europe have recognized privacy and data security as the first challenge and bias and fairness as the second challenge. The study revealed that males accepted bias and fairness (*f* =82, 43.4%) are the main challenges, while both genders almost equally acknowledged privacy and data security; and transparency and accountability as challenges regarding the ethical use of AI in education. Regarding the Age group, the data shows that respondents from the 36 to 45 highly conscious for privacy and data security.

Table 12

Responses on What Measures Would You Suggest to Ensure Ethical Implementation of AI in Your Institution?

Categories	Developing clear ethical guidelines		Ensuring transparency and accountability		Fostering inclusive and diverse AI development		Providing comprehensive training		Regular Audits and Assessments		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	163	46.6	44	12.6	13	3.7	77	22.0	44	12.6	09	2.6	350
Continent													
Africa	26	50.0	01	1.9	02	3.8	14	26.9	08	15.4	01	1.9	52
Asia	96	45.9	27	12.9	08	3.8	46	22.0	27	12.9	05	2.4	209
Australia	02	66.6	01	33.3	00	0.0	00	0.0	00	0.0	00	0.0	03
Europe	32	42.1	15	19.7	03	3.9	15	19.7	09	11.8	02	2.6	76
North America	05	100.0	00	0.0	00	0.0	00	0.0	00	0.0	00	0.0	05
South America	02	40.0	00	0.0	00	0.0	02	40.0	00	0.0	01	20.0	05
Gender													
Male	83	43.9	22	11.6	09	4.8	41	21.7	28	14.8	06	3.2	189
Female	80	49.7	22	13.7	04	2.5	36	22.4	16	9.9	03	1.9	161
Age group													
≤ 25	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	00	0.0	02
26-35	15	44.1	05	14.7	02	5.9	04	11.8	07	20.6	01	2.9	34
36-45	49	42.6	12	10.4	06	5.2	29	25.2	16	13.9	03	2.6	115
46-55	59	48.8	18	14.9	03	2.5	25	20.7	13	10.7	03	2.5	121
≥ 56	39	50.0	09	11.5	01	1.3	19	24.4	08	10.3	02	2.6	78
Qualification													
PhD	127	46.0	37	13.4	10	3.6	60	21.7	33	12.0	09	3.3	276
Masters	27	43.5	07	11.3	03	4.8	15	24.2	10	16.1	00	0.0	62
Graduate	09	75.0	00	0.0	00	0.0	02	16.7	01	8.3	00	0.0	12
Residence													
Large urban city	48	49.0	12	12.2	06	6.1	20	20.4	10	10.2	02	2.0	98
City	78	42.9	26	14.3	04	2.2	44	24.2	25	13.7	05	2.7	182
Town	22	47.8	02	4.3	02	4.3	11	23.9	07	15.2	02	4.3	46
Village	15	62.5	04	16.7	01	4.2	02	8.3	02	8.3	00	0.0	24
Organization													
Government	110	46.6	32	13.6	09	3.8	51	21.6	30	12.7	04	1.7	236
Private	42	46.7	11	12.2	03	3.3	19	21.1	11	12.2	04	4.4	90
Semi Government	11	45.8	01	4.2	01	4.2	07	29.2	03	12.5	01	4.2	24

Categories	Developing clear ethical guidelines		Ensuring transparency and accountability		Fostering inclusive and diverse AI development		Providing comprehensive training		Regular Audits and Assessments		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	163	46.6	44	12.6	13	3.7	77	22.0	44	12.6	09	2.6	350
Level of teaching													
Higher	148	46.3	41	12.8	11	3.4	71	22.2	40	12.5	09	2.8	320
Education													
Senior	06	54.5	01	9.1	00	0.0	02	18.2	02	18.2	00	0.0	11
Secondary School													
Secondary	03	42.9	02	28.6	00	0.0	00	0.0	02	28.6	00	0.0	07
School													
Middle Level	01	50.0	00	0.0	00	0.0	01	50.0	00	0.0	00	0.0	02
Primary	05	50.0	00	0.0	02	20.0	03	30.0	00	0.0	00	0.0	10
School													
Teaching experience													
1-5	11	40.7	04	14.8	01	3.7	06	22.2	05	18.5	00	0.0	27
6-10	18	36.7	05	10.2	02	4.1	12	24.5	10	20.4	02	4.1	49
11-15	24	35.8	09	13.4	06	9.0	16	23.9	10	14.9	02	3.0	67
16-20	35	60.3	05	8.6	01	1.7	11	19.0	05	8.6	01	1.7	58
21-25	28	43.8	08	12.5	01	1.6	16	25.0	09	14.1	02	3.1	64
26-30	21	46.7	08	17.8	01	2.2	11	24.4	02	4.4	02	4.4	45
≥ 31	26	65.0	05	12.5	01	2.5	05	12.5	03	7.5	00	0.0	40
Faculty													
Business and Management	19	61.3	05	16.1	01	3.2	03	9.7	03	9.7	00	0.0	31
Education	80	44.7	19	10.6	05	2.8	42	23.5	28	15.6	05	2.8	179
Humanities	41	48.2	10	11.8	03	3.5	23	27.1	07	8.2	01	1.2	85
Medical	09	36.0	04	16.0	02	8.0	05	20.0	02	8.0	03	12.0	25
Science	14	46.7	06	20.0	02	6.7	04	13.3	04	13.3	00	0.0	30

The answers to the question, "What measures would you suggest to ensure ethical implementation of AI in your institution?" are analyzed in Table 12. An analysis of all the data in the table shows that all types of respondents have emphasized the development of ethical guidelines.

Table 13
Responses on How Would You Rate Your Current Level of AI Literacy?

Categories	Expert		Proficient		Intermediate		Beginner		Novice		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	22	6.3	98	28.0	129	36.9	82	23.4	19	5.4	350
Continent											
Africa	02	3.8	17	32.7	20	38.5	11	21.2	02	3.8	52
Asia	15	7.2	59	28.2	75	35.9	48	23.0	12	5.7	209
Australia	00	0.0	02	66.6	00	0.0	01	33.3	00	0.0	03
Europe	03	3.9	16	21.1	34	44.7	19	25.0	04	5.3	76
North America	01	20.0	03	60.0	00	0.0	01	20.0	00	0.0	05
South America	01	20.0	01	20.0	00	0.0	02	40.0	01	20.0	05
Gender											
Male	12	6.3	59	31.2	68	36.0	40	21.2	10	5.3	189
Female	10	6.2	39	24.2	61	37.9	42	26.1	09	5.6	161
Age group											
≤ 25	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
26-35	02	5.9	11	32.4	14	41.2	05	14.7	02	5.9	34
36-45	08	7.0	34	29.6	39	33.9	26	22.6	08	7.0	115
46-55	07	5.8	38	31.4	48	39.7	24	19.8	04	3.3	121
≥ 56	04	5.1	15	19.2	27	34.6	27	34.6	05	6.4	78
Qualification											
PhD	15	5.4	75	27.2	106	38.4	65	23.6	15	5.4	276
Masters	05	8.1	18	29.0	20	32.3	17	27.4	02	3.2	62
Graduate	02	16.7	05	41.7	03	25.0	00	0.0	02	16.7	12
Residence											
Large urban city	04	4.1	32	32.7	38	38.8	21	21.4	03	3.1	98
City	14	7.7	50	27.5	61	33.5	45	24.7	12	6.6	182
Town	01	2.2	15	32.6	21	45.7	09	19.6	00	0.0	46
Village	03	12.5	01	4.2	09	37.5	07	29.2	04	16.7	24
Organization											
Government	10	4.2	68	28.8	94	39.8	50	21.2	14	5.9	236
Private	11	12.2	22	24.4	26	38.9	26	28.9	05	5.6	90
Semi Government	01	4.2	08	33.3	09	37.5	06	25.0	00	0.0	24
Level of teaching											
Higher Education	19	5.9	87	27.2	120	37.5	77	24.1	17	5.3	320
Senior Secondary School	00	0.0	03	27.3	04	36.4	03	27.3	01	9.1	11
Secondary School	00	0.0	05	71.4	00	0.0	01	14.3	01	14.3	07
Middle Level	00	0.0	01	50.0	01	50.0	00	0.0	00	0.0	02

Categories	Expert		Proficient		Intermediate		Beginner		Novice		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	22	6.3	98	28.0	129	36.9	82	23.4	19	5.4	350
Primary School	03	30.0	02	20.0	04	40.0	01	10.0	00	0.0	10
Teaching experience											
1-5	02	7.4	09	33.3	11	40.7	04	14.8	01	3.7	27
6-10	02	4.1	09	18.4	22	44.9	15	30.6	01	2.0	49
11-15	07	10.4	22	32.8	20	29.9	11	16.4	07	10.4	67
16-20	03	5.2	18	31.0	19	32.8	14	24.1	04	6.9	58
21-25	04	6.3	17	26.6	29	45.3	13	20.3	01	1.6	64
26-30	02	4.4	15	33.3	14	31.1	11	24.4	03	6.7	45
≥ 31	02	5.0	08	20.0	14	35.0	14	35.0	02	5.0	40
Faculty											
Business and Management	01	3.2	07	22.6	15	48.4	08	25.8	00	0.0	31
Education	16	8.9	61	34.1	54	30.2	36	20.1	12	6.7	179
Humanities	02	2.4	19	22.4	34	40.0	23	27.1	07	8.2	85
Medical	00	0.0	02	8.0	13	52.0	10	40.0	00	0.0	25
Science	03	10.0	09	30.0	13	43.3	05	16.7	00	0.0	30

The study's fourth objective was to create suggestions for how technologists, policy makers, and educators might efficiently include artificial intelligence technologies into their respective fields of work, so optimizing benefits and reduce risk (Tables 13-17). In this context, the first question was How would you rate your current level of AI literacy? Table 13 reveals that only (*f* = 22, 6.3%) of educators rate themselves as experts in AI literacy, while (*f* = 129, 36.9%) identify as intermediate, and (*f* = 82, 23.4%) as beginners, indicating a significant gap in AI knowledge. Only three respondents from Europe say they have an expert in AI literacy. Data shows that males had higher AI literacy than the female respondents. Only (*f* = 19, 5.4%) PhD holders noted that they have some knowledge about AI literacy and the same number of PhD holders described themselves as experts on AI. The data in this table is surprising as it shows that even the respondents living in big urban cities are less expert in AI. Private institute respondents are more expert in AI compared to government and semi-government institute respondents.

Table 14
Responses on What Barriers do You Encounter When Trying to Integrate AI Tools into Your Teaching Practices?

Categories	Concerns about student privacy/data security		Lack of institutional support		Lack of technical knowledge/training		Limited access to resources		Time constraints		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	33	9.4	37	10.6	136	38.9	87	24.9	51	14.6	06	1.7	350
Continent													
Africa	03	5.8	12	23.1	19	36.5	09	17.3	08	15.4	01	1.9	52
Asia	14	6.7	16	7.7	93	44.5	58	27.8	26	12.4	02	1.0	209
Australia	01	33.3	00	0.0	00	0.0	02	66.6	00	0.0	00	0.0	03
Europe	12	15.8	08	10.5	20	26.3	18	23.7	15	19.7	03	3.9	76
North America	02	40.0	01	20.0	01	20.0	00	0.0	01	20.0	00	0.0	05
South America	01	20.0	00	0.0	03	60.0	00	0.0	01	60.0	00	0.0	05
Gender													
Male	14	7.4	27	14.3	69	36.5	42	22.2	33	17.5	04	2.1	189
Female	19	11.8	10	6.2	67	41.6	45	28.0	18	11.2	02	1.2	161
Age group													
≤ 25	00	0.0	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
26-35	06	17.6	08	23.5	09	26.5	08	23.5	03	8.8	00	0.0	34
36-45	06	5.2	09	7.8	48	41.7	31	27.0	18	15.7	03	2.6	115
46-55	16	13.2	13	10.7	41	33.9	33	27.3	15	12.4	03	2.5	121
≥ 56	05	6.4	06	7.7	38	48.7	14	17.9	15	19.2	00	0.0	78
Qualification													
PhD	26	9.4	28	10.1	102	37.0	70	25.4	44	15.9	06	2.2	276
Masters	04	6.5	08	12.9	28	45.2	15	24.2	07	11.3	00	0.0	62
Graduate	03	25.0	01	8.3	06	50.0	02	16.7	00	0.0	00	0.0	12
Residence													
Large urban city	10	10.2	11	11.2	40	40.8	24	24.5	12	12.2	01	1.0	98
City	16	8.8	19	10.4	66	36.3	48	26.4	29	15.9	04	2.2	182
Town	05	10.9	04	8.7	17	37.0	13	28.3	07	15.2	00	0.0	46
Village	02	8.3	03	12.5	13	54.2	02	8.3	03	12.5	01	4.2	24
Organization													
Government	24	10.2	30	12.7	85	36.0	57	24.2	35	14.8	05	2.1	236
Private	06	6.7	06	6.7	40	44.4	25	27.8	13	14.4	00	0.0	90
Semi Government	03	12.5	01	4.2	11	45.8	05	20.8	03	12.5	01	4.2	24
Level of teaching													
Higher Education	32	10.0	31	9.7	127	39.7	76	23.8	48	15.0	06	1.9	320
Senior Secondary	00	0.0	02	18.2	03	27.3	04	36.4	02	18.2	00	0.0	11

Categories	Concerns about student privacy/data security		Lack of institutional support		Lack of technical knowledge/training		Limited access to resources		Time constraints		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	33	9.4	37	10.6	136	38.9	87	24.9	51	14.6	06	1.7	350
School													
Secondary	01	14.3	01	14.3	03	42.9	02	28.6	00	0.0	00	0.0	07
School													
Middle Level	00	0.0	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
Primary	00	0.0	02	20.0	03	30.0	04	40.0	01	10.0	00	0.0	10
School													
Teaching experience													
1-5	02	7.4	03	11.1	12	44.4	07	25.9	03	11.1	00	0.0	27
6-10	03	6.1	09	18.4	19	38.8	10	20.4	07	14.3	01	2.0	49
11-15	03	4.5	07	10.4	28	41.8	18	26.9	09	13.4	02	3.0	67
16-20	09	15.5	05	8.6	20	34.5	18	31.0	06	10.3	00	0.0	58
21-25	07	10.9	05	7.8	23	35.9	18	28.1	09	14.1	02	3.1	64
26-30	06	13.3	02	4.4	16	35.6	11	24.4	09	20.0	01	2.2	45
≥ 31	03	7.5	06	15.0	18	45.0	05	12.5	08	20.0	00	0.0	40
Faculty													
Business and Management	01	3.2	01	3.2	14	45.2	10	32.3	05	16.1	00	0.0	31
Education	20	11.2	23	12.8	69	38.5	40	22.3	23	12.8	04	2.2	179
Humanities	08	9.4	09	10.6	32	37.6	22	25.9	12	14.1	02	2.4	85
Medical	01	4.0	01	4.0	14	56.0	05	20.0	04	16.0	00	0.0	25
Science	03	10.0	03	10.0	07	23.3	10	33.3	07	23.3	00	0.0	30

Table 14 identifies key barriers to AI integration, with (f = 136, 38.9%) of educators citing a lack of technical knowledge or training as the obstacle, followed by limited access to resources (f = 87, 24.9%) and institutional support (f = 37, 10.6%). Notably, faculty from Education and Humanities disciplines report higher levels of concern about training and resistance, indicating that pedagogical domains may require more foundational AI exposure compared to more technical faculties.

Table 15
Responses on What Types of Training or Resources Would Help You Overcome These Barriers?

Categories	Access to AI tools and software		Institutional support programs		Privacy and data security training		Technical workshops and tutorials		Time management support		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	97	27.7	61	17.4	24	6.9	142	40.6	21	6.0	05	1.4	350
Continent													
Africa	13	25.0	13	25.0	02	3.8	21	40.4	02	3.8	01	1.9	52
Asia	60	28.7	27	12.9	11	5.3	94	45.0	15	7.2	02	1.0	209
Australia	02	66.6	00	0.0	01	33.3	00	0.0	00	0.0	00	0.0	03
Europe	21	27.6	21	27.6	08	10.5	22	28.9	03	3.9	01	1.3	76
North America	01	20.0	00	0.0	01	20.0	02	40.0	00	0.0	01	20.0	05
South America	00	0.0	00	0.0	01	20.0	03	60.0	01	20.0	00	0.0	05
Gender													
Male	55	29.1	39	20.6	09	4.8	70	37.0	13	6.9	03	1.6	189
Female	42	26.1	22	13.7	15	9.3	72	44.7	08	5.0	02	1.2	161
Age group													
≤ 25	00	0.0	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
26-35	09	26.5	08	23.5	03	8.8	12	35.3	02	5.9	00	0.0	34
36-45	36	31.3	11	9.6	06	5.2	49	42.6	11	9.6	02	1.7	115
46-55	37	30.6	27	22.3	12	9.9	39	32.2	04	3.3	02	1.7	121
≥ 56	15	19.2	14	17.9	03	3.8	41	52.6	04	5.1	01	1.3	78
Qualification													
PhD	79	28.6	49	17.8	19	6.9	108	39.1	16	5.8	05	1.8	276
Masters	17	27.4	11	17.7	02	3.2	27	43.5	05	8.1	00	0.0	62
Graduate	01	8.3	01	8.3	03	25.0	07	58.3	00	0.0	00	0.0	12
Residence													
Large urban city	23	23.5	19	19.4	07	7.1	46	46.9	03	3.1	00	0.0	98
City	55	30.2	34	18.7	12	6.6	64	35.2	13	7.1	04	2.2	182
Town	14	30.4	05	10.9	04	8.7	18	39.1	04	8.7	01	2.2	46
Village	05	20.8	03	12.5	01	4.2	14	58.3	01	4.2	00	0.0	24
Organization													
Government	67	28.4	46	19.5	16	6.8	90	38.1	15	6.4	02	0.8	236
Private	25	27.8	12	13.3	05	5.6	40	44.4	06	6.7	02	2.2	90
Semi Government	05	20.8	03	12.5	03	12.5	12	50.0	00	0.0	01	4.2	24
Level of Teaching													
Higher	87	27.2	55	17.2	23	7.2	130	40.6	20	6.3	05	1.6	320

Categories	Access to AI tools and software		Institutional support programs		Privacy and data security training		Technical workshops and tutorials		Time management support		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	97	27.7	61	17.4	24	6.9	142	40.6	21	6.0	05	1.4	350
Education													
Senior Secondary School	04	36.4	02	18.2	00	0.0	05	45.5	00	0.0	00	0.0	11
Secondary School	03	42.9	01	14.3	01	14.3	02	28.6	00	0.0	00	0.0	07
Middle Level	00	0.0	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
Primary School	03	30.0	02	20.0	00	0.0	04	40.0	01	10.0	00	0.0	10
Teaching Experience													
1-5	04	14.8	07	25.9	01	3.7	12	44.4	03	11.1	00	0.0	27
6-10	14	28.6	11	22.4	03	6.1	18	36.7	03	6.1	00	0.0	49
11-15	26	38.8	06	9.0	02	3.0	26	38.8	05	7.5	02	3.0	67
16-20	19	32.8	08	13.8	08	13.8	22	37.9	01	1.7	00	0.0	58
21-25	17	26.6	09	14.1	05	7.8	26	40.6	05	7.8	02	3.1	64
26-30	10	22.2	11	24.4	04	8.9	17	37.8	03	6.7	00	0.0	45
≥ 31	07	17.5	09	22.5	01	2.5	21	52.5	01	2.5	01	2.5	40
Faculty													
Business and Management	11	35.5	06	19.4	01	3.2	11	35.5	02	6.5	00	0.0	31
Education	45	25.1	32	17.9	13	7.3	74	41.3	13	7.3	02	1.1	179
Humanities	25	29.4	14	16.5	05	5.9	38	44.7	00	0.0	03	3.5	85
Medical	05	20.0	03	12.0	03	12.0	11	44.0	03	12.0	00	0.0	25
Science	11	36.7	06	20.0	02	6.7	08	26.7	03	12.0	00	0.0	30

Table 15 shows that educators' priorities are technical workshops and tutorials (*f* = 142, 40.6%) and access to AI tool (*f* = 97, 27.7%) as the most needed resources to overcome these barriers. This suggests educators are seeking not just abstract knowledge, but practical, hands-on opportunities to interact with AI system. Interestingly, female respondents showed a slightly higher preference for structured technical workshops than their male counterparts, implying the need for inclusive training strategies.

Table 16

Responses on How Supportive is Your Institution in Providing the Necessary Tools and Training of AI Integration?

Categories	Very supportive		Somewhat supportive		Neutral		Somewhat unsupportive		Not supportive at all		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	72	20.6	107	30.6	110	31.4	33	9.4	28	8.0	350
Continent											
Africa	13	25.0	15	28.8	13	25.0	08	15.4	03	5.8	52
Asia	49	23.4	67	32.1	62	29.7	16	7.7	15	7.2	209
Australia	00	0.0	01	33.3	02	66.6	00	0.0	00	0.0	03
Europe	06	7.9	22	28.9	30	39.5	08	10.5	10	13.2	76
North America	01	20.0	02	40.0	01	20.0	01	20.0	00	0.0	05
South America	03	60.0	00	0.0	02	40.0	00	0.0	00	0.0	05
Gender											
Male	40	21.2	56	29.6	54	28.6	21	11.1	18	9.5	189
Female	32	19.9	51	31.7	56	34.8	12	7.5	10	6.2	161
Age group											
≤ 25	01	50.0	00	0.0	01	50.0	00	0.0	00	0.0	02
26-35	06	17.6	09	26.5	13	38.2	02	5.9	04	5.9	34
36-45	23	20.0	34	29.6	36	31.3	10	8.7	12	8.7	115
46-55	19	15.7	38	31.4	41	33.9	14	11.6	09	11.6	121
≥ 56	23	29.5	26	33.3	19	24.4	07	9.0	03	9.0	78
Qualification											
PhD	48	17.4	91	33.0	90	32.6	23	8.3	24	8.7	276
Masters	20	32.3	12	19.4	16	25.8	10	16.1	04	6.5	62
Graduate	04	33.3	04	33.3	04	33.3	00	0.0	00	0.0	12
Residence											
Large urban city	11	11.2	37	37.8	33	33.7	14	14.3	03	3.1	98
City	43	23.6	51	28.0	60	33.0	11	6.0	17	9.3	182
Town	11	23.9	15	32.6	09	19.6	06	13.0	05	1.09	46
Village	07	29.2	04	16.7	08	33.3	02	8.3	03	12.5	24
Organization											
Government	39	16.5	78	33.1	77	32.6	22	9.3	20	8.5	236
Private	27	30.0	20	22.2	29	32.2	08	8.9	06	6.7	90
Semi Government	06	25.0	09	37.5	04	16.7	03	12.5	02	8.3	24
Level of teaching											
Higher Education	63	19.7	101	31.6	98	30.6	33	10.3	25	7.8	320
Senior Secondary School	05	45.4	00	0.0	05	45.4	00	0.0	01	9.1	11
Secondary School	01	14.3	03	42.8	02	28.6	00	0.0	01	14.3	07
Middle Level	00	0.0	01	50.0	01	50.0	00	0.0	00	0.0	02

Categories	Very supportive		Somewhat supportive		Neutral		Somewhat unsupportive		Not supportive at all		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	72	20.6	107	30.6	110	31.4	33	9.4	28	8.0	350
Primary School	03	30.0	02	20.0	04	40.0	00	0.0	01	10.0	10
Teaching experience											
1-5	07	25.9	09	33.3	08	29.6	02	7.4	01	3.7	27
6-10	04	8.2	09	18.4	23	46.9	05	10.2	08	16.3	49
11-15	11	16.4	20	29.8	19	28.3	10	14.9	07	10.5	67
16-20	11	19.0	21	36.2	17	29.3	05	8.6	04	6.9	58
21-25	15	23.4	22	34.4	21	32.8	02	3.1	04	6.3	64
26-30	10	22.2	14	31.1	14	31.1	05	11.1	02	4.5	45
≥ 31	14	35.0	12	30.0	08	20.0	04	10.0	02	5.0	40
Faculty											
Business and Management	06	19.4	10	32.3	12	38.7	02	6.5	01	3.2	31
Education	41	22.9	52	29.1	48	26.8	20	11.2	18	10.1	179
Humanities	14	16.5	28	32.9	30	35.3	06	7.1	07	8.2	85
Medical	03	12.0	11	44.0	08	32.0	02	8.0	01	4.0	25
Science	08	26.7	06	20.0	12	40.0	03	10.0	01	3.3	30

Table 16 indicates mixed institutional support, with only (*f* = 72, 20.6%) of educators describing their institutions as very supportive of AI integration, while (*f* = 107, 30.6%) noted somewhat supportive. A significant (*f* = 110, 31.4%) remained neutral, and (*f* = 61, 17.4%) reported limited support. This lukewarm response indicates a lack of consistent institutional initiatives across the global educational system. Geographical variations show educators that the table indicates African and Asian institutions are more supportive compared to European institutions. Males (*f* = 40, 21.2%) perceived slightly more support than females (*f* = 32, 19.9%). Master's holders (*f* = 20, 32.3%) perceived stronger support than PhD holders (*f* = 48, 17.4%).

Table 17

Responses on Please Share Any Additional Thoughts or Suggestions on How to Enhance AI Literacy Among Educators and Facilitate AI Integration in Higher Education

Categories	Collaborative learning communities		Integration of AI into curriculum		Ongoing support and mentorship		Partnerships with tech companies		Professional development programs		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	71	20.3	106	30.3	36	10.3	19	5.4	107	30.6	11	3.1	350
Continent													
Africa	10	19.2	20	38.5	05	9.6	01	1.9	13	25.0	03	5.8	52
Asia	50	23.9	58	27.8	16	7.7	09	4.3	71	34.0	05	2.4	209
Australia	00	0.0	00	0.0	00	0.0	01	33.3	02	66.7	00	0.0	03
Europe	09	11.8	25	32.9	15	19.7	06	7.9	18	23.7	03	3.9	76
North America	01	20.0	02	40.0	00	0.0	01	20.0	01	20.0	00	0.0	05
South America	01	20.0	01	20.0	00	0.0	01	20.0	02	40.0	00	0.0	05
Gender													
Male	46	24.3	63	33.3	16	8.5	04	2.1	53	28.0	07	3.7	189
Female	25	15.5	43	26.7	20	12.4	15	9.3	54	33.5	04	2.5	161
Age group													
≤ 25	00	0.0	00	0.0	00	0.0	01	50.0	01	50.0	00	0.0	02
26-35	11	32.4	10	29.4	03	8.8	01	2.9	08	23.5	01	2.9	34
36-45	21	18.3	34	29.6	08	7.0	09	7.8	39	33.9	04	3.5	115
46-55	25	20.7	32	26.4	13	10.7	06	5.0	42	34.7	03	2.5	121
≥ 56	14	17.9	30	38.5	12	15.4	02	2.6	17	21.8	03	3.8	78
Qualification													
PhD	53	19.2	86	31.2	27	9.8	14	5.1	85	30.8	11	4.0	276
Masters	14	22.6	15	24.2	09	14.5	05	8.1	19	30.6	00	0.0	62
Graduate	04	33.3	05	41.7	00	0.0	00	0.0	03	25.0	00	0.0	12
Residence													
Large urban city	18	18.4	31	31.6	07	7.1	07	7.1	34	34.7	01	1.0	98
City	38	20.9	49	26.9	22	12.1	10	5.5	55	30.2	08	4.4	182
Town	09	19.6	15	32.6	07	15.2	01	2.2	12	26.1	02	4.3	46
Village	06	25.0	11	45.8	00	0.0	01	4.2	06	25.0	00	0.0	24
Organization													
Government	53	22.5	79	33.5	26	11.0	12	5.1	59	25.0	07	3.0	236
Private	13	14.4	23	25.6	07	7.8	06	6.7	39	43.3	02	2.2	90
Semi Government	05	20.8	04	16.7	03	12.5	01	4.2	09	37.5	02	8.3	24
Level of teaching													
Higher Education	62	19.4	95	29.7	35	10.9	16	5.0	101	31.6	11	3.4	320
Senior Secondary	04	36.4	04	36.4	01	9.1	00	0.0	02	18.2	00	0.0	11

Categories	Collaborative learning communities		Integration of AI into curriculum		Ongoing support and mentorship		Partnerships with tech companies		Professional development programs		Other		Total
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*n*
Total response	71	20.3	106	30.3	36	10.3	19	5.4	107	30.6	11	3.1	350
School													
Secondary	03	42.9	02	28.6	00	0.0	01	14.3	01	14.3	00	0.0	07
School													
Middle Level	00	0.0	02	100.0	00	0.0	00	0.0	00	0.0	00	0.0	02
Primary	02	20.0	03	30.0	00	0.0	02	20.0	03	30.0	00	0.0	10
School													
Teaching experience													
1-5	11	40.7	05	18.5	00	0.0	01	3.7	10	37.0	00	0.0	27
6-10	07	14.3	13	26.5	09	18.4	02	4.1	16	32.7	02	4.1	49
11-15	11	16.4	23	34.3	04	6.0	06	9.0	22	32.8	01	1.5	67
16-20	12	20.7	18	31.0	04	6.9	02	3.4	19	32.8	03	5.2	58
21-25	11	17.2	19	29.7	08	15.5	05	7.8	19	29.7	02	3.1	64
26-30	11	24.4	12	26.7	06	13.3	01	2.2	13	28.9	02	4.4	45
≥ 31	08	20.0	16	40.0	05	12.5	02	5.0	08	20.0	01	2.5	40
Faculty													
Business and Management	04	12.9	13	41.9	02	6.5	02	6.5	09	29.0	01	3.2	31
Education	39	21.8	48	26.8	20	11.2	09	5.0	57	31.8	06	3.4	179
Humanities	20	23.5	23	27.1	09	10.6	05	5.9	25	29.4	03	3.5	85
Medical	04	16.0	08	32.0	04	16.0	03	12.0	05	20.0	01	4.0	25
Science	04	13.3	14	46.7	01	3.3	00	0.0	11	36.7	00	0.0	30

Finally, Table 17 suggests strategies for enhancing AI literacy, while educators advocating for collaborative learning communities (*f* = 71, 20.3%), curriculum integration (*f* = 106, 30.3%), and professional development programs (*f* = 107, 30.6%). These findings underscore the need for targeted training, institutional commitment, and resource allocation to improve AI literacy and facilitate smoother integration of AI tools in education. Teaching experience correlates with AI integration, where mid-career professionals (16-25 years) show greater adoption than newer or neering-retirement faculty. Furthermore, the education faculty leads in frequent AI usage, reflecting greater exposure to educational technology tools in pedagogical disciplines.

The results from 1 to 5 provide a comprehensive evaluation of Hypothesis 1, which posits that educational institutions that effectively utilize AI technologies will experience improved learning outcomes compared to those relying solely on traditional methods. Results supported high adoption (Table 1) and strong belief in AI's potential (Tables 2, 4). Low familiarity (Table 3) and insufficient training indicate that effective integration requires addressing literacy gaps and resource disparities.

The analysis of Table 6-8 substantiates Hypothesis 2, demonstrating that AI-driven personalized learning platforms significantly enhance student engagement and motivation. However, the findings also reveal critical challenges, particularly concerning over-reliance, reduced human interaction, and privacy risks that must be addressed to optimize AI integration.

The data Tables 9-12 strongly support Hypothesis 3, which posits that ethical implementation of AI in education, includes transparent data usage and algorithmic decision-making. Positively impacts trust and acceptance among educators, students, and parents. Table 9 reported that most respondents considered transparent data usage and algorithmic decision-making "very important" or "important." Additionally, Table 10 responses show that AI implementation affects trust and acceptance. Key concerns included privacy and data security; and transparency in Table 11, while suggested measures to ensure ethical implementation focused on developing clear guidelines and providing comprehensive training (see Table 12). These findings highlight the critical role of ethical practices in fostering confidence and the adoption of AI-driven tools in education.

The data robustly support Hypothesis 4, revealing that low AI literacy and inadequate institutional support are major impediments to integration. Addressing these through hands-on training, resource allocation, and curriculum enhancements, particularly in underserved sectors, would empower educators and accelerate AI adoption. The findings call for systemic investments in literacy programs and infrastructure to unlock AI's potential across diverse educational contexts.

Discussion

The global integration of AI in education reveals a landscape of transformative potential tempered by significant challenges. The study survey of 350 educators highlights high AI adoption (74.3%, Table 1), particularly in personalized learning and administrative efficiency, aligning with Alam and Hasan's (2004) observation that AI-driven personalization fosters interactive, dynamic pedagogies. However, stark regional disparities persist: while Asian educators report 78.9% adoption, African respondents lag at 59.6% (Table 1), reflecting infrastructural and socioeconomic inequities also documented in Tabzania (Matto & Ponera, 2025) and Brazil (Costa et al., 2025). Key barriers: insufficient training (30.9%), technical difficulties (22.3%), and resistance to change (16.0%, Table 5) – echo global concerns about unprepared educators (Unal & Hobe, 2025), underscoring that access alone cannot drive effective integration.

Learning emerges as a cornerstone for enhancing engagement (74% efficacy, Table 6) and motivation (82% observed improvements, Table 7). These findings resonate with Huang et al.'s (2023) flipped-classroom experiments, where AI–curated content amplified student outcomes. Yet critical drawbacks surface: Over-reliance on technology (46.3%) and eroded human interaction (29.7%, Table 8), alongside discipline-specific skepticism. Medical educators, for instance, report lower confidence in AI efficacy (64%, Table 6) than business counterparts (80.7%), likely due to concerns about AI's role in high-stakes decision-making (Nasser, 2024).

Ethical risks further complicate adoption, with algorithmic bias (21.7%) and data privacy (29.7%, Table 11) dominating educator concerns-a theme amplified in Pandey's (2025) call for "trust-by-design" frameworks. Transparency and ethics are non-negotiable for stakeholder trust. An overwhelming 84.9% of educators deem transparent data usage "important" or "very important" (Table 9), while ethical implementation correlates strongly with institutional trust (83.2% agreement, Table 10). This mirrors Malone's (2025) advocacy for inclusive development processes to mitigate bias. Nevertheless, AI literacy remains critically low: Only 6.3% of educators self-rate as "experts" (Table 13), and just 20.6% describe their institutions as "very supportive" (Table 16). This gap stifles innovation despite proven benefits, reinforcing Dacid and Maroma's (2025) plea for curriculum-embedded AI training and Hoang's (2025) "e-leadership" model prioritizing institutional commitment.

To harness AI's potential, stakeholders must act collaboratively: educators should pursue pedagogical AI upskilling to critically evaluate tools (Zormanova, 2024): the Institute must develop enforceable ethical guidelines addressing privacy (e.g., GDPR compliance), algorithmic accountability, and access equity (Soler-Dominguez et al., 2025); policymakers ought to fund infrastructure in marginalized regions and incentivize public-private partnerships

(Altememy et al., 2023); and technologists need to co-design tools with educators to ensure pedagogical alignment.

Conclusion

AI's potential in education is undeniable, yet its success hinges on addressing ethical, logistical, and pedagogical challenges through collaborative stakeholder action. Our study underscores that ethical transparency, equitable access, and educator empowerment are not ancillary concerns—they are foundational to harnessing AI as a force for inclusive educational transformation. As AI evolves, continuous dialogue between researchers, practitioners, and policymakers will be essential to navigate this complex landscape responsibly.

Ethics statements

The study adhered to the ethical principles outlined in the Declaration of Helsinki (as applicable to social science research). The survey was anonymous, voluntary, and posed minimal risk to participants. No personal identifiers were collected. Therefore, formal ethics committee approval was not required under applicable institutional guidelines.

Data Availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

AI Use Statement

The authors used Grammarly and ChatGPT for grammar checking, improving sentence clarity, and language improvement. The author reviewed and edited the output and takes full responsibility for the final content.

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