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BLENDING ARTIFICIAL INTELLIGENCE WITH CONVENTIONAL METHODS: STRATEGIES FOR A HYBRID EDUCATIONAL MODEL IN EKITI STATE, NIGERIA

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Abstract

This study examined the integration of artificial intelligence (AI) with conventional teaching methods to develop effective hybrid instructional strategies for enhancing student learning outcomes in secondary schools in Ekiti State, Nigeria. This study adopted a quantitative research design to examine the integration of AI-enhanced learning tools in secondary schools in Ekiti State, Nigeria. The population comprised secondary school teachers and students, from which 400 teachers and 150 students were randomly selected. Teachers completed structured questionnaires assessing AI awareness, preparedness, challenges, and views on blending AI with traditional methods. A quasi-experimental design was used for students, divided into three groups: AI-enhanced, conventional, and hybrid learning. The Students' Performance Test (SPT) was used to conduct pre- and post-tests to measure instructional effectiveness. Expert reviews confirmed the validity of both instruments, while reliability was established using Cronbach's alpha and correlation analysis yielding a reliability coefficient of 0.89 and 0.82 respectively. Trained research assistants facilitated data collection. Data were analyzed using descriptive statistics and ANOVA. Ethical standards were observed, with informed consent, confidentiality, and anonymity ensured. The findings revealed that while AI adoption is growing, many teachers lack the training and technical skills required for effective use, with key challenges including insufficient training, poor infrastructure, and high costs. Despite these barriers, most teachers supported blending AI with traditional methods, and the hybrid model emerged as the most effective in improving student performance. The study recommended continuous professional development, investment in digital infrastructure, the introduction of pilot AI programs, and the formulation of clear policies to guide AI integration in education

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1. INTRODUCTION

In recent years, there has been a growing interest in the integration of Artificial Intelligence (AI) within educational systems to support and enhance conventional teaching practices. AI technologies, such as intelligent tutoring systems, adaptive learning platforms, automated grading software, and personalized

learning environments, offer new possibilities for improving learning outcomes and addressing diverse educational needs (Holmes et al., 2020). Globally, teachers are exploring how AI can complement conventional teaching methods to form hybrid models that enhance both teaching efficiency and students' engagement especially in Science and related subject such as Mathematics.

The rapid advancement of AI has sparked significant shifts in various sectors, including education. AI technologies, such as personalized tutoring and predictive analytics, have the potential to revolutionize classroom teaching by improving efficiency, personalizing learning experiences, and enhancing overall educational outcomes (Holmes et al., 2020). However, despite AI's promise, its integration into conventional teaching methods remains a challenge, particularly in regions with limited technological infrastructure, such as Ekiti State, Nigeria.

In Ekiti State, educational challenges such as large class sizes, lack of infrastructure, and limited access to technology have long hindered learning. However, with the advent of AI, these challenges can be mitigated through personalized learning tools and the automation of administrative tasks. Despite these opportunities, the successful implementation of a hybrid educational model requires an understanding of teachers' awareness of AI technologies, their readiness to use these tools, and the challenges they face (Adesina & Olaniyi, 2021). The success of AI integration depends largely on teachers' preparedness and willingness to embrace these technologies while overcoming potential barriers like fear of job redundancy and lack of technical expertise (Rasheed et al., 2019).

Additionally, students' attitudes toward AI in the classroom play a crucial role in determining the success of its integration. Research shows that AI-enhanced learning can positively influence students' motivation, critical thinking, and problem-solving skills (Zawacki-Richter et al., 2019). However, the effectiveness of AI tools depends on how well they are integrated with conventional methods to promote a balanced hybrid educational model. In contexts like Ekiti State, understanding both teachers' and students' perspectives is essential to developing strategies that foster the effective use of AI alongside conventional pedagogical techniques.

The integration of AI in education presents an opportunity to modernize teaching practices and improve student learning outcomes. In Ekiti State, where conventional teaching methods dominate, blending AI technologies with conventional techniques could offer a hybrid model that enhances educational experiences. This study explores teachers' awareness and preparedness to use AI tools in classrooms and identifies challenges that hinder its effective use. Additionally, it examines how students perceive AI-enhanced learning and its effects on their motivation and critical thinking skills, providing insights into how AI can improve learning across various subjects.

The development of a hybrid educational model, blending AI with conventional teaching methods, holds great promise for addressing educational challenges in Ekiti State. By evaluating teachers' awareness of AI-enhanced learning tools, assessing their preparedness to incorporate AI into their classrooms, and identifying the obstacles to AI integration, this study seeks to propose strategies for leveraging AI to improve student performance across various subjects.

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Hybrid Educational Model: Blending AI with Conventional Methods

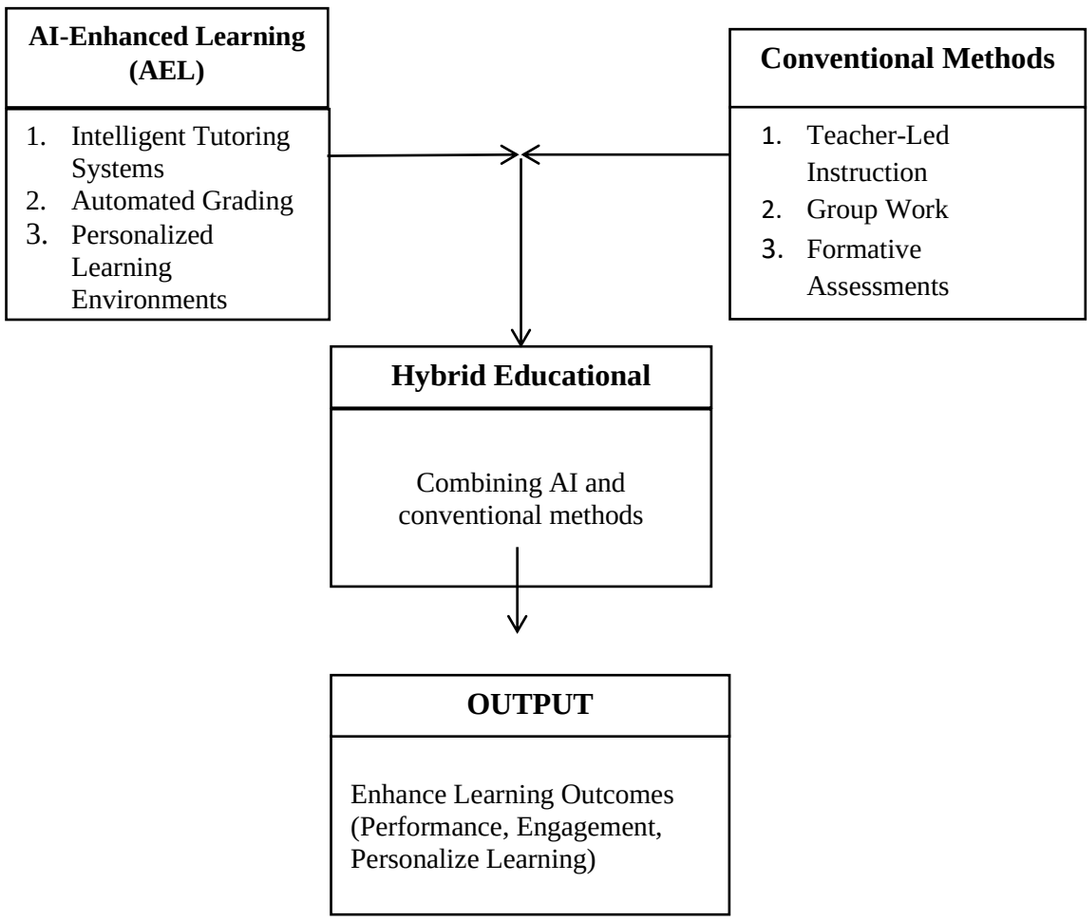

Figure 1: Framework of Hybrid Educational Model **(Source: Authors ' Design)**

The Hybrid Educational Model exemplifies the synergy between AI-Enhanced Learning and Conventional Teaching methods, demonstrating how their integration can significantly enhance educational outcomes and improve teaching efficiency. By blending advanced technological tools with conventional pedagogical approaches, this model offers a comprehensive framework that caters to diverse student needs and learning styles.

1. AI-Enhanced Learning

Intelligent Tutoring Systems play a crucial role in this model by employing AI to deliver personalized instruction and feedback. These systems adapt to the unique learning paces and styles of individual students, ensuring they receive tailored support that meets their specific needs. This personalized approach not only enhances student understanding but also fosters a more engaging learning experience.

Automated Grading is another significant feature of AI-Enhanced Learning. By utilizing AI to streamline the grading process, teachers can quickly and accurately assess student work. This efficiency allows teachers to allocate more time to instructional activities rather than administrative tasks, thereby

enriching the educational experience for students.

Personalized Learning Environments further capitalize on technology to create customized learning experiences. By addressing each student's strengths and weaknesses, these environments promote better engagement and understanding, allowing learners to progress at their own pace and ensuring that they remain motivated and focused.

2. Conventional Teaching

In contrast, Conventional Teaching methods provide a structured framework that includes Teacher-Led Instruction. This approach emphasizes direct knowledge transfer from teachers to students, establishing a foundation of essential skills within a well-organized setting. Teacher-led instruction is vital for introducing complex concepts and guiding students through foundational material.

Group Work enhances the learning experience by encouraging collaboration among students. Through interactive activities, learners can engage in peer-to-peer interactions, which foster teamwork and develop essential communication skills. This collaborative approach not only builds social connections but also deepens understanding through shared knowledge and experiences.

Formative Assessments are an integral part of Conventional Teaching. These ongoing evaluations track student progress and provide critical feedback, enabling both teachers and learners to make informed decisions about future instructional strategies. This iterative process supports continuous improvement and adaptability in teaching.

3. Hybrid Educational Model

The Hybrid Educational Model represents a modern approach to teaching and learning that blends the power of Artificial Intelligence (AI) with traditional, human-centered teaching methods. It serves as the central point where both approaches merge to create a more balanced, effective, and responsive learning environment.

The Hybrid Educational Model does not aim to replace one teaching method with another. Instead, it integrates two complementary approaches:

- AI-enhanced tools such as intelligent tutoring systems, automated grading, and personalized learning platforms.
- Conventional teaching methods like teacher-led instruction, group work, and formative assessments.

By fusing technology with traditional pedagogy, this model allows learners to gain the efficiency, scalability, and personalization that AI offer, while also benefiting from the empathy, creativity, and human connection provided by skilled educators. This synergy leads to a more well-rounded and impactful learning experience.

Implementing the Hybrid Educational Model Leads to:

1. Improved Performance: The integration of AI tools allows for tailored content delivery, while traditional methods

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ensure supportive instruction. This combination helps students grasp concepts more effectively, leading to better academic outcomes.

2. Greater Student Engagement: When learning is interactive, responsive, and relevant, students are more likely to participate actively. The hybrid model keeps learners motivated by blending digital tools with dynamic classroom activities.

3. Personalized Learning Experiences: Each student receives individualized attention through AI-driven analytics and adaptive learning systems, while teachers provide contextual support. This ensures that learning is aligned with students' pace, strengths, and needs.

Statement of the Problem

Artificial Intelligence (AI) continues to make strides in educational systems globally and the adoption of AI-enhanced learning tools in schools across Ekiti State, Nigeria, appears to be progressing slowly. Various contextual factors such as large class sizes, limited technological infrastructure and restricted access to digital resources seem to pose significant barriers to effective integration. Additionally, many teachers may not yet have the necessary awareness, confidence, or preparation to incorporate AI meaningfully into their instructional practices. Challenges such as insufficient training opportunities, concerns about job displacement, and the perceived complexity of AI tools could further limit their willingness to engage with such technologies. Although research suggests that AI has the potential to enhance learning outcomes, its practical application within this context may depend on how well it is blended with conventional teaching methods. A deeper understanding of the factors influencing teacher and student engagement with AI is likely needed to support the development of a functional hybrid educational model. This study seeks to explore these dynamics by examining teachers' readiness to integrate AI into the classroom and identifying the barriers that may hinder its effective use, with the aim of proposing strategies for a workable hybrid approach in Ekiti State.

Research Questions

1. What is the level of teachers' awareness of various AI-enhanced learning tools available for classroom instruction?
2. How prepared are teachers to integrate AI technologies into their teaching practices?
3. What are the challenges of adopting AI-enhanced learning strategies?
4. What are teachers' opinions on blending AI with conventional teaching methods?

Research Hypothesis

1. There is no significant difference in the performance of student expose to the hybrid educational model, the conventional methods and AI-enhanced learning tools.

2. METHOD

This study employed a quantitative research design to investigate the integration of AI-enhanced learning tools within secondary schools in Ekiti State, Nigeria, enabling the collection and analysis of numerical data to identify patterns and significant differences among variables. The population comprised secondary school teachers and students from schools implementing AI tools. A random sampling technique was used to select 400 teachers and 150 students. While data from teachers were collected using structured questionnaires assessing awareness of AI tools, preparedness for integration, adoption challenges, and opinions on blending AI with traditional methods, a quasi-experimental research design was adopted for the student participants. The 150 students were assigned to three instructional groups: AI-enhanced learning, conventional learning, and hybrid model. The Students' Performance Test (SPT) was used as the instrument for administering pre- and post-tests to evaluate the effectiveness of each instructional approach. The teacher questionnaire was validated through expert review, and its reliability was confirmed using Cronbach's alpha. For the SPT, content and face validity were established through expert evaluation in line with curriculum standards, and reliability was tested via a pilot study, and correlation analysis yielding a reliability coefficient of 0.89 and 0.82 respectively. Trained research assistants supported the administration of the instruments to ensure consistency and clarity. Data were analyzed using descriptive statistics to summarize responses and inferential statistics, including ANOVA, to compare learning outcomes across the groups. Informed consent was obtained from all participants, with confidentiality and anonymity maintained throughout the study.

3. RESULTS AND DISCUSSION

4. Level of teachers' awareness of various AI-enhanced learning tools available for classroom instruction

5. Table 1: Frequency counts and Percentages of Responses on the level of teachers' awareness of various AI-enhanced learning tools available for classroom instruction

Familiarity with AI Learning tools	Frequency (n=400)	Percentages (%)
Not familiar at all	194	48.5
Slightly familiar	64	16
Somewhat familiar	48	12
Very familiar	70	17.5
Extremely familiar	24	6
AI-ehanced Learning Tools Aware of	**Frequency (n=400)**	**Percentages (%)**
Intelligent Tutoring Systems (e.g., Carnegie Learning)	58	14.5
Automated Grading Systems (e.g., Gradescope)	70	17.5
Personalized Learning Platforms (e.g., Knewton, Smart Sparrow)	134	33.5
AI-based Student Engagement Tools (e.g., chatbots)	174	43.5

Table 1 presents the frequency counts and percentages regarding teachers' awareness of AI-enhanced learning tools available for classroom instruction. The data shows that nearly half of the teachers (48.5%) are not familiar at all with AI learning tools, while a smaller portion, 6%, are extremely familiar with these tools. A combined 33.5% of teachers are at least somewhat familiar with AI learning technologies. When asked about specific AI tools, AI-based student engagement tools, such as chatbots, were the most well-known (43.5%), followed by personalized learning platforms (33.5%). Automated grading systems and intelligent tutoring systems had lower awareness levels, with only 17.5% and 14.5% of teachers familiar with them, respectively. This indicates that while some AI tools are gaining traction, there is still limited awareness among a significant portion of teachers.

2. Teachers' preparedness for AI Integration into their teaching practices

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Table 2: Frequency Counts and Percentages of Teachers Responses on their preparedness for AI Integration into their teaching practices

Confidence in Integrating AI Teaching Practice	Frequency (n=400)	Percentages (%)
Not confident at all	58	14.5
Slightly confident	112	28
Somewhat confident	62	15.5
Very confident	116	29
Extremely confident	52	13
Have Technical Skills Required to Implement AI enhanced Tools in Classroom	**Frequency (n=400)**	**Percentages (%)**
Strongly disagree	216	54
Disagree	68	17
Neutral	46	11.5
Agree	64	16
Strongly agree	6	1.5

Table 2 shows the frequency counts and percentages of teachers' responses on their preparedness for AI integration into their teaching practices. In terms of confidence in integrating AI, 29% of teachers reported being very confident, and 13% felt extremely confident, while a significant portion 28% slightly confident and 14.5% not confident at all expressed uncertainty. Regarding technical skills, more than half of the teachers (54% strongly disagree and 17% disagree) indicated that they lack the technical skills necessary to implement AI tools in the classroom, with only 1.5% strongly agreeing that they have the required skills. This highlights a gap between teacher confidence and the technical skills needed for AI integration, emphasizing the need for professional development and training.

3. Challenges of adopting AI-enhanced learning tools

Table 3: Frequency Count and Percentages of Teachers' Responses on Challenges of adopting AI-enhanced learning tools

Challenges in AI Adoption	Frequency (n=200)	Percentages (%)
Lack of technical support	118	29.5
Insufficient training	400	100
Resistance to change	178	44.5
High costs of AI tools	344	86
Lack of infrastructure (e.g., computers, reliable internet)	392	98
Limited understanding of AI's benefits	334	83.5

Table 3 presents the frequency counts and percentages of teachers' responses regarding the challenges they face in adopting AI-enhanced learning strategy. The most commonly cited challenge is insufficient training, reported by 100% of the respondents. Lack of infrastructure, such as computers and reliable internet, is also a significant barrier, affecting 98% of teachers. Additionally, high costs of AI tools are a challenge for 86% of the respondents, and limited understanding of AI's benefits affects 83.5%. Resistance to change was reported by 44.5% of teachers, while 29.5% identified a lack of technical support as an issue. These findings highlight the widespread barriers to AI adoption, with training, infrastructure, and cost being the most critical factors.

4. Teachers' Opinions on Blending AI with Conventional Methods

Table 4: Frequency Count and Percentages of Teachers' Opinions on Blending AI with Conventional Methods

Blending AI with conventional teaching methods is in improving student learning outcomes	**Frequency (n=200)**	**Percentages (%)**
Not effective at all	18	4.5
Slightly effective	46	11.5
Somewhat effective	112	28
Very effective	134	33.5
Extremely effective	90	22.5
Believe that AI-enhanced learning should supplement or replace certain aspects of conventional teaching	**Frequency (n=200)**	**Percentages (%)**
Strongly believe AI should supplement	90	22.5
Somewhat believe AI should supplement	62	15.5
Neutral	4	1
Somewhat believe AI should replace	156	39
Strongly believe AI should replace	88	22

Table 4 provides insights into teachers' opinions on blending AI with conventional teaching methods. Regarding the effectiveness of AI in improving student learning outcomes, a majority of teachers (33.5%) view the integration as very effective, while 22.5% consider it extremely effective. A significant portion (28%) finds it somewhat effective, and only a small minority (4.5%) believe it is not effective at all. In terms of whether AI should supplement or replace conventional teaching methods, 39% of teachers somewhat believe AI should replace certain aspects of traditional teaching, while 22% strongly believe it should replace. On the other hand, 22.5% strongly believe AI should supplement traditional teaching methods, with 15.5% somewhat supporting supplementation. Only 1% of respondents were neutral on this issue. These findings suggest strong support for the role of AI in enhancing or potentially replacing some conventional teaching practices.

Testing of Hypothesis

Hypothesis 1: There is no significant difference in the performance of student expose to the, conventional methods, AI-enhanced learning tools and hybrid educational model

Table 5: ANOVA Analysis of the significant difference in the performance of student expose to the, conventional methods, AI-enhanced learning tools and hybrid educational model

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4747.680	2	2373.840	81.967	.000
Within Groups	4257.280	147	28.961		
Total	9004.960	149			

Table 5 presents the results of an ANOVA analysis examining the significant difference in the performance of students exposed to conventional methods, AI-enhanced learning tools, and a hybrid educational model. The between-groups sum of squares is 4747.680, with a mean square of 2373.840, and the within-groups sum of squares is 4257.280 with a mean square of 28.961. The F-value of 81.967 is highly significant ($p < .001$), indicating a statistically significant difference in student performance across the three instructional approaches. This suggests that the type of teaching method whether conventional, AI-enhanced, or hybrid has a notable impact on students' academic outcomes. There is need to conduct Post-hoc analysis to determine which of the methods is having the most effect.

Table 6: Multiple Comparisons

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(I) GROUP	(J) GROUP	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper **Bound**
CONVENTIONAL	AI ENHANCED	-5.40000*	1.07631	.000	-8.0616	-2.7384
	HYBRID MODEL	-13.68000*	1.07631	.000	-16.3416	-11.0184
AI ENHANCED	CONVENTIONAL	5.40000*	1.07631	.000	2.7384	8.0616
	HYBRID MODEL	-8.28000*	1.07631	.000	-10.9416	-5.6184
HYBRID MODEL	CONVENTIONAL	13.68000*	1.07631	.000	11.0184	16.3416
	AI ENHANCED	8.28000*	1.07631	.000	5.6184	10.9416

*. The mean difference is significant at the 0.05 level.

Table 6 presents the results of a multiple comparison test that reveals significant differences in student performance across three teaching methods: conventional, AI-enhanced, and hybrid models. The mean difference between the conventional and AI-enhanced methods is -5.40, indicating that students using AI-enhanced tools performed significantly better than those in conventional classrooms ($p < 0.001$). Additionally, students exposed to the hybrid model outperformed those using the conventional method, with a notable mean difference of -13.68 ($p < 0.001$). When comparing the AI-enhanced group to the hybrid model, the hybrid model exhibited a significant advantage, with a mean difference of -8.28 ($p < 0.001$), suggesting that the hybrid model is the most effective method in enhancing student performance across subjects.

The finding of the study reveals that while AI tools are increasingly being adopted within educational systems, a significant portion of teachers remain unaware or have limited understanding of these technologies. This implies that a growing divide between those integrating AI into their teaching practices and those who are either unaware or unprepared to do so. This is corroborated by Zawacki-Richter et al. (2019) who stated in a global study that although the potential of AI in education is well-documented, many teachers lack the necessary knowledge and training to effectively utilize these tools. Their study emphasized that AI awareness among teachers is often low due to insufficient professional development programs and training opportunities focused on emerging technologies. Similarly, Holmes et al. (2021) pointed out that AI tools such as personalized learning platforms and automated grading systems are gradually being implemented, especially in higher education. However, many teachers in primary and secondary schools remain unfamiliar with how to leverage AI tools to improve instruction and student outcomes. In addition, Selwyn (2020) noted that many teachers are hesitant to adopt AI tools due to concerns about data privacy, the lack of clear guidelines, and the perceived complexity of these technologies. Furthermore, Luckin et al. (2020) emphasised that teachers' knowledge and confidence in using AI tools depend significantly on the availability of continuous professional development. Their research showed that schools with robust training programs on AI integration tend to have higher adoption rates, while those without such support see limited use of these technologies.

The study reveals a significant gap between teacher confidence and the technical skills required for effective AI integration in education. While some teachers recognize the potential of AI to enhance teaching and learning, many lack the necessary skills to effectively incorporate these tools into their practice. This creates a disparity where teachers are aware of AI's benefits but are unable to confidently apply them due to insufficient training or unfamiliarity with the technology. This gap between teacher confidence and the technical skills needed for AI integration has been corroborated by several studies. Luckin et al. (2020) found that although teachers generally understand the importance of AI and digital tools in education, many lack the confidence to utilize these technologies effectively. The rapid development of AI has outpaced the professional development opportunities

available to teachers, leaving them unprepared for full integration into their classrooms. Similarly, Holmes et al. (2021) highlighted that teachers face barriers such as inadequate technical support and limited access to training, which hampers their ability to fully harness AI's potential. Further corroborating these findings, Zawacki-Richter et al. (2019) emphasized that technical skills, particularly in using AI-driven tools, are crucial for teacher confidence. Their global study revealed that teachers with more training in AI tools felt significantly more confident in integrating them into their teaching, while those lacking technical expertise often felt overwhelmed and avoided using these technologies altogether. Selwyn (2020) also stressed the importance of continuous professional development to bridge this gap. He argued that without structured training programs to build both knowledge and confidence, the disparity between teacher expectations of AI and their ability to use these tools effectively would persist.

The finding of the study reveals widespread barriers to AI adoption in education, with training, infrastructure, and cost identified as the most critical factors. Many teachers express enthusiasm for integrating AI into their teaching; however, they encounter significant challenges that hinder this process. A lack of adequate training is frequently cited as a primary barrier to AI adoption. Luckin et al. (2016) found that teachers often feel unprepared to use AI tools due to insufficient professional development opportunities. Their research emphasizes that effective training programs are essential to equip teachers with the necessary skills and confidence to integrate AI into their teaching practices. Infrastructure also plays a crucial role in AI adoption. Holmes et al. (2021) highlighted that many educational institutions lack the technological infrastructure required to support AI integration, such as reliable internet access and appropriate hardware. This deficiency prevents teachers from fully utilizing AI tools, further exacerbating the gap between potential and practice. Cost is another significant barrier, as implementing AI tools often requires substantial financial investment. Zawacki-Richter et al. (2019) pointed out that budget constraints can limit schools' ability to acquire the necessary technologies and provide adequate training. As a result, many teachers may be reluctant to adopt AI solutions without assurance of adequate funding and resources. Selwyn (2020) stated the need for comprehensive support systems that address these barriers, arguing that without addressing training, infrastructure, and cost issues, the potential benefits of AI in education will remain largely untapped. Effective strategies must include not only investment in technology but also ongoing professional development and infrastructure. These findings suggest strong support for the role of AI in enhancing or potentially replacing some conventional teaching practices.

The finding of the study reveals that there is a strong support for the role of AI in enhancing or potentially replacing some conventional teaching practices. This aligns with various recent studies that explore the transformative impact of AI on education. For instance, a study by Luckin et al. (2016) emphasizes that AI technologies can provide personalized learning experiences, adapting to individual student needs and thereby improving engagement and academic performance. Similarly, research by HolonIQ (2021) stated that AI-driven tools can streamline administrative tasks, allowing teachers to focus more on instruction and student interaction, which can enhance the overall learning environment. Moreover, a meta-analysis by Chen et al. (2021) found that integrating AI in classrooms leads to improved student outcomes, particularly in subjects that benefit from adaptive learning technologies. This suggests that the potential for AI to replace certain conventional practices is not just theoretical but backed by empirical evidence. Furthermore, a report by the World Economic Forum (2020) found that AI can assist in real-time feedback for students, which traditional methods may lack. This capability not only enhances learning but also allows teachers to adjust their instructional strategies based on immediate student responses.

It was revealed in the findings that hybrid model is the most effective method in enhancing student performance across subjects. The hybrid model, which combines conventional face-to-face instruction with online learning components, has shown significant benefits in various across subjects. For example, a study by Vo et al. (2017) found that hybrid learning environments facilitate personalized learning, allowing students to

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engage with materials at their own pace while still benefiting from direct interaction with instructors. This approach caters to diverse learning styles and needs, ultimately leading to improved academic outcomes. Additionally, research by Graham (2013) emphasizes that hybrid models can increase student motivation and engagement by providing varied instructional methods. The flexibility of accessing content online encourages students to take ownership of their learning, which is linked to higher performance levels. Moreover, a meta-analysis by Bernard et al. (2004) concluded that hybrid learning tends to produce better learning outcomes compared to purely online or traditional formats. The study highlighted that the integration of technology in a supportive environment fosters a deeper understanding of the material. Furthermore, the study by Yeigh et al (2020) indicates that hybrid models can enhance collaboration among students, as online platforms often facilitate group work and peer interaction, which are crucial for skill development and knowledge retention

6. CONCLUSION

Despite the strong potential of AI tools to enhance teaching and learning outcomes, many teachers face challenges stemming from limited knowledge, inadequate training, and insufficient technological infrastructure. There is a pressing need for comprehensive professional development programs to equip teachers with the necessary skills and confidence to leverage AI effectively in their classrooms. Hybrid learning environments not only cater for diverse student needs but also promote greater engagement and collaboration among learners. Addressing the barriers of training, infrastructure, and cost is essential for realizing the full benefits of AI and hybrid models in education. By investing in technology and teacher development, educational institutions can better prepare teachers to embrace these innovations, ultimately leading to improved student performance and more dynamic learning experiences

Recommendations

Based on the findings of the study, the following recommendations were made:

1. There should be the implementation of ongoing training programs focused on AI and hybrid learning to equip teachers with the skills and knowledge needed for effective integration.

2. The government and private organisations should invest in the necessary technological infrastructure, including reliable internet access and updated hardware, to support AI and hybrid learning initiatives in schools

3. The ministry of education should establish pilot programs for teachers to experiment with AI tools, fostering collaboration and sharing of best practices among teachers.

4. The government should develop clear guidelines to address concerns about data privacy and the complexity of AI tools, creating a supportive environment that encourages innovation..

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