

TEACHER COMPETENCY DEVELOPMENT FOR ARTIFICIAL INTELLIGENT (AI) LITERACY AND CLASSROOM WORKFLOW INTEGRATION IN RIVERS STATE

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Abstract

This study looked at how teachers in Rivers State are developing the skills they need to use AI in their teaching. It focused on three areas: their understanding of Artificial Intelligent (AI), their ability to use AI to improve classroom teaching, and the support they receive through training and school systems. The study used interviews and focus group discussions with teachers from public schools. The findings showed that many teachers still had limited knowledge of AI, but they were eager to learn how it could make lesson delivery, assessment, and classroom management easier. It also became clear that teachers were more likely to use AI when they felt confident, had some prior exposure, and saw the tools as useful. However, limited training, poor infrastructure, and weak institutional support slowed progress. The study concluded that effective AI use in classrooms depends on ongoing training, supportive school leadership, and better access to digital tools.

Keywords: *Teacher Competency, Development, AI Literacy, Classroom Workflow.*

Introduction

Artificial intelligence, or AI, is gradually changing the way teaching and learning happen in schools. Teachers are now expected to do more than prepare lessons and deliver content; they are also expected to work with digital tools that can help with lesson planning, classroom interaction, assessment, feedback, and even some administrative tasks. As AI becomes more present in education, teachers need to understand it well to be able to use it wisely, responsibly, and in ways that truly support learning. Because of this, AI literacy has become an important part of what it means to be a competent teacher today. Scholars have increasingly argued that effective AI integration in education depends on teachers' knowledge, confidence,

and readiness to adapt their practice to new digital realities (Wang, Li, Tan, Yang, & Lei, 2023; Kolhatin, 2025).

AI literacy means more than simply knowing that AI exists. It involves understanding how AI works, what it can do, where its limits are, and how it can be used in a thoughtful and ethical way. Recent studies have shown that teachers' AI literacy includes both understanding the ideas behind AI and knowing how to apply it in real teaching situations (Olari & Romeike, 2021; Filo, Rabin, & Mor, 2024). In other words, AI literacy is not just a technical skill; it is a professional ability that can shape how teachers make decisions in the classroom, how well they teach, and how independently they can work. When teachers do not have this kind of literacy, AI may seem confusing or distant instead of becoming a useful part of teaching practice (Wang et al., 2023).

Another important issue is teachers' ability to adjust their classroom teaching when using AI tools.

Teaching involves many daily activities, such as planning lessons, explaining topics, keeping students engaged, checking understanding, giving feedback, and managing the class. AI can support these tasks, but only when teachers know how to use it properly. This does not happen by chance. Teachers must be able to connect AI tools to their lesson goals, classroom context, and the needs of their learners. Research has shown that readiness for AI-enhanced education depends on knowledge, practical ability, vision, and ethical judgment, all of which influence how teachers respond to new technologies in real classrooms (Filo et al., 2024). When these qualities are weak, teachers may be interested in AI but still struggle to use it well in their daily teaching.

Confidence also matters a great deal in whether teachers adopt AI. Teachers are more likely to use AI when they feel capable, have had some previous exposure to it, and believe it can actually help them teach better. On the other hand, fear, uncertainty, and lack of experience can make them hesitate to try new tools. Studies have shown that AI readiness is influenced not only by technical skill but also by attitude, fear of technology, and unequal access to digital resources (Deshen, Harari, & Aharony, 2026; Wang et al., 2023). This shows that helping teachers become competent in AI is not only about teaching them skills; it is also about helping them build confidence

and a positive mindset. Teachers need chances to learn, practice, and reflect before they can move from awareness to real classroom use.

Institutional support is also very important. Even when teachers are willing to learn, they may still struggle if their schools do not provide enough support. Poor infrastructure, lack of internet access, shortage of devices, weak leadership, and unclear school policies can all make AI use difficult. Recent research has shown that strong institutional support, including leadership commitment, clear policies, and access to technology, is needed if AI is to become part of everyday teaching practice (Rothinam, Vengrasalam, Jabamoney, Naidu, Gill, & Foong, 2025). Schools are not just physical places where teaching happens; they either make innovation possible or make it difficult depending on the kind of support they offer. When support is weak, AI adoption becomes slow, uneven, and frustrating for teachers.

In Rivers State, these issues are especially important because teachers in public and private schools may not have the same level of access to training, technology, or encouragement from their schools. Some teachers may already have a little understanding of AI through personal interest or informal exposure, while others may know very little about how it can be used in education. Differences in school culture, administrative support, and digital infrastructure can strongly affect how teachers respond to AI innovation. A Qualitative study is therefore very suitable, because it allows the researcher to hear teachers' voices directly and understand their experiences, challenges, and suggestions in depth (Kohout-Diaz, 2026). A qualitative approach is especially useful for understanding the human side of AI integration. It helps reveal how teachers talk about their competence, what they hope or fear about AI, how they handle classroom demands, and how their schools influence the way they use technology. This matters because success in AI education does not depend only on having tools; it also depends on how teachers think about the tools, how confident they feel, and how they manage the realities of school life. Studies have shown that professional identity, school environment, and readiness for innovation all shape how teachers respond to AI in teaching and learning (Carvalho, Santos, Coelho, & Ledesma, 2025). For this reason, a study focused on Rivers State can add useful local knowledge to the wider discussion about AI literacy and teacher development.

This paper, therefore looks at teacher competency development for AI literacy and classroom workflow integration in Rivers State. It focuses on teachers' understanding of AI, their ability to use AI to improve classroom teaching, and the training and institutional support they receive for AI integration. By exploring these issues qualitatively, the study aims to show how teachers experience AI in practice and what needs to happen to improve their readiness for responsible and effective classroom use. The findings are expected to support teacher development, school leadership, and policy efforts aimed at strengthening AI literacy among teachers in Nigeria's education system at large (Kolhatin, 2025; Rothinam et al., 2025).

Teachers' Understanding and Practical Use of AI

Artificial intelligence has quickly moved from being a technical idea for specialists to something teachers now encounter in everyday educational work. Teachers are increasingly expected to understand what AI can do, what its limits are, and how it can genuinely support teaching and learning. This is not just about knowing the meaning of AI; it is also about being able to use AI tools carefully, wisely, and effectively in real classroom situations. Scholars such as Filo et al. 2024, Wang et al. 2023, Olari & Romeike (2021), all show that teacher competence in the age of AI must combine understanding, judgment, and practical use.

Understanding AI starts with a simple but important question: what should a teacher actually know? For many teachers, AI is first noticed through tools that can generate text, summarize information, spot patterns, or suggest answers. But real understanding goes deeper than simply knowing these tools exist. It means understanding how AI creates its responses, where the information comes from, and why the output can sometimes be biased, incomplete, or even wrong. Filo et al. (2024) argue that teacher and student AI competency should include identification of AI mechanisms, effective and informed use, AI agency, and ethical use. That framework is useful because it shows that AI literacy is not passive awareness; it is active comprehension. A teacher who understands AI is better positioned to use it as a tool rather than treat it as a mysterious authority.

A deeper understanding of AI also includes awareness of its data foundations. Olari and Romeike (2021) stress that AI literacy and data literacy are closely linked because AI systems depend on data, and data

shapes the behaviour of those systems. In practical terms, this means teachers need to know that AI does not “think” in the human sense; instead, it processes patterns in data and generates outputs based on that processing. This matters because teachers who understand the relationship between data and AI are less likely to over-trust the technology. They are more likely to ask questions such as whether an AI-generated explanation is suitable for learners, whether the language is accurate, and whether the response reflects hidden bias. Such understanding protects both teaching quality and learner trust.

Teachers’ understanding of AI is also influenced by how useful they believe it is in their work.

Wang et al. (2023) found that teachers’ readiness for AI-enhanced education is influenced by cognition, ability, vision, and ethics. This suggests that understanding AI is not only about technical knowledge but also about mental readiness. A teacher may know what AI means and still feel unsure that it has a place in education. Another teacher may start with very little knowledge, but after seeing practical examples, begin to understand how AI can make lesson preparation, organizing, information, or giving feedback easier. In many cases, understanding AI and seeing its value develop side by side. The more teachers see useful examples, the more their understanding connects to real classroom work.

Practical use comes after understanding, but it does not happen automatically. A teacher may understand AI and still use it in only a limited or surface-level way. Real practical use means applying AI to teaching tasks with clear purpose and control. This could involve generating examples, checking grammar, drafting questions, organizing content, or helping with administrative work. Filo et al. (2024) emphasize “effective and informed use” as a core part of AI competency. That phrase matters because it distinguishes between casual use and skilled use. Informed use means the teacher knows why a tool is being used, how to review its output, and when human judgment must override the machine’s suggestion. Practical use of AI also depends on the teacher’s ability to recognize the strengths and weaknesses of the tool. AI can save time, improve efficiency, and help teachers work more productively, but it can also produce errors, repetition, or content that does not fit the learning context. Deshen et al. (2026) point to the importance of teachers developing a realistic

understanding of AI's limitations as well as its benefits. This is especially important because some teachers may either reject AI entirely or use it uncritically. Both extremes can be problematic. Balanced practical use means the teacher remains the final decision-maker, using AI as support while preserving professional responsibility.

The growing interest in AI has also made the ethical side of its use more important. Teachers are not just using a tool; they are shaping the learning experiences of real students. Because of that, they need to think carefully about fairness, privacy, originality, and accuracy. Filo et al. (2024) explicitly include ethical use as one of the major components of AI competency. Ethical use is important because AI-generated content may blur the line between human and machine authorship, and it may also expose learners to overreliance on machine answers. A teacher who understands and uses AI responsibly will therefore check AI output carefully, avoid presenting machine-generated text as unquestionable truth, and protect learners from misuse. Ethics is not an add-on; it is central to practical use. Another important aspect of teacher understanding is the emotional and psychological response to AI. Some teachers are curious and excited, while others feel cautious, sceptical, or even threatened by it. Wang et al. (2023) show that perceived threats and AI readiness are connected. This is significant because fear can reduce use, even when knowledge is present. A teacher may understand how AI works but still avoid it because of concerns about job security, student misuse, or personal inadequacy. That is why understanding AI must also include confidence-building. Teachers need to feel that AI is a manageable tool, not an intimidating force. Practical use becomes more likely when teachers feel calm, informed, and in control.

The literature also suggests that teacher understanding of AI is shaped by the wider professional culture around them. Kolhatin (2025) argues that AI literacy in teacher education should move beyond simple exposure and help teachers develop deeper interpretive ability. This is important because teachers often learn best when new ideas are connected to their own classroom realities. A teacher who sees AI used in subject-specific examples is more likely to understand its relevance. Likewise, Carvalho et al. (2025) and Kohout-Diaz (2026) both reinforce the need for teachers to develop usable, contextualized AI understanding rather than abstract

awareness. Their work supports the view that understanding AI should be practical, not merely theoretical.

Practical use also becomes more meaningful when teachers reflect on their own workflow. AI can be useful in reducing routine workload, supporting content generation, and helping teachers search, summarize, and organize information. But the teacher's role is still very important because a classroom is not just a technical space; it is a human one. Teachers have to decide which AI-generated ideas are helpful, which ones need to be corrected, and which ones should be left out completely. Making those decisions depends on the teacher's understanding and judgment. Rothinam et al. (2025) show in their review that teachers often display curiosity and optimism but still lack comprehensive AI literacy. This finding is important because it suggests that practical use may begin with enthusiasm, but it only becomes sustainable when knowledge catches up with interest.

In everyday classroom life, teachers who understand AI well often find ways to use it more creatively and efficiently. They may use it to draft examples, compare explanations, or prepare early lesson materials before improving them on their own. This does not mean they are leaving teaching to the machine. Rather, they are using the tool to strengthen their own professional work. That kind of use shows initiative and control, not dependence. Filo et al. (2024) capture this idea through the concept of AI agency, which involves proactive and value-generating use of AI. The teacher who demonstrates agency is not just reacting to technology; the teacher is choosing how technology fits the lesson and when it is appropriate to rely on human expertise.

Still, practical AI use also requires caution. Teachers must avoid becoming overly dependent on AI-generated material, especially when it is used without scrutiny. If a teacher copies and pastes AI content without checking its quality, the result may be weak instruction or misinformation. Olari and Romeike (2021) remind us that AI should be understood together with its data foundations so that users can interpret outputs critically. This matters in teaching because not every answer generated by AI is pedagogically suitable. A teacher's professional judgment remains necessary to make sure the language, examples, and explanations are appropriate for the age, ability, and background of the learners.

Teachers' understanding and practical use of AI really go hand in hand. If a teacher understands AI but never applies it, that knowledge may stay abstract and disconnected from real classroom work. On the other hand, using AI without really understanding it can lead to careless or superficial practice. The best situation is when teachers understand AI well enough to question it, use it with a clear purpose, and judge its results with confidence. Wang et al. (2023), Filo et al. (2024), and Olari & Romeike (2021) all support this view by showing that AI literacy is multidimensional and rooted in cognition, ethics, and practical skill. Their work provides a strong foundation for studying how teachers engage with AI in real educational settings.

Teachers' understanding and practical use of AI should be seen as skills that grow over time. It is not something a teacher either has completely or does not have at all. Instead, it develops gradually through exposure, reflection, practice, and careful evaluation. Scholars such as Daher (2025), Kohout-Diaz (2026), and Deshen et al. (2026) reinforce the need for teachers to grow into AI use in ways that are thoughtful, ethical, and professionally grounded. In this sense, AI in education is not only about machines; it is about how teachers interpret, shape, and control the role of machines in human learning. That is why teacher understanding remains at the centre of responsible AI use in schools.

Teachers' ability to adapt Classroom Teaching with AI

Teachers' ability to adapt classroom teaching with AI is increasingly becoming one of the clearest signs of professional flexibility in today's schools. It is not simply about using a digital tool, but about reshaping lessons, activities, feedback, and assessment in ways that fit AI-supported learning. In practice, this means teachers have to decide when AI can improve instruction, when it should be used cautiously, and when it should be left out altogether. Studies in different contexts show that this kind of adaptation is shaped by teachers' beliefs, classroom realities, subject demands, and ethical concerns (Alexandrowicz, 2024).

Classroom adaptation with AI

Teachers adapt classroom teaching with AI when they use it to make everyday instructional work a little easier and more responsive to learners. For example, they may ask AI to suggest examples, simplify a topic, or create

different versions of the same task so that students can work at levels that suit them. In that sense, AI becomes a helpful support for planning and teaching, rather than something separate from the classroom. Research by Alexandrowicz (2024) shows that AI tools can help teachers brainstorm lesson plans, create or adapt learning materials, and gather useful resources for classroom use. In a similar way, Tripathi, Sharma, Singh, Bhargava, and Raj (2025) found that teachers use AI to streamline lesson planning, content creation, and some classroom management tasks while still trying to maintain professional judgment. These findings suggest that adaptation is less about replacing teaching and more about improving how teaching is organized and delivered.

Teachers often adapt in gradual steps rather than through sudden change. At first, they may use AI for small tasks such as preparing examples, summarizing reading materials, or drafting questions. As their confidence grows, they may begin to use AI more deliberately to support lesson flow, student engagement, and feedback processes. This gradual movement is important because many teachers are not trying to surrender their role to technology; they are simply looking for better ways to teach with the tools available to them. A study of teachers across eTwinning countries found that AI is helping educators with lesson planning, assessment, and cross-cultural collaboration, but that this support is strongest when teachers feel able to guide the technology rather than follow it blindly (Doger & Gocen 2025).

Pedagogical judgment

One of the most important parts of adaptation is good teaching judgment. Teachers have to decide whether an AI-generated idea truly matches the lesson goal, the learners' age, and the subject being taught. AI may be quick, but being quick does not always mean it is the right fit.

Tripathi et al. (2025) reported that teachers worry about student overdependence, loss of critical thinking, and weak ethical use when AI is introduced without careful supervision. This means that effective adaptation is not only about convenience; it is also about maintaining the quality of learning. Pedagogical judgment is what helps teachers keep AI use aligned with good teaching. A teacher might use AI to draft an activity, but that draft still needs to be reviewed, simplified, or expanded so it truly

fits the class. In the same way, if AI suggests an assessment item, the teacher still has to check whether it matches the curriculum and really measures the intended learning outcome. Research from Portugal and other European settings shows that teachers value AI most when it supports their professional thinking rather than replacing it. In this way, adaptation becomes a professional act, not a mechanical one (Carvalho et al. 2025).

Subject-specific use

Teachers' ability to adapt with AI also depends on the subject they teach. Some subjects may lend themselves more easily to AI-supported tasks than others. For example, language teachers may use AI for drafting texts, generating comprehension questions, or supporting vocabulary development, while science teachers may use it to prepare examples, explain concepts, or organize inquiry tasks. Alexandrowicz (2024) shows that AI can assist teachers in adapting materials and resources to learning goals across teaching contexts. This flexibility is one reason many teachers are beginning to experiment with AI in practical ways.

Subject adaptation needs careful thought. What works well in one subject may not be suitable for another, so teachers still have to check whether the AI output is accurate and useful for their own area of teaching. In many cases, they may need to revise most of the material before using it in class. What matters most is that the teacher stays in charge of the final decision. Study such as Tripathi et al. (2025) and the qualitative work on teachers' AI use in multiple countries highlight that successful adaptation depends on how well teachers connect AI to the demands of their subject and their learners.

Classroom workflow

Another important part of adaptation is how AI fits into the rhythm of everyday classroom work. Teaching is not just about delivering content; it also involves planning lessons, setting tasks, checking understanding, marking work, and keeping records. AI can make some of these duties easier by helping teachers prepare materials faster and organize information more efficiently. Research indicates that teachers see value in AI when it reduces routine pressure and gives them more time to focus on meaningful classroom interaction. In this sense, AI can serve as a practical assistant in the classroom workflow (Alexandrowicz, 2024).

But this kind of improvement only helps when it makes teaching easier, not harder. If AI tools are confusing, unreliable, or take too much time to use, they can end up creating more stress than support. That is why adapting to AI is not just about bringing in new technology; it is about making the technology fit the teacher's own way of working. Studies by Tripathi et al. (2025) suggest that teachers appreciate AI most when it helps them maintain control over classroom processes while making those processes smoother and more efficient. That balance between convenience and control is central to classroom adaptation.

Critical concerns

Teachers also adapt to AI by taking the concerns it raises seriously. Many worry about privacy, bias, overdependence, and the chance that students may use AI without thinking for themselves. These concerns do not mean teachers are resisting change; they show that they are trying to use AI responsibly. The study by Tripathi (2025) found that teachers do not simply embrace AI uncritically; they think carefully about its risks as well as its benefits. This makes their role more complex, but also more important.

In the same vein, the European cross-country study by Carvalho et al. (2025) notes that teachers appreciate the efficiency of AI but remain cautious about bias, privacy, and digital divide issues. Their findings show that adaptation is not a smooth or purely positive process. Teachers often move forward while still holding concerns in mind. That balance is healthy because it encourages thoughtful use instead of blind enthusiasm. A teacher who adapts well to AI is not necessarily the one who uses it the most, but the one who uses it wisely.

Professional Identity

Adapting classroom teaching with AI also changes how teachers see their role. Many teachers still want to remain the main guide in the classroom, even when they are using digital tools. They may appreciate AI support, but they do not want to lose the judgment, creativity, and authority that come with teaching. Because of that, adapting to AI is closely tied to a teacher's professional identity. Research on AI integration in teacher education has shown that teachers negotiate between innovation and professional responsibility as they incorporate AI into their practice. The question is not

just whether AI works, but whether it strengthens or weakens the teacher's sense of control and purpose (Carvalho et al. 2025)

When teachers feel that AI supports their professional role, they are usually more open to using it in positive ways. But when it feels like AI might weaken their role, they may choose to use it carefully or only in limited ways. That is why adaptation should be seen as a human process, not just a technical one. Teachers are active professionals trying to protect quality, identity, and responsibility while working with new tools. The findings of Tripathi et al. (2025) and the broader review by Alexandrowicz (2024) both suggest that adaptation works best when teachers are treated as thoughtful decision-makers rather than as simple technology users.

Teachers' Access to Training and Institutional support for AI Integration

Teachers' access to training and institutional support for AI integration in Nigeria is becoming an important issue because AI is moving into education faster than many school systems can respond. In many Nigerian schools, teachers are expected to engage with digital tools, yet the level of preparation available to them is uneven. Some teachers have begun to receive exposure through government programs, donor-led workshops, university initiatives, and professional development sessions, but others still work in environments where access to sustained training is limited (UNESCO, 2026). Recent Nigerian discussions on AI in teacher education repeatedly point to gaps in digital infrastructure, teacher preparation, and policy coordination as major barriers to meaningful integration (Agwom, Felix & Oluseye, 2025).

The Nigerian training landscape

In Nigeria, teacher training on AI is still developing, but it is gaining attention at both policy and institutional levels. A 2025 report noted that the Federal Government launched AI training for thousands of senior secondary school teachers as part of a broader push to improve digital literacy and classroom innovation (Managing Nigeria, 2025). Another national-level initiative highlighted by UNESCO described "Naija teacher AI," a program designed to equip licensed teachers with AI-powered tools and digital training across the country. These initiatives suggest that Nigeria is beginning to treat AI literacy as part of teacher development rather than

as an optional extra. Still, the scale of these efforts remains small compared with the size of the teaching population and the diversity of school contexts (UNESCO, 2026).

The challenge is that many teachers need more than a one-time workshop. They need repeated, practical, and classroom-connected learning that helps them build confidence over time. Evidence from Nigerian teacher education literature suggests that while AI can improve assessment, learner support, and professional learning, progress is slowed by weak infrastructure, limited trainer capacity, low funding, and resistance to innovation. This means that training must be treated as a process, not an event. When teachers are only introduced to AI briefly and without follow-up, they may remain curious but unable to use the tools meaningfully in school practice (Ekwevugbe, 2025).

Institutional support in Nigeria

Institutional support is just as important as training because teachers cannot implement AI in isolation. Many Nigerian schools still face problems such as unstable internet access, insufficient devices, limited technical support, and weak digital policy structures. A Nigerian study on teacher education and AI reported that poor digital infrastructure and insufficient AI literacy among teacher trainers constrained implementation in vocational and technical education settings. Another local review also emphasized low funding and resistance to innovation as recurring obstacles in teacher education reform. These findings show that even when teachers are willing to learn, the school environment may not be ready to support them (Agwom et al., 2025).

Support also has a leadership dimension. School leaders need to create conditions in which teachers can experiment, share ideas, and make mistakes safely while learning new tools. Without that kind of support, teachers may view AI as an added burden rather than a useful professional resource. Nigerian policy conversations increasingly recognize this issue, especially through calls for digital learning laboratories, AI pedagogy in teacher education programs, and better coordination between schools and training providers. In other words, the institutional side of AI integration is not just about equipment; it is also about leadership, culture, and long-term planning ((NCCE, 2026).

National Policy direction

Nigeria's policy direction suggests growing awareness that teacher preparation must keep pace with technological change. The National Senior Secondary Education Commission has been linked to efforts that introduce AI training into the broader reform of senior secondary education. There are also calls for AI to be included in teacher education curricula, especially in NCE and PDE programs, so that future teachers enter the profession with some grounding in AI-related practice. This is important because teacher training institutions shape what teachers see as normal, possible, and professional in the classroom. If AI is absent from those programs, many teachers will only encounter it later, when they are already expected to use it (Managing Nigeria, 2025). At the same time, Nigerian discussions show that policy alone is not enough. The existence of national frameworks does not automatically ensure access at the school level. Teachers in urban, better-resourced schools may benefit first, while those in rural or underfunded settings may be left behind. That gap is one of the main concerns in Nigeria's move toward AI integration. For that reason, support must be equitable, not only ambitious. A realistic policy approach would combine national planning with local implementation support, so that teachers across different school types can benefit (BBYDI, 2025).

Global lessons

Globally, research shows that teacher training and institutional support are central to successful AI integration, not optional extras. Tripathi et al. (2025) found that teachers engage with AI more meaningfully when they can balance its efficiency with professional judgment and classroom responsibility. This implies that training should not only explain how AI works; it should also help teachers evaluate how it fits teaching values, student needs, and classroom realities. Similarly, Alexandrowicz (2024) shows that AI can help teachers brainstorm lessons, adapt learning materials, and gather resources, but its usefulness depends on whether teachers have the support to use it well. These global findings matter for Nigeria because they show that effective use of AI depends on both competence and context.

Conclusion

The study shows that using artificial intelligence well in teaching is about much more than the technology itself. Teachers need practical skills,

regular exposure, and a school environment that supports learning, trying new things, and growing over time. When teachers get the right support, AI can make planning, assessment, feedback, and classroom organization easier and more effective. But when training is weak and schools do not provide enough support, progress tends to be slow and uneven. The findings also show that AI should be introduced gradually, not treated as something that can be fully adopted at once. For AI to truly help classrooms, teachers, school leaders, and education planners must work together to create conditions that make its use helpful, ethical, and accessible. In the end, successful AI use in education depends on people, policy, and practice working together.

Recommendations

- 1 Schools should provide regular, hands-on AI training that helps teachers build confidence and learn by doing.
- 2 Education authorities should make sure AI skills are included in teacher training programs from the beginning.
- 3 School leaders should create a supportive atmosphere where teachers feel free to try AI tools without fear of making mistakes.
- 4 Government should improve digital facilities in schools, especially in rural communities where access is often limited.
- 5 Teachers should be given enough time and chances to keep learning and to share ideas with one another.
- 6 Policies on AI in education should focus on ethics, safety, and fairness so that no learner or teacher is left out.

References

- Agwom, S. D., Felix, O. F. M., & Oluseye, A. A. (2025). Relationship between Artificial Intelligence (AI) and Teachers' Education Programmes for Sustainable National Development in Vocational and Technical Education in Public Schools of North Central Nigeria. *Kashere Journal of Education*, 9(1), 149–169.
- Alexandrowicz, V. (2024). Artificial Intelligence Integration in Teacher Education. Navigating Benefits, Challenges and Transformative Pedagogy. *Journal of Education and Learning*; 13, No. 6. Published by Canadian Centre of Science and Education.

- Brain Builders Youth Development Initiative. (BBYDI, 2025). *Brain Builders Youth Development Initiative champions AI literacy with nationwide curriculum review*. <https://thebrainbuilders.org/brain-builders-youth-development-initiative-champions-ai-literacy-with-nationwide-curriculum-review/>
- Carvalho, R., Santos, C., Coelho, A., & Ledesma, F. (2025). AI Integration in Pedagogical Practices: A Qualitative Analysis of Teacher Training and Classroom Implementation. *Methodologies and Intelligent Systems for Technology Enhanced Learning, 15th International Conference, MIS4TEL*, pp. 239–250.
- Daher, R. (2025). Integrating AI literacy into teacher education: A critical perspective paper. *Discover Artificial Intelligence*, 5, Article no. 217.
- Deshen, M., Harari, R. & Aharony, N. (2026). Teachers’ artificial intelligence literacy: An exploratory study. *Smart Learning Environments*, Vol. 13, Article 7.
- Doger, M. F. & Gocen, A. (2025). Artificial intelligence (AI) as a new trajectory in education. *The Journal of Educational Research*, Volume 118, Issue 6, pp. 581 – 595.
- Ekwevugbe, A. O. (2025). Use of Artificial Intelligence Technology for Revolutionizing Teaching and Learning Practices in Teacher Education Programmes in Nigeria. *International Journal of Innovative Information Systems & Technology Research*, 13 (4), 33 – 49.
- Filo, Y., Rabin, E., & Mor, Y. (2024). An artificial intelligence competency framework for teachers and students: Co-created with teachers. *European Journal of Open, Distance and E-Learning, EDEN Digital Learning, Europe*.
- Kohout-Diaz, M. (2026). Making sense of AI in teacher education: A qualitative study of perceptions, practices and pedagogical tensions. *Teaching and Teacher Education*, Vol. 171, Article 105342.
- Kolhatin, A. O. (2025). Generative artificial intelligence in teacher training: A narrative scoping review. *CTE Workshop Proceedings*, 12, 1–18.

- Managing Nigeria (2025). *FG rolls out AI training for thousands of teachers to boost digital literacy*. <https://managingnigeria.com/2025/05/03/fg-rolls-out-ai-training-for-thousands-of-teachers-to-boost-digital-literacy/>
- National Commission for Colleges of Education (NCCE, 2026). *NCCE integrates AI, digital skills into teacher training, reviews NCE curriculum*. <https://Primenewz.ng/2026/01/22/ncce-integrates-ai-digital-skills-into-teacher-training-reviews-nce-curriculum/>
- Olari, V., & Romeike, R. (2021). Addressing AI and data literacy in teacher education: A review of existing educational frameworks. *ACM Transactions on Computing Education, WiPSCE '21: Proceedings of the 16th Workshop in Primary and Secondary Computing Education*, Article No.: 17, Pages 1 – 2.
- Rothinam, N., Vengrasalam, R., Jabamoney, S., Naidu, S., Gill, R. G. & Foong, A. L. S. (2025). Systematic Review on Teacher Education and the Integration of Artificial Intelligence. *Journal of Cultural Analysis and SocialChange*,11(1), 401-415.<https://doi.org/10.64753/jcasc.v11i1.3873>
- Tripathi, T., Sharma, S. R., Singh, V., Bhargava, P., & Raj, C. (2025). Teaching and learning with AI: A qualitative study on K-12 teachers' use and engagement with artificial intelligence. *Frontiers in Education*, 10, 1651217. <https://doi.org/10.3389/feduc.2025.1651217>
- United Nations Educational, Scientific and Cultural Organization (UNESCO, 2026). *An AI-powered system transforming teacher capacity at scale*. UNESCO SDG4 Education 2030 Knowledge Hub. <https://www.unesco.org/sdg4education2030/en/knowledge-hub/naija-teacher-ai-ai-powered-system-transforming-teacher-capacity-scale>
- Wang, X., Li, L., Tan, S. C., Yang, L. & Lei, J. (2023). Preparing for AI-enhanced education: Conceptualizing and empirically examining teachers' AI readiness. *Computers in Human Behavior*, 146, 107798. Published by Elsevier.