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Integration of Artificial Intelligence into Technical and Vocational Education and Training (TVET) Programme: Perceptions of Educators in Universities of Plateau State

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Abstract

This study investigated educators' perceptions on issues relating to integrating Artificial Intelligence (AI) into Technical and Vocational Education and Training (TVET) programmes in universities in Plateau State, Nigeria. Specifically, it determined: benefits, challenges of, and strategies for adoption of AI into TVET programmes. A descriptive survey design was adopted. Population was made of lecturers and instructors in Technology education departments across two universities offering TVET programmes in Plateau State. Data were collected using structured questionnaire. Data were analysed using means, standard deviations, and one-way ANOVA at the 0.05 significance level. Findings of the study are 13 benefits ($\overline{X}_g \geq 2.50$) of adopting AI as perceived by the respondents, including, personalization of learning experiences ($\overline{X}_g$ =3.14), and so on; 11 challenges ($\overline{X}_g \geq 2.50$) in adopting AI, including, "limited AI awareness among lecturers ($\overline{X}_g$ = 3.98) and others. Further findings are 10 strategies for enhancing effective AI integration into TVET. There were no significant differences in the mean responses of lecturers, Heads of Department and instructors.

Keywords: Artificial; intelligence; technical; vocational; educator; adoption; strategies

Introduction

Artificial Intelligence (AI) integration into educational systems has become a global necessity, particularly for Technical and Vocational Education and Training (TVET), given the rapidly changing demands of the labour market and the pace of technological advancement (Rabiu et al., 2025). AI is pivotal in fostering personalised learning, predictive assessment, and curriculum alignment with Industry 4.0 standards, and it encompasses techniques such as machine learning, intelligent tutoring, and adaptive analytics that allow instructional systems to approximate aspects of human reasoning and decision-making (Treve, 2024).

Besides TVET specifically, AI is increasingly recognised across education generally as a technology capable of revolutionising pedagogical approaches, personalising learning experiences, and streamlining administrative tasks, even as this promise brings with it significant challenges around accessibility, data privacy, and ethical governance (Eden, *et al* 2024). Within TVET specifically, AI is increasingly explored as a tool for enhancing instructional delivery, personalising learning pathways, streamlining assessment, and aligning

skills training with evolving industry expectations (Rabiu et al., 2025).

Globally, national systems have adopted deliberate strategies for AI-driven skills development: some countries have established specialised colleges and industrial innovation hubs to support AI-related talent development, while others have prioritised industry-government collaboration, lifelong learning, and combined teaching-research career pathways in tertiary education (Rabiu et al., 2025). Evidence from advanced TVET systems shows that AI-supported tools such as intelligent tutoring systems and predictive learning analytics can strengthen competency-based training and narrow the gap between classroom instruction and industry expectation (Treve, 2024). Nonetheless, the volume of empirical research specifically addressing AI in TVET remains considerably smaller than research on AI in general higher education (Rabiu et al., 2025).

Nigeria faces considerable barriers to adopting AI within its TVET landscape despite mounting evidence that AI can help bridge workforce skill gaps, improve employability, and support national development goals (Rabiu et al., 2025). Studies conducted across Nigerian institutions report generally positive attitudes and reasonably high awareness of AI among teachers and TVET-related students (Ayanwale et al., 2022; Joseph et al., 2024), yet this enthusiasm does not consistently translate into classroom-level readiness, largely because of limited digital literacy and the absence of structured, sustained capacity-building programmes for educators (Nja et al., 2023). This pattern is corroborated by an analysis of AI tool utilisation among vocational education lecturers in Nigerian universities, which found that actual classroom deployment of AI tools remains limited despite educators' general awareness of their existence (Eze & Onah, 2024). At the institutional level, unreliable infrastructure, fragmented digital policy, and inadequate professional development continue to constrain how far Nigerian TVET educators can meaningfully adopt AI tools in their teaching (Ahmed et al., 2025; Bolu et al., 2024). Ethical concerns relating to data privacy, algorithmic bias, and the near absence of a coherent national policy on AI in education further complicate the picture, leaving both institutions and learners exposed to inconsistent implementation standards (Omeh et al., 2024; Sanusi et al., 2024).

It is within this broader national picture that the situation of universities in Plateau State becomes especially pertinent. Educators in universities in Plateau State, comprising lecturers, Heads of Department, and instructors engaged in TVET-related programmes, continue to report limited exposure to, and proficiency with, AI-based instructional tools, a pattern broadly consistent with findings on educator AI readiness reported elsewhere on the African continent (Oyelere et al., 2022; Bakare et al., 2023). As the professionals directly responsible for translating policy and technology into classroom practice, the perceptions that these educators hold regarding AI's benefits, risks, and feasibility are central to whether integration succeeds or stalls (Joseph et al., 2024; Sanusi et al., 2024). Yet, despite the expanding body of research on AI in Nigerian education generally, there remains comparatively little empirical attention paid specifically to how educators within universities in Plateau

State perceive the opportunities and constraints of AI adoption in their TVET programmes. This localised gap matters because generalised national findings cannot be assumed to capture the specific infrastructural, institutional, and socio-economic realities peculiar to universities operating within Plateau State. A recent systematic review of AI integration across African higher education similarly cautions that adoption patterns vary considerably by institutional context, underscoring the need for context-specific rather than generalised evidence of the kind this study provides (Falebita & Kok, 2024).

Ideally, AI integration into TVET programmes in universities in Plateau State should mirror the gains recorded in better-resourced systems: educators adequately trained, institutions sufficiently funded, and clear ethical frameworks guiding the responsible use of learner data (Rabiu et al., 2025; Omeh et al., 2024). Under such conditions, AI would support competency-based assessment, adaptive instruction, and administrative efficiency, freeing educators to focus on higher-order pedagogical functions while equipping graduates with the digital competencies demanded by contemporary industry (Treve, 2024). Realising this ideal, however, also depends on educators' compliance with clear ethical guidelines and strong institutional policy support, both of which have been shown to significantly predict positive AI adoption outcomes in TVET settings (Ayanwale, *et al*, 2025).

In practice, however, the obtainable situation across universities in Plateau State falls markedly short of this ideal. Infrastructural deficits, unreliable power and internet supply, limited institutional funding, and the absence of systematic professional development opportunities continue to restrict how far educators can meaningfully incorporate AI into TVET instruction (Ahmed et al., 2025; Bolu et al., 2024). Many educators in these universities possess only rudimentary exposure to AI applications, a constraint that limits their confidence and willingness to adopt such tools (Nja et al., 2023). Concerns about data privacy, the ethical use of learner information, and the absence of clear institutional or national policy guidance further complicate the landscape (Omeh et al., 2024). Consequently, the transformative potential that AI holds for vocational education in Plateau appears State remain to largely unrealised, leaving TVET graduates less prepared than they might otherwise be for an increasingly AI-driven labour market. This situation creates a critical empirical gap which necessitates this study.

Purpose of the study

The general purpose of the study was to investigate integration of artificial intelligence into Technical and Vocational Education Programme from perspectives of educators in tertiary institutions of Plateau State. Specifically, the study determined:

1. educators' perceptions of potential benefits of adopting AI in teaching and learning in TVET program in Universities in Plateau State.
2. challenges educators could face by educators in adopting AI in teaching and learning within TVET program in Universities in Plateau State.
3. strategies for enhancing effective AI integration in TVET programs from

educators' perspective in Universities in Plateau State.

Hypotheses (HOs)

There is no significant difference in the mean response of lecturers, HODs, and Instructors on the following at 0.05 level of significance:

HO_1: perceived benefits of AI adoption among educators in TVET programs in Universities in Plateau State.

HO_2: challenges educators could face in adopting AI in teaching and learning within TVET in Universities in Plateau State.

HO_3: strategies for the effective integration of AI in TVET programs in Universities in Plateau State

Methodology

***Design of the study*:** Descriptive survey research design was used for the study.

***Area of the Study*:** The study was conducted in Plateau State. The area has two universities that offer TVET programmes. The choice of the area of study is because these universities offer TVET programme and have good number of lecturers and curriculum experts.

***Population for the Study*:** The population for the study was 75 lecturers from Technology education departmentS of the University of Jos and Federal University of Education Pankshin. The population was made up of 45 lecturers, 15 HODs and 15 Instructors. Five of the lecturers were professors, 10 associate Professors, 30 senior lectures, and 20 junior lecturers. There were 16 female lectures and 44 male lectures. These participants are selected based on expertise in TVET curriculum implementation and practices. The entire population was used for the study because of the relatively manageable size.

***Instrument for Data Collection*:** The instrument for data collection was a structured four-point scale questionnaire. Part A consisted of the bio data of the respondents. Part B focused on items dealing with the three specific purposes of the study. Each item w= was structured as follows: Strongly Agree (SA) = 4; Agree (A) =3; Disagree (D) =2; Strongly Disagree = 1. Instrument was validated by three university experts in TVET and Computer Science. To obtain data for the establishment of reliability of the instrument, it was trial tested among 20 TVET lecturers in a university outside the area of the study. Cronbach Alpha method was employed, for analysis, and a coefficient of 0.86 was obtained.

***Data Collection*:** A total of 75 copies of questionnaires were administered to the respondents by hands, with the help of three trained assistants. All the 75 copies of questionnaire were properly complelid and returned within three days. This gave a return of 100 percent.

***Data Analysis Technique*:** Data were analyzed using descriptive statistics of means, standard deviation and ANOVA at 0.05 level of significance. Mean value of 2.50 above ($\overline{X} \geq 2.50$) denotes agreed while below 2.50 was considered **not agree**. For the p-value that is less than or equal to 0.05, the null hypothesis (H) was rejected. For the p-value that is greater than 0.05, the null hypothesis was upheld.

Findings

Table 1: Mean, Standard Deviation, F-ratio and significance value of response of educators' perceptions of the potential benefits of adopting AI in teaching and learning within TVET program in Universities in Plateau State

S/N	Benefits	$\bar{X}_1$	SD 1	$\bar{X}_2$	SD 2	$\bar{X}_3$	SD 3	$\bar{X}_g$	SD g	D	F	df	Sig.
1	Personalization of learning experiences for my students in TVET programs.	3.11	.58	3.0	.95	3.3	.64	3.14	.72	A	1.08	2	.34
2	AI technologies help improve my students' learning outcomes	3.16	.70	3.0	.76	3.3	.65	3.18	.70	A	1.02	2	.36
3	Insights into student performance that can guide my instructional strategies.	3.27	.57	3.2	.64	3.0	.75	3.16	.65	A	.51	2	.60
4	AI in my teaching saves me time management on administrative tasks, allowing me to focus on instruction.	3.44	.61	3.1	.78	3.0	.78	3.17	.72	A	1.62	2	.20
5	Catering to diverse learning needs among my students	3.33	.90	3.0	.86	3.0	.92	3.11	.89	A	.84	2	.43
6	Assessment methods that better reflect student understanding	3.11	.83	2.8	1.0	3.1	1.0	3.00	.94	A	.79	2	.45
7	More engaging and interactive classroom environment	2.66	1.0	2.9	.93	2.9	1.0	2.82	.98	A	.48	2	.61
8	Students' preparation for the skills required in the modern workforce	3.00	.84	3.0	.71	2.9	.68	2.97	.74	A	.26	2	.76
9	Collaboration between students and educators by providing real-time feedback and support.	3.47	.57	3.5	.64	3.2	.75	3.39	.65	A	1.14	2	.32

Table 1 Continues

10	Confidence in delivering high-quality instruction in TVET programmes	3.24	.61	3.1	.78	3.0	.72	3.11	.70	A	.96	2	.38
11	Identification of students at risk of poor performance, enabling timely interventions.	3.23	.90	3.0	.86	3.1	.92	3.11	.89	A	.51	2	.59
12	Students' encouragement to develop critical digital skills relevant to future employment	3.31	.83	2.8	1.0	3.1	1.1	3.07	.98	A	.96	2	.38
13	Institutional efficiency and overall improvement in programme delivery	2.46	1.0	2.9	.93	2.4	1.0	2.59	.98	A	.07	2	.93
	Cluster mean	3.15	.78	3.02	.85	3.05	.83	3.13	.81	A			

$\bar{X}_1$ = Mean of Lecturers; SD_1 = Standard Deviation of Lecturers; $\bar{X}_2$ = Mean of Heads of Department; SD_2 = Standard Deviation of Heads of Department; $\bar{X}_3$ = Mean of Instructors; SD_3 = Standard Deviation of Instructors; $\bar{X}_g$ = Grand Mean; SD_g = Grand Standard Deviation; A = *Agree; NA = Not Agree; D = Decision; F = F-statistics (F-ratio); Sig. = p-value*

Table 1 indicates that Educators (lecturers, HODs, instructors) generally agree that AI offers benefits in TVET teaching and learning, with a cluster grand mean of 3.13 (on a 4-point scale). Standard deviations are moderate (≈0.7–0.9), showing some variation but no extreme disagreement among lecturers, HODs, and instructors. All F-ratios are low and p-values > 0.05, meaning no statistically significant differences in perceptions across the three educator groups. This suggests a shared consensus rather than group-specific views. Educators broadly agree that AI can personalize learning, improve outcomes, support differentiated instruction, and prepare students for workforce skills. However, they are less convinced about AI's role in fostering engagement or institutional efficiency.

Table 2: Mean, Standard Deviation, F-ratio and significance value of response on challenges faced by educators in adopting AI in teaching and learning within TVET in Universities in Plateau State

S/N	Challenges	$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2	$\bar{X}_3$	SD_3	$\bar{X}_g$	SD_g	D	F	df	Sig.
1	Lack of adequate training in using AI technologies.	3.44	.61	3.30	1.00	2.95	1.13	3.23	.97	A	1.42	2	.24
2	Uncertainty regarding effectiveness of AI tools in educational settings	3.38	.69	3.44	.87	3.40	.79	3.41	.80	A	.03	2	.96
3	Financial constraints that limit acquisition and use of AI technologies in my programs	3.27	.75	3.22	.86	3.09	.81	3.19	.81	A	.28	2	.75
4	Data privacy and ethical implications hinder willingness to adopt AI tools.	3.38	.60	3.38	.68	3.50	.59	3.42	.63	A	.23	2	.79
5	Resistance from students toward using AI technologies	3.38	.84	3.27	.81	3.18	.90	3.27	.84	A	.29	2	.74
6	Difficulties in integrating AI tools with existing curricula and teaching methods	3.44	.78	3.47	.73	3.13	.88	3.36	.79	A	1.33	2	.27
7	Limited access to reliable technology infrastructure (e.g., internet, devices)	2.77	.64	3.22	.68	2.86	.83	2.95	.73	A	2.94	2	.05
8	Insufficient institutional support for the adoption of AI technologies in my teaching.	3.00	.76	3.22	.79	3.09	.86	3.10	.80	A	.48	2	.61
9	Frequent phobia in utilizing AI tools	3.27	.61	3.31	.67	3.21	.79	3.26	.80	A	1.08	2	.34
10	Lack of clear institutional policies and guidelines on AI usage creates uncertainty in its adoption.	3.31	.74	3.12	.86	2.50	.81	3.98	.81	A	1.02	2	.36
11	Limited awareness among Lecturers	3.31	.52	3.21	.68	3.71	.59	3.41	.43	A	.51	2	.60
	Cluster mean	**3.28**	**.69**	**3.28**	**.79**	**3.15**	**.82**	**3.25**	**.77**	**A**			

$\bar{X}_1$ = Mean of Lecturers; SD_1 = Standard Deviation of Lecturers; $\bar{X}_2$ = Mean of Heads of Department; SD_2 = Standard Deviation of Heads of Department; $\bar{X}_3$ = Mean of Instructors; SD_3 = Standard Deviation of Instructors; $\bar{X}_g$ = Grand Mean; SD_g = Grand Standard Deviation; A = *Agree; NA = Not Agree; D = Decision; F = F-statistics (F-ratio); Sig. = p-value*

Table 2 shows educators generally agree that several challenges hinder AI adoption in TVET, with a cluster grand mean of 3.25 (on a 4-point scale). Most F-ratios are low and p-values > 0.05, meaning no significant differences across lecturers, HODs, and instructors. The only near-significant difference relates to technology infrastructure, indicating that access issues may vary more between educator

groups. Educators broadly agree that training gaps, uncertainty about AI's effectiveness, ethical concerns, and integration difficulties are the main barriers to adoption in TVET.

Table 3: Mean, Standard Deviation, F-ratio and significance value of educators' response on strategies for enhancing effective AI integration in TVET programs in Universities in Plateau State

S/N	Challenges	$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2	$\bar{X}_3$	SD_3	$\bar{X}_g$	SD_g	D	F	df	Sig.
1	Technical support for the integration of AI technologies	3.22	.80	3.00	.86	3.04	.95	3.06	.87	A	.39	2	.67
2	Adequate institutional policies in universities that involves using AI technologies among educators	3.50	.61	3.05	.67	3.13	.94	3.18	.74	A	2.17	2	.12
3	Collaborative discussions among educators about best practices for AI integration	3.44	.70	3.19	.88	3.04	.84	3.21	.81	A	1.14	2	.32
4	Effective use of AI in educational settings to impact students	3.44	.70	3.25	.76	3.09	.92	3.25	.79	A	.96	2	.38
5	Curriculum revision to include integrating AI tools in to teaching and learning.	3.05	.87	3.19	.62	3.00	.81	3.10	.77	A	.51	2	.59
6	Partnerships with AI technology vendors to ensure educators receive proper training and resources.	3.11	.67	3.33	.53	3.31	.56	3.27	.59	A	.96	2	.38
7	Creating a community of practice for educators to share their experiences with AI	3.05	.72	3.13	.79	3.09	.81	3.10	.77	A	.07	2	.93
8	Regular professional development programmes to build educators' competence in using AI tools effectively	3.44	.70	3.25	.76	3.09	.92	3.25	.79	A	1.42	2	.24
9	Government and policy makers should provide clear national frameworks to guide the ethical and pedagogical use of AI in TVET.	3.05	.87	3.19	.62	3.00	.81	3.10	.77	A	.03	2	.96

Table 3 Continues

10	Institutions should allocate funding to support acquisition and maintenance of AI technologies for teaching and learning	3.11	.67	3.33	.53	3.31	.56	3.27	.50	A	.28	2	.75
	Cluster mean	3.34	.76	3.25	.75	3.01	.84	3.28	.79	A			

$\bar{X}_1$ = Mean of Lecturers; SD_1 = Standard Deviation of Lecturers; $\bar{X}_2$ = Mean of Heads of Department; SD_2 = Standard Deviation of Heads of Department; $\bar{X}_3$ = Mean of Instructors; SD_3 = Standard Deviation of Instructors; $\bar{X}_g$ = Grand Mean; SD_g = Grand Standard Deviation; A = *Agree; NA = Not Agree; D = Decision; F = F-statistics (F-ratio); Sig. = p-value*

Table 3 shows that educators generally agree on the importance of strategies to enhance AI integration in TVET, with a cluster grand mean of 3.28. Standard deviations are moderate (≈0.75–0.84), showing some variation but overall agreement. All F-ratios are low and p-values > 0.05, meaning no significant differences across lecturers, HODs, and instructors. This indicates a shared consensus on the strategies needed. Educators broadly agree that policy support, professional development, collaborative practices, and institutional investment are crucial for effective AI integration in TVET. While technical support and curriculum redesign are acknowledged, the strongest emphasis is on building educator confidence, providing training, and establishing supportive frameworks.

Discussion of Findings

Findings on educators' perceived benefits of AI integration (Table 1) show a cluster grand mean of 3.13, indicating that educators across the two universities in Plateau State generally agree that AI offers meaningful support for teaching and learning within TVET programmes. The highest-rated benefit was AI's contribution to real-time feedback and collaboration between students and educators (mean = 3.39), followed by time saved on administrative tasks (mean = 3.17) and improved student learning outcomes (mean = 3.18).

These results are consistent with recent evidence that AI-powered chatbots and automated tools ease the administrative burden placed on instructors, freeing time for direct instruction and more targeted student support (Labadze et al., 2023). Similarly, AI-supported assessment and feedback tools have been shown to reduce inconsistent grading and delayed feedback in Nigeria's higher education system, addressing administrative burdens comparable to those reported by educators in the present study (Agbarakwe & Chibueze, 2024). The finding on real-time feedback similarly aligns with scholarship showing that AI technologies are increasingly recognised for supporting adaptive, interactive learning environments and expanding the instructional roles educators can take on (Chiu et al., 2023). The absence of statistically significant differences across lecturers, HODs, and instructors (all p > .05) indicates that this positive orientation toward AI's instructional benefits is broadly shared across professional cadres in universities in Plateau State, rather than concentrated among any one group.

By contrast, educators expressed comparatively weaker confidence in AI's contribution to institutional efficiency

(mean = 2.59) and classroom engagement (mean = 2.82), the two lowest-rated items in Table 1. This pattern reflects a broader finding in the literature that AI's instructional benefits at the level of individual practice do not automatically translate into institution-wide efficiency gains, particularly where systemic factors such as policy coordination and infrastructure remain weak (Omeh et al., 2024; Rabiu et al., 2025). This is consistent with an ethical-benchmarking analysis of Nigerian tertiary institutions, which found that infrastructural deficits and weak policy enforcement, rather than a lack of institutional appetite, are the primary constraints on AI-driven efficiency gains (Elems-Ikwegbu, 2025). It suggests that educators in universities in Plateau State view AI primarily as a tool that supports their individual practice rather than as a lever for organisational transformation, a distinction with implications for how institutional leaders frame AI adoption strategies going forward.

The findings on challenges (Table 2) similarly indicate strong agreement, with a grand cluster of 3.25. The most highly rated challenges were data privacy and ethical concerns (mean = 3.42), uncertainty about AI's effectiveness (mean = 3.41), and difficulty integrating AI tools into existing curricula (mean = 3.36). These findings corroborate recent studies identifying ethical governance, algorithmic bias, and unclear institutional policy as persistent barriers to AI adoption in Nigerian TVET and higher education more broadly (Omeh et al., 2024; Sanusi et al., 2024).

The prominence of training-related concerns (mean = 3.23) is also consistent with evidence that limited digital literacy, and the absence of structured professional development continue to constrain educators' readiness to adopt AI tools, even where awareness and interest are high (Nja et al., 2023; Ahmed et al., 2025). This finding echo evidence from universities in Enugu State, where vocational education lecturers reported using AI tools inconsistently despite general awareness of them, largely because of insufficient hands-on training (Eze & Onah, 2024). Notably, technology infrastructure returned the lowest mean (2.95) among the challenges but was the only item to approach statistical significance across educator groups ($p = .05$), suggesting that access to reliable internet and computing facilities varies more by role or department than the other challenges examined. This finding is consistent with reports that infrastructural disparities within Nigerian tertiary institutions are often uneven rather than uniform, shaped by differences in departmental funding and facility allocation (Bolu et al., 2024; Rabiu et al., 2025).

Findings on strategies for effective AI integration (Table 3) produced the highest cluster grand mean of the three constructs (3.28), indicating strong educator consensus on the interventions needed to support adoption. Educators placed particular emphasis on regular professional development (mean = 3.25), partnerships with AI technology vendors (mean = 3.27), and dedicated institutional funding (mean = 3.27), alongside collaborative discussions on best practice (mean = 3.21). This pattern is consistent with the roadmap proposed in recent systematic reviews of AI adoption in Nigerian TVET, which similarly identify continuous professional development, infrastructure investment, and multi-

stakeholder engagement as the central enablers of sustainable AI diffusion (Rabiu et al., 2025). A systematic review of AI integration among STEM academics in African higher education likewise found that reallocating administrative tasks to AI systems allows institutions to redirect staff time toward higher-value, student-focused activities, reinforcing the strategic value educators in this study placed on institutional investment in AI infrastructure and support (Falebita & Kok, 2024). The comparatively lower emphasis placed on curriculum revision (mean = 3.10) and communities of practice (mean = 3.10) suggests that educators in universities in Plateau State currently regard capacity building and material support as more urgent priorities than pedagogical redesign, at least at this stage of adoption.

Conclusion

The study concludes that educators in Plateau State perceive AI as a valuable tool for enhancing personalization, collaboration, and instructional efficiency in TVET. However, challenges such as inadequate training, ethical concerns, and infrastructural limitations remain significant barriers. Importantly, perceptions across lecturers, HODs, and instructors were consistent, indicating a shared consensus on both the opportunities and obstacles of AI integration. Effective adoption will require systemic reforms, including professional development, institutional support, and national policy frameworks that align AI integration with workforce demands.

Recommendations

Based on the findings, the following recommendations are made:

1. Regular professional development programmes should be organized to enhance educators' competence and confidence in using AI tools.
2. Government and institutional authorities should establish clear policies and ethical guidelines to regulate AI use in TVET.
3. Institutions should prioritize funding for reliable technology infrastructure, including internet access and digital devices, to support AI integration.
4. Communities of practice and collaborative discussions among educators should be fostered to share experiences and best practices in AI adoption.
5. Strategic partnerships with AI vendors and industry stakeholders should be developed to provide training, resources, and technical support.
6. Continuous research should be conducted to assess the effectiveness of AI tools in TVET, ensuring evidence-based adoption and improvement.

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