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Artificial Intelligence-Driven Learning Assessment in Faculties of Education: An Exploratory Study

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ABSTRACT. Artificial intelligence (AI) is reshaping higher education, yet its role in student learning assessment, particularly within faculties of education where future teachers are trained, remains insufficiently explored. As AI tools rapidly expand, they create a pressing paradox: on one hand, these technologies offer unprecedented efficiency, personalization, and scalability; on the other, they raise critical risks concerning pedagogical integrity, ethical governance, and the erosion of human-centered evaluation. This study addresses this gap by examining the practices, perceptions, opportunities, and challenges of AI-driven assessment in faculties of education. Employing a qualitative exploratory design, data were collected through semi-structured interviews and institutional document analysis with 20 lecturers and policymakers from universities in Surakarta, Indonesia. The findings reveal a striking tension. Faculty members actively deploy tools such as Grammarly, Turnitin, ChatGPT, and adaptive learning platforms for automated feedback, plagiarism detection, and real-time analytics, reporting efficiency gains of up to 90%. Yet, participants expressed profound concerns: AI's inability to capture higher-order thinking, risks of student overreliance, ethical dilemmas related to privacy and bias, and fears of diminished professional judgment. Equally, they envisioned transformative opportunities for real-time formative feedback, early intervention, and scalable personalized support, provided AI is embedded in collaborative, pedagogically aligned frameworks. The study demonstrates that the unchecked adoption of AI risks narrowing creativity and critical thinking, but thoughtful integration can advance equity, innovation, and reflective pedagogy. Sustainable AI adoption in learning assessment requires institutional readiness, targeted training, and robust ethical safeguards to ensure AI augments rather than undermines teacher education.

Keywords: *AI-Driven, Learning Assessment, educational technology, higher education*

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INTRODUCTION

In recent years, integrating artificial intelligence (AI) into various sectors has significantly altered traditional practices, and higher education has become one of the most affected domains. Within teaching and learning, AI technologies are now widely recognized for enhancing instructional design, streamlining administrative tasks, and transforming assessment and evaluation processes (Cope et al., 2021; Ouyang & Jiao, 2021). Tools such as automated grading systems, adaptive learning platforms, and real-time feedback mechanisms have increasingly been embedded into classrooms and digital learning environments, helping instructors manage large student

cohorts while maintaining quality (Agus et al., 2024; Kardi et al., 2023; Ritonga et al., 2024; D. Wang & Huang, 2025). For example, applications like Gradescope and Turnitin employ machine learning algorithms to evaluate written assignments and detect plagiarism (Yim & Su, 2025), while AI-driven learning management systems (LMS) provide individualized feedback based on detailed learning analytics (Ellikkal & Rajamohan, 2024; Putri et al., 2025). These technological affordances are particularly significant for faculties of education, where preparing future teachers requires innovative, evidence-based evaluation methods beyond conventional paper-based or subjective assessments (Arar et al., 2025; Che Ghazali et al., 2025). As higher education moves toward greater reliance on technology, it is essential to critically investigate how AI-driven assessments are being implemented in this particular academic setting, which bears the responsibility of shaping the pedagogical practices of future educators.

The integration of AI in learning assessment is not without controversy. On the one hand, the promise of efficiency, personalization, and scalability is appealing, particularly for institutions managing diverse and growing student populations. (Topali et al., 2025). On the other hand, the use of AI for evaluating learning outcomes raises significant pedagogical and ethical challenges. For instance, AI systems can provide rapid feedback on writing mechanics, detect plagiarism, and predict students' academic trajectories. However, these tools often struggle to assess complex skills such as critical thinking, creativity, or reflective judgment, which remain central goals of higher education. (Marshall et al., 2024). Furthermore, reliance on opaque algorithms introduces risks related to data privacy, algorithmic bias, and academic integrity, raising concerns about the fairness and transparency of AI-generated evaluations ((Aguilar-Cruz & Salas-Pilco, 2025); (Malik et al., 2024); (N. Wang & Li, 2024); (Babanoğlu et al., 2025)). These tensions are particularly urgent in education faculties, where students are not only learners but also future teachers. If teacher candidates themselves rely on AI without fully understanding its limitations, they may replicate efficiency-driven but pedagogically shallow assessment practices in their future classrooms. (Rahiman & Kodikal, 2024). Thus, the critical issue is how AI can be harnessed to support, rather than compromise, educational assessment's integrity and human-centered nature.

Scholars have increasingly investigated the role of AI in supporting learning, with much of the literature focusing on its application to personalized instruction, adaptive feedback, and predictive analytics. For example, ((Cope et al., 2021) and ((Koh & Doroudi, 2023) reviewed AI applications in education, finding that most studies highlight intelligent tutoring systems, learning analytics, and recommendation engines that enable adaptive pathways tailored to student needs. Similarly, ((J. J. Chen & Perez, 2023) underscored how AI-driven adaptive platforms reshape content delivery and learning trajectories, while ((Nikolic et al., 2024) emphasized the influence of AI on instructional design, including using chatbots, predictive analytics, and virtual assistants to enhance engagement. More applied research has focused on assessment-specific innovations. ((Gardner et al., 2021) investigated intelligent tutoring systems for formative assessment, ((Hooda et al., 2022) examined AI-based predictive tools to support teachers in identifying at-risk students, and ((Feng et al., 2023) analyzed Assistments, an AI-powered mathematics assessment platform. More recent works by ((Gouseti et al., 2025) emphasized the ethical considerations of AI adoption, particularly the importance of retaining human roles in evaluation processes. Although these studies demonstrate the potential of AI to enhance efficiency and learning outcomes, the literature tends to prioritize technological performance while underexploring pedagogical integration and faculty perspectives, particularly within education faculties.

Despite growing scholarly attention, important research gaps remain that highlight the novelty of the present study. *First*, most existing research on AI in assessment does not focus specifically on faculties of education, even though these institutions are uniquely tasked with preparing future teachers to engage with technology in pedagogically responsible ways. This oversight is critical, as teacher training programs' ethical and professional demands differ substantially from those in other disciplines ((Cope et al., 2021); (Nikolic et al., 2024). *Second*, most studies emphasize operational effectiveness, how AI saves time, streamlines grading, or supports

adaptive quizzes, while often neglecting the deeper pedagogical and ethical implications. ((Li et al., 2023)). *Third*, while data privacy, algorithmic bias, and student autonomy are acknowledged in some studies. ((Malik et al., 2024); (Babanoğlu et al., 2025)), They are rarely analyzed concerning the everyday realities of assessment within teacher education. This leaves a striking void in the literature: we lack critical, context-specific insights into how AI shapes learning evaluation where pedagogical principles are most central. Addressing this gap is essential for advancing theory and preventing the uncritical adoption of AI that risks reducing education to mechanical efficiency.

To address these gaps, the present study conducts an exploratory investigation into AI-driven assessment within faculties of education in Indonesia. The study aims to provide an in-depth understanding of how AI tools are applied in formative and summative evaluations, how educators and policymakers perceive these tools, and what challenges and opportunities arise in practice. By doing so, this research advances the proposition that AI has the potential to enrich assessment practices through real-time feedback, adaptive learning pathways, and data-informed insights, but only if it is integrated thoughtfully with attention to pedagogy and ethics. Without such caution, AI adoption risks undermining teacher autonomy, narrowing assessment design, and encouraging student overreliance on automated outputs. Therefore, the study examines technical efficiency, pedagogical alignment, institutional readiness, and ethical governance. Specifically, it addresses four guiding research questions: (1) What AI-driven evaluation methods are currently employed in faculties of education? (2) How do lecturers and policymakers perceive AI-assisted assessment? (3) What challenges and limitations emerge in AI adoption? (4) How can AI-driven assessment be optimized for effective and ethical teaching and learning? Through these questions, the study aims to contribute actionable insights for developing sustainable frameworks that balance innovation, integrity, and pedagogical depth.

METHOD

This study adopted an exploratory case study design. (Yin, 2015) to examine how artificial intelligence (AI) is integrated into learning assessment within faculties of education. The exploratory case study approach was selected because AI-driven assessment is an emerging and complex phenomenon that requires an in-depth understanding of real-life practices and institutional contexts. By employing this design, the research captured diverse experiences, perceptions, and institutional strategies while acknowledging the contextual uniqueness of each setting. Furthermore, the case study method facilitated methodological triangulation across multiple data sources, including semi-structured interviews, document reviews, and observational notes, thereby enhancing the credibility and comprehensiveness of the findings. (Hollweck, 2015).

The study involved 20 purposively selected participants from three faculties of education in Surakarta municipality, Central Java, Indonesia, comprising two public universities and one private university. These institutions were chosen based on two criteria: their "*unggul*" (excellent) accreditation status and the integration of AI tools into their teaching and assessment practices as identified through preliminary observation. Data were collected over six weeks (12 March–25 April 2025) through semi-structured interviews lasting 45–60 minutes each, conducted face-to-face or via secure video conferencing, depending on availability. The interview protocol, piloted with two external faculty members, covered five key areas: current AI assessment practices, perceived effectiveness and fairness, comparisons with traditional methods, ethical concerns (bias, data privacy, transparency), and institutional support for AI adoption.

Thematic analysis was employed to analyze both interview transcripts and institutional documents, following ((Lochmiller, 2021) The six-phase framework consists of data familiarization, generation of initial codes, theme searching, theme reviewing, theme definition and naming, and final reporting. All interviews were audio-recorded, transcribed verbatim, and coded inductively to allow themes to emerge organically rather than imposing a predetermined structure. This inductive approach facilitated the identification of recurring patterns and meaningful variations in participant

perceptions, practices, and concerns. Document analysis was conducted in parallel to strengthen interpretation by situating faculty perspectives within broader institutional contexts.

Table 1. Participants' Characteristics

Participant	Age	Education Background & Expertise	Length of Teaching (Years)
P1	44	Ph.D in Mathematics Education	14
P2	42	Ph.D in language education	12
P3	42	Ph.D in language education	9
P4	39	Ph.D in Biology Education	10
P5	36	Ph.D in Elementary Teacher Education	10
P6	41	Ph.D in Islamic education	13
P7	38	Ph.D in Elementary Teacher Education	8
P8	34	Ph.D in Chemistry education	5
P9	32	Ph.D in Physics	4
P10	44	Ph.D in Natural Science	16
P11	36	Ph.D in Educational Technology	8
P12	36	Ph.D in Educational Technology	6
P13	29	Master's in Educational Technology	3
P14	29	Master's in Educational Technology	4
P15	32	Master's in language education	4
P16	38	Master's in Islamic Education	10
P17	38	Master's in Islamic Education	9
P18	39	Master's in Biology Education	11
P19	40	Master's in Mathematics Education	12
P20	32	Master's in Elementary Teacher Education	4

Source: Data Collection, 2025

RESULTS AND DISCUSSION

Result

Current Use of AI-Driven Evaluation Methods in Faculties of Education

The findings indicate that faculty members across the studied institutions increasingly adopt AI tools to support learning assessment. A large majority (18 out of 20, or 90%) reported using automated feedback systems such as Grammarly, Turnitin, or LMS features to evaluate students' work, significantly reducing workload while ensuring timely responses. Similarly, almost all participants (19 out of 20, or 95%) observed that their students relied on generative AI tools such as ChatGPT and Gemini to refine writing quality, improve coherence, and eliminate redundancy before submission. Plagiarism detection through Turnitin was also noted as a widespread practice, not only to identify academic dishonesty but also as an instructional tool to enhance citation skills. Furthermore, over half of the participants highlighted the integration of AI within Learning Management Systems (LMS), including adaptive quizzes, rubric automation, and learning analytics dashboards that visualize trends and flag at-risk students. Collectively, these practices demonstrate that AI-driven assessment has become a central component in faculties of education, improving efficiency, enabling personalized support, and reshaping assessment into a hybrid process that combines AI-assisted and human-led evaluation. Below are several statements from the participants:

> *"AI tools like Grammarly or Microsoft Editor help me deliver immediate, targeted feedback on grammar and sentence clarity, which is especially useful for large classes where manual feedback takes too long."* (P1, Interview)
>
> *"Students often use AI-based writing tools to refine their language, improve coherence, and eliminate redundancy before submitting assignments. It has become part of their writing routine."* (P6, Interview)

> *"Turnitin not only flags potential plagiarism but also helps students understand citation rules through its detailed feedback. It's an educational tool, not just a punitive one."* (P3, Interview)

> *"AI-powered dashboards help us visualize students' learning trends and identify who might need intervention, based on metrics like login frequency and quiz attempts."* (P12, Interview)

Overall, the responses demonstrate that AI is actively embedded into different stages of assessment. Automated feedback supports students in iterative writing processes, while plagiarism detection tools ensure academic integrity and promote better understanding of citation practices. Learning analytics, adaptive quizzes, and rubric automation illustrate AI's role in personalizing learning pathways and providing timely feedback at scale. Importantly, participants described AI as complementary rather than substitutive. While AI manages repetitive and mechanical aspects of assessment, educators can devote more time to higher-order tasks, such as evaluating critical thinking and supporting deeper learning. This shift reflects a growing maturity of digital infrastructures in faculties of education, pointing toward a blended assessment culture that integrates technological efficiency with pedagogical depth.

Exploratory observations during the study supported the interview data by providing contextual insights into how AI was utilized in daily assessment practices. In classroom observations, lecturers were seen integrating Grammarly and Turnitin feedback into their assignment review process, particularly in large classes where manual correction would have been time-consuming. Observations of LMS dashboards showed that faculty members actively used learning analytics to identify at-risk students and adjust their teaching strategies accordingly. In several instances, students consulted AI-generated feedback before submitting their assignments, confirming lecturers' accounts of students' proactive use of generative AI to refine their work. These observations reinforced the interview findings that AI tools enhance efficiency and foster a culture of continuous feedback and self-improvement, albeit with growing concerns about potential over-reliance.

Participants' Perceptions and Concerns Regarding AI-Driven Evaluation

Faculty members expressed a combination of optimism and caution regarding AI-driven evaluation. A significant majority (16 of 20, or 80%) perceived AI tools like ChatGPT and Gemini as supportive mechanisms that reduce repetitive tasks, improve efficiency, and allow them to focus more on pedagogical strategies. Similarly, many participants emphasized the practical benefits of AI for formative assessments, such as consistency in grading and faster feedback delivery. However, concerns were also strongly voiced: half of the participants (10 of 20, or 50%) highlighted ethical issues, particularly regarding data privacy, transparency, and the lack of clear boundaries for AI's role in education. Additionally, all participants (100%) reported anxieties about over-reliance on AI, warning that it may diminish faculty autonomy and student critical thinking. These perspectives illustrate that while AI substantially enhances assessment efficiency and accessibility, faculty members remain cautious about its long-term impact on pedagogical integrity, student independence, and professional roles. The following are quotes from the participants in terms of these findings:

> *"I believe AI like ChatGPT and Gemini acts as a support mechanism, enhancing the evaluation process by reducing repetitive tasks so I can focus on pedagogical strategies. While I appreciate AI's efficiency, I remain cautious because we have not yet explored its long-term impact on learning depth and creativity."* (P2 & P3 Interview).
>
> *"I am concerned about the ethical side, data storage, usage, and the lack of consent protocols in some of the AI tools used in assessments." I am worried that over-reliance on AI might marginalize the teacher's role in assessing student understanding and contextual learning." I have noticed some students now rely too heavily on AI tools for everything, even for tasks they should be attempting independently, which affects critical thinking."* (P5, 7 & 20, Interview).

The faculty perceptions demonstrate a cautious optimism that values AI's supportive role but also resists its potential overreach. On the positive side, participants recognized AI's contributions to efficiency, speed, inclusivity, and workload reduction. Several noted how AI tools make assessment more accessible, especially for students with language difficulties or those requiring differentiated support. However, skepticism remains about the risks of over-reliance, particularly fears of de-skilling teachers and students, the inability of AI to handle subjective or creative tasks, and the lack of transparency in AI-generated results. Furthermore, many participants stressed insufficient institutional training and support, which hindered responsible AI adoption. These findings underscore the importance of balancing AI's immediate practical benefits with strategic, ethical, and pedagogically sound frameworks that safeguard teaching integrity and student development.

Exploratory observations reinforced these perceptions by highlighting patterns of cautious adoption in practice. Faculty members were observed using AI tools for basic tasks such as grammar feedback or plagiarism checking. However, they remained actively involved in higher-level assessment activities, particularly tasks requiring critical evaluation or creativity. For instance, during writing assessments, lecturers often reviewed AI-generated feedback manually before finalizing their evaluations, indicating a reluctance to rely solely on technology. Observations also showed that some students leaned heavily on AI-generated text refinements, which occasionally reduced originality in their work, confirming participants' concerns about over-dependency. Furthermore, institutional practices demonstrated uneven support for AI integration, with limited training workshops and minimal guidance on ethical standards. These observations align with faculty testimonies that, while AI offers clear efficiencies, its role must remain carefully regulated to avoid undermining assessment's pedagogical and ethical dimensions.

Challenges and Limitations in Implementing AI-Driven Evaluation

The integration of AI-driven evaluation in faculties of education is constrained by a range of challenges that span technical, institutional, pedagogical, and ethical dimensions. A significant barrier lies in technical infrastructure, with participants noting inadequate internet access and platform incompatibility. As many as 16 participants (80%) also emphasized the lack of formal training and institutional support, leaving educators to rely on self-directed learning without consistent policies or frameworks. Additionally, 8 participants (40%) identified issues of pedagogical misalignment, explaining that while tools like ChatGPT and Gemini are helpful for mechanics, they fail to address the deeper outcomes of teacher education programs. Other concerns include data privacy risks, inequitable feedback for non-native English speakers, and student overdependence on AI-generated outputs. Together, these findings indicate that while AI brings efficiency, its effective integration remains limited by systemic weaknesses and unresolved ethical dilemmas.

> *"The basic infrastructure needed to support AI tools, like fast internet or compatible platforms, is still lacking in several classrooms." We were never formally trained in using these tools. I mostly learned from online tutorials, which are unsuitable for sustainable implementation."* (P4 & 6, Interview)
>
> *"Some AI tools do not align well with our program outcomes in teacher education. They are good for mechanics but miss pedagogical depth." There is always a worry about student data being stored or misused by third-party AI companies, especially with free tools." I worry that if we rely too much on AI to grade, we will start designing our assignments to be easily gradable by the AI, limiting how creative we can get with our teaching.* (P2, 8 & 16, Interview)

These findings demonstrate that several interrelated barriers hinder the effective integration of AI in educational assessment. First, persistent infrastructure limitations, such as weak internet connectivity and incompatibility between institutional systems and commercial platforms, reduce educators' confidence in adopting AI tools. Second, institutional support is insufficient: educators reported little to no structured training, resulting in fragmented knowledge and inconsistent application across faculties. Third, concerns about pedagogical misfit persist, as most tools

prioritize surface-level mechanics like grammar over higher-order skills such as reflective thinking or contextual analysis. Finally, ethical challenges, particularly regarding data security, algorithmic bias, and fairness, compound these difficulties, raising concerns that AI use may inadvertently perpetuate inequities. Moreover, many educators worried about AI's tendency to standardize assessment tasks, which could undermine creativity and narrow opportunities for open-ended or innovative assignments. Together, these limitations suggest that AI's role in educational evaluation may remain superficial and misaligned with deeper educational goals without stronger institutional frameworks.

Exploratory observations corroborated these challenges, revealing concrete gaps between AI's potential and its practical use in faculties of education. In classrooms with limited internet access, AI tools frequently failed to function smoothly, forcing lecturers to revert to manual methods. In training workshops, facilitators were observed relying on informal sharing of tutorials rather than structured programs, reflecting the lack of institutionalized capacity building. Moreover, AI systems embedded in LMS platforms often produced rigid, template-based feedback that lecturers had to adjust to align with course rubrics manually. Observations also confirmed equity concerns: non-native English-speaking students often received less valuable or confusing automated suggestions, while more proficient students benefited disproportionately. Finally, classroom dynamics revealed an over-reliance on AI, with some students observed submitting work with minimal revision after running it through generative AI, reinforcing faculty concerns about reduced originality and critical thinking. These observations underscore the systemic and pedagogical barriers that AI must address to support learning evaluation effectively.

Opportunities for Optimization and Effective Integration of AI Into Learning Evaluation

In addition to identifying challenges, participants emphasized a range of opportunities for optimization and effective integration of AI in learning evaluation. The most frequently cited opportunity was formative feedback enhancement, with 18 participants (90%) underscoring AI's ability to deliver real-time, iterative input that supports continuous revision and learning cycles. Faculty also highlighted the potential for personalized learning support and early intervention, enabled through AI-driven analytics embedded in Learning Management Systems (LMS) and related platforms. Approximately 15 participants (75%) described how tailored insights from AI could guide proactive instructional strategies, helping educators address student difficulties before they escalate. Further opportunities were noted in efficiency and scalability, particularly in large classes where AI makes detailed and individualized feedback feasible. Participants stressed that such optimization must be grounded in AI-human collaboration and educator involvement, ensuring that AI tools align with pedagogical goals rather than replace human judgment. To support the findings, below are the interview data:

> *"AI allows us to provide real-time formative feedback, helping students revise multiple times before final submission, which improves quality." AI has the potential to personalize the evaluation process by giving tailored insights and feedback to each student based on their learning behavior." By identifying struggling students early through AI data patterns like LMS, we can intervene before they fall behind academically."* (P1, 4 & 5, Interview)
>
> *"In large classes, AI tools make it feasible to provide detailed feedback to every student, which used to be unrealistic." Educators should be part of designing AI tools to ensure they align with our teaching goals and curriculum outcomes." "AI can complement human judgment. The best outcomes come when we combine both. AI handles structure while we evaluate depth and creativity."* (P8, 7 & 9 Interview)

The findings point to significant optimism regarding the transformative potential of AI in enhancing learning evaluation. Faculty members envisioned AI not only as a tool for automating grading but as a catalyst for pedagogical innovation, enabling iterative assessment, richer feedback, and more inclusive learning experiences. AI-supported analytics were seen as instrumental in identifying learning patterns, predicting student needs, and enabling targeted interventions that could strengthen retention and achievement rates. Faculty emphasized that AI integration should

not be a matter of efficiency alone but should contribute to restructuring assessment design, diversifying evaluation types, and engaging students in reflective, interactive learning processes. To achieve this, participants consistently underscored the necessity of collaboration among educators, developers, and policymakers in designing and governing AI systems, ensuring they are contextually relevant, ethically grounded, and adaptable to disciplinary needs. This vision underscores a hybrid model where AI amplifies, rather than diminishes, the human role in education, aligning efficiency with creativity and ethical oversight.

Observations in classrooms and faculty workshops reinforced these opportunities, illustrating practical scenarios where AI integration supported learning processes. For instance, in courses with high student numbers, AI-enabled platforms were observed providing immediate feedback on mechanics, while instructors concentrated on conceptual guidance during face-to-face sessions. In another case, an LMS dashboard flagged at-risk students based on login frequency and incomplete quizzes, prompting timely follow-ups by faculty. Observers also noted innovative practices, such as trial uses of AI-generated prompt libraries for peer-review activities and integration with e-portfolios, which allowed students' progress to be tracked across semesters. When thoughtfully implemented, these exploratory observations confirmed that AI can enrich formative feedback, enable proactive interventions, and create scalable yet personalized assessment ecosystems that enhance teaching and learning outcomes.

Table 2. Summary of the Findings

Theme	Sub-them	Key findings
Current Use of AI-Driven Evaluation Methods	Automated Feedback & Efficiency	Faculty use AI tools like Grammarly, Turnitin, and LMS features to provide immediate feedback on grammar, writing mechanics, and basic rubric elements. This automates routine tasks, saving time.
	Student Writing & Academic Integrity	AI tools like ChatGPT and Gemini are integrated to support students' writing processes and detect plagiarism. Students proactively use these tools to refine their work, improving its overall quality before submission.
	Learning Analytics & Adaptive Learning	AI-powered dashboards provide insights into student learning trends. Adaptive quizzes and automated scoring rubrics personalize learning and streamline large-scale assessments.
Participants' Perceptions and Concerns	Cautious Optimism	Faculty recognize AI's potential to enhance efficiency and provide consistent grading, viewing it as a supportive tool.
	Ethical & Pedagogical Concerns	Participants express caution about the long-term impact on learning depth, the potential for over-reliance, and the risk of de-skilling teachers and students.
	Lack of Transparency & Trust	Concerns were raised about the lack of transparency in AI's feedback generation, data privacy, and the need for institutional policies and role clarity for AI in assessment.
Challenges & Limitations in Implementation	Inadequate Technical Infrastructure	A key challenge is the lack of proper infrastructure to support AI tools, such as reliable internet access and compatible platforms.
	Lack of Training & Institutional Support	Educators feel they lack formal training and clear institutional policies to guide AI's practical and ethical use in their practice.

	Pedagogical Misalignment & Overdependence	Many existing AI tools do not align with the nuanced learning objectives of teacher education. Students may also become overly dependent on AI, which can hinder critical thinking.
Opportunities for Optimization	Enhanced Formative Feedback	AI can enable real-time, iterative feedback loops, helping students continuously revise their work and fostering a cycle of improvement.
	Personalized Support & Early Intervention	AI-driven analytics can help identify at-risk students early, enabling proactive and tailored interventions that significantly impact student success.
	AI-Human Collaboration	Educators envision a future where AI handles routine tasks while they focus on high-level pedagogical engagement, emphasizing the importance of co-designing AI tools to align with educational goals.

Source: Data Analysis by the Researchers, 2025

DISCUSSION

Reframing Current Use of AI-Driven Evaluation in Higher Education

The findings on the current use of AI-driven evaluation methods demonstrate an evolving landscape of assessment practices in higher education. Faculty members no longer employ AI tools merely for administrative convenience; they use them to enhance efficiency, deliver timely feedback, and track learner progress. This resonates with previous scholarship underscoring AI's capacity to advance formative assessment and provide personalized feedback. (Giray et al., 2024; González-Calatayud et al., 2021; Memarian & Doleck, 2024; Swiecki et al., 2022) However, this integration also signals a more profound paradigm shift in the role of the educator, from being the sole assessor to facilitating data-informed and technology-supported learning. (Hooda et al., 2022).

Such transformation is not merely technical but philosophical, requiring a reorientation of instructional design and assessment philosophy. ((Bagunaid et al., 2022) caution that without critical reflection, AI might inadvertently reinforce standardized, mechanistic forms of evaluation that limit pedagogical creativity and innovation. Similarly, ((X. Chen et al., 2022) argue that over-reliance on algorithmic assessments risks narrowing the diversity of pedagogical practices. Therefore, AI tools necessitate technical competence and theoretical clarity, where assessment objectives are revisited to ensure alignment with broader equity, inclusivity, and critical thinking goals. This finding situates the study within a gap in the literature. While much research celebrates AI's efficiency, fewer studies have problematized its potential to reshape educator identity and redefine assessment philosophies. This study thus contributes by extending the discourse from operational benefits toward epistemological implications, offering a nuanced understanding of how AI transforms the purposes and philosophies underpinning assessment.

The second theme highlights the complex perceptions among faculty members, characterized by a simultaneous recognition of AI's benefits and skepticism about its broader implications. Most view AI tools like ChatGPT and Gemini as supportive mechanisms that enhance efficiency and objectivity. However, their perceived opacity and limited capacity in evaluating complex, contextual, and affective learning outcomes fuel caution. This echoes ((Azizah & Mardiana, 2024; Nurhalisa et al., 2025; Ouyang & Jiao, 2021) argument that educators often approach AI with ambivalence, tempered by apprehension. Similarly, ((Weng & Chiu, 2023). point out the tension between technological potential and educational depth, given AI's incapacity to interpret nuance or creativity in student work.

Importantly, this theme draws attention to a trust gap. Without clear institutional policies or ethical frameworks, faculty worry that AI may undermine educator authority and student confidence in fair assessment ((Gouseti et al., 2025). This aligns with global debates on the need for transparent AI systems prioritizing accountability and stakeholder trust. The study reveals how

faculty perception determines AI adoption: optimism fosters experimentation, while skepticism may hinder integration. This dynamic adds an important dimension to the theoretical discourse by demonstrating that AI adoption is not merely technical but deeply cultural, mediated by educators' beliefs, experiences, and institutional environments. This study thus contributes to theory-building by reconstructing the concept of trust in educational technology adoption: trust is not only about system reliability but also institutional legitimacy and cultural acceptance. The findings extend technology adoption models that often underplay cultural and ethical factors by surfacing this dimension.

The third theme focuses on challenges and limitations, underscoring that AI integration in higher education is neither linear nor universally beneficial. Participants identified persistent systemic barriers such as limited infrastructure, lack of professional development, and inconsistent institutional policies. These findings are consistent with ((Hazaimeh & Al-Ansi, 2024), who stress that AI adoption heavily depends on institutional readiness and educator competence. Moreover, ethical challenges, including bias, data privacy, and student autonomy, emerged as critical impediments, echoing. ((Malik et al., 2024), who emphasize that ethical safeguards are indispensable for sustainable integration.

This theme reveals that technical robustness alone is insufficient. Instead, AI systems must align with equity, inclusion, and student-centered learning values. Such findings point to a theoretical gap: much of the AI-in-education discourse emphasizes innovation while underplaying the structural inequities that shape adoption. By foregrounding infrastructural and ethical limitations, this study reconstructs the conversation around AI adoption as a systemic, equity-oriented issue, not just a matter of technological novelty. The critical implication is that institutions must prioritize reflective planning and value-sensitive design. Adoption should not be driven by technological determinism but by pedagogical imperatives that safeguard creativity, critical thinking, and fairness. This insight deepens the theoretical framework of AI in education by situating it within critical pedagogy and equity discourse.

Opportunities for Optimization and Pedagogical Transformation

Despite the challenges, the fourth theme underscores significant opportunities for optimization and pedagogical transformation through AI. Participants envisioned AI enabling real-time formative feedback, predictive analytics, and adaptive assessments that can reshape learning trajectories. These possibilities align with findings from ((Hamouche et al., 2025; Opesemowo & Ndlovu, 2024), which highlight AI's potential for personalization and scaffolding. However, participants stressed that such innovation is meaningful only when pedagogically informed and culturally responsive. ((Cooper, 2023) and ((Galindo-Domínguez et al., 2024; Giray et al., 2024) Similarly, they argue that AI must be integrated into broader curriculum innovation strategies rather than introduced as isolated tools.

The data suggest a hybrid future model of AI adoption, one where computational efficiency is combined with educators' nuanced judgment. This resonates with ethical and pedagogical imperatives, positioning AI as a supportive partner rather than a replacement. Moreover, the findings contribute theoretically by proposing AI-human collaboration as a framework for sustainable innovation in education. Such collaboration requires interdisciplinary dialogue among educators, developers, and policymakers to ensure contextual relevance and ethical oversight. This theme, therefore, addresses the research gap concerning how AI can move beyond automation toward transformative, pedagogically aligned integration. It reconstructs the narrative of AI in education from technological substitution to collaborative augmentation, offering an optimistic and critical model.

Taken collectively, the findings make theoretical and practical contributions to the discourse on AI in education. Theoretically, the study demonstrates that AI is not a neutral tool but one embedded with assumptions, values, and power dynamics that must be critically unpacked ((Babanoğlu et al., 2025); (Gouseti et al., 2025). It extends theory by bridging technology adoption

models, equity discourse, and critical pedagogy, illustrating how AI intersects with educator identity, institutional culture, and ethical norms. Pedagogically, the study offers significant implications for teacher education programs (Abdullah & Yusof, 2024; Ahyani et al., 2024). The faculties of education must not only prepare future teachers to use AI but also critically examine and shape its role in assessment. This involves cultivating critical digital literacy, ethical awareness, and inclusive assessment design. The study provides a roadmap for equitable, impactful AI integration that safeguards human judgment and pedagogical creativity while embracing technological possibilities by addressing the gaps between perception, practice, and policy.

Table 3. Summary of Theoretical Analysis and Novelty

Findings	Analysis	Novelty
Faculty use AI for efficiency, timely feedback, and learner tracking	Extends discourse from operational benefits to epistemological implications	Highlights AI's role in reshaping educator identity and assessment philosophy
Optimism about efficiency vs skepticism about opacity and fairness	Reconstructs trust as cultural, institutional, and ethical, not only technical	Bridges' adoption theory with trust and cultural acceptance
Barriers in infrastructure, training, policy, and ethics	Frames AI adoption as systemic and equity-oriented, beyond technical innovation	Reconstructs the discourse around critical pedagogy and equity
Real-time feedback, predictive analytics, adaptive assessments	Proposes hybrid AI-human collaboration as a pedagogical framework	Reorients AI from substitution to collaborative augmentation
AI intersects with human judgment, institutional culture, and ethics	Bridges adoption theory, equity discourse, and critical pedagogy	Provides a roadmap for teacher education programs to foster critical literacy and ethical AI use

Source: Data Analysis by the Researchers, 2025

CONCLUSION

This study explored the application of AI in assessment practices within faculties of education, focusing on current usage, faculty perceptions, implementation challenges, and opportunities for optimization. The findings highlight that AI tools such as Grammarly, Turnitin, ChatGPT, and adaptive platforms are actively used to automate feedback, detect plagiarism, and generate real-time analytics, significantly enhancing efficiency and supporting data-driven assessment practices. At the same time, participants expressed concerns about AI's inability to assess higher-order thinking, the risk of overreliance among students, and unresolved ethical dilemmas related to privacy, transparency, and bias. These mixed perspectives reveal the promise and perils of AI-driven assessment, underscoring the importance of context-sensitive integration. The study shows that while AI can streamline routine tasks and provide valuable analytics, sustainable adoption requires strategies that balance efficiency with pedagogical depth, ethical safeguards, and the preservation of professional judgment.

Despite offering critical insights, this study is limited by its small and discipline-specific sample, the exclusive focus on lecturers and policymakers without including student voices, and the short-term scope of data collection. These constraints limit the generalizability of the findings and prevent a fuller understanding of how demographic variables such as gender, age, and disciplinary background influence AI adoption. Future research should therefore involve broader and more diverse samples across disciplines, include student perspectives, and investigate the long-term effects of AI integration on assessment practices. In addition, further studies should critically

examine AI tool design and institutional readiness to ensure that emerging systems advance fairness, accountability, and inclusive educational practices.

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