Research Article

Analyzing alternative academic assessments (AAAs) in universities with cheat-proofing behaviors and instructor-formulated mechanics in an AI-dependent setting

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ABSTRACT

The rapid advancement of artificial intelligence (AI) has profoundly disrupted the education system, reshaping how knowledge is accessed, delivered, and assessed. Tools such as ChatGPT and other generative AI models have revolutionized academic practices by offering instantaneous information retrieval, personalized tutoring, automated grading, and content creation. This paper investigated the strategies employed by higher education instructors in evaluating student outputs in light of the challenges posed by AI to learners' critical thinking abilities and cognitive development. A total of 22 instructors from higher education institutions in Central Visayas, Philippines, were purposively selected to participate in one-on-one interviews. The findings revealed a profound shift in the academic assessment landscape of higher education due to the use of AI technologies. Instructors expressed heightened concern over academic dishonesty, intellectual disengagement, and over-reliance on AI, fearing that students were bypassing essential cognitive processes and undermining the authenticity of their academic outputs. These concerns prompted instructors to adopt Alternative Assessment Approaches (AAAs) designed to reinforce academic integrity and critical thinking. Key strategies included real-world reflective tasks that demand contextualized knowledge application, scaffolded assignments that track the learning process, timed assessments to limit AI interference, and the use of reflective journals to build metacognitive awareness. The pervasive use of AI challenges traditional assessment methods, prompting educators to adopt more process-oriented, reflective, and context-based strategies that prioritize critical thinking and authentic engagement. Policy reforms may be necessary to guide ethical AI use and ensure assessments continue to serve as valid measures of student understanding and intellectual growth.

Keywords: academic dishonesty; AI dependency; artificial intelligence; learning assessment

1. Introduction

AI refers to the simulation of human intelligence in machines designed to execute tasks typically associated with human cognition, such as reasoning, learning, problem-solving, perception, natural language understanding, and decision-making[1,2]. The advancement of AI in educational contexts has transformed how learning and assessments are conducted, presenting both significant opportunities and notable challenges. In higher education, AI integration has led to the rethinking of conventional assessment practices to safeguard academic integrity and ensure meaningful learning experiences.

This study examines the use of AAAs in AI-reliant educational settings, focusing on essential psychological components like higher-order thinking, the prevalence of cheating behaviors, and stress management. These elements stress the importance of developing innovative assessment strategies that promote meaningful student engagement while adhering to the principles of fairness and rigor.

Higher-order thinking, which involves skills such as analysis, evaluation, and creation, is increasingly emphasized in contemporary assessments processes[3]. Traditional assessments based on memorization are gradually being replaced by application-based evaluations requiring students to engage in critical and creative problem-solving[4].

However, creating assessments that challenge students' intellectual capacities while reducing reliance on AI tools poses a persistent difficulty for educators. A growing body of research has focused on developing approaches to mitigate the inappropriate use of ChatGPT while maintaining the standards of academic integrity. Cotton et al.[5] recommended that instructors evaluate students' understanding through a combination of automated tools and manual assessment techniques, alongside clearly articulated assignment guidelines and the use of structured rubrics. Similarly, Plata et al.[6] believed on the importance of cultivating students' awareness of academic integrity, emphasizing the ethical use of AI, strategies to avoid academic misconduct, and the potential consequences of dishonest practices. Furthermore, Sullivan et al.[7] explored pedagogical adjustments such as redesigning assignments to render them incompatible with AI-generated solutions. Their study also outlined specific conditions under which students may face academic penalties for unauthorized use of ChatGPT and other AI tools.

Consequently, the study drawn attention to the increasing occurrence of cheating behaviors facilitated by AI tools, which undermine academic honesty and authentic learning experiences. These behaviors reflect psychological tendencies in which students prioritize convenience over ethical practices and genuine engagement with course material[8]. Academic misconduct manifests in several ways, including plagiarism, inappropriate collaboration, test cheating, copyright violations, complicity, data fabrication, and falsification of bibliographic references[9,10].

This paper was expected to shed light on different AAAs that higher education instructors adopt to mitigate AI dependency among college students. As generative AI tools like ChatGPT become more accessible and sophisticated, there is an urgent need to explore and institutionalize alternative strategies that promote authentic learning and uphold academic integrity.

2. Literature review

Recent advancements in AI, particularly the emergence of Large Language Models like ChatGPT, have significantly influenced various sectors of society, including the education system[11,12]. The field of AI in Education (AIED) has seen rapid progress, with increasing focus on applications such as intelligent tutoring systems, automated assessment, and sentiment analysis[13,14]. These technological innovations present

substantial opportunities to enhance the effectiveness, accessibility, and personalization of educational processes[13,15], holding promise to reshape the future of learning environments.

Despite the potential of AIED in societal development, its adoption of emerging technologies has historically lagged behind fields like scientific research and healthcare[16]. The effectiveness of AI integration in education depends largely on educators' readiness to align technology use with appropriate instructional strategies[17]. AI has demonstrated the ability to replicate and surpass human decision-making through computational and mathematical precision[18]. However, concerns have emerged about whether AI developments, especially in education, align with ethical considerations and adequately address human needs and environmental sustainability[19-21]. Investigating the evolution of AI and its pedagogical implications is therefore essential for informing the design of innovative teaching methodologies and learning resources that address emerging educational demands.

Upholding academic integrity is essential for higher education institutions, as it safeguards the legitimacy of academic qualifications and ensures the trustworthiness of scholarly endeavors[22]. It requires that faculty members, students, and researchers adhere to established ethical standards and professional principles in all facets of teaching, research, and academic engagement[23]. Essentially, this commitment builds a culture of respect for intellectual property while striving for academic excellence.

However, the advent of AI tools such as ChatGPT has introduced new challenges, as these technologies can facilitate academic misconduct and compromise the authenticity of student work. Their misuse undermines the educational mission and diminishes the value of honest academic effort[24]. Furthermore, these tools may give rise to novel forms of academic dishonesty that are particularly difficult to detect or substantiate[5].

Studies have shown that ChatGPT is capable of producing sophisticated responses that closely resemble student-authored submissions, making it difficult to differentiate between human and machine-generated content[25]. This has raised concerns among educators, who fear students may increasingly rely on such tools for composing assignments[26,27]. Empirical evidence has demonstrated that ChatGPT can generate comprehensive outputs within seconds that evade traditional plagiarism detection systems. For instance, Talan and Kalinkara[28] conducted a study involving a 40-item multiple-choice test in an anatomy course at a Turkish state university, revealing that ChatGPT outperformed undergraduate students. These findings underscore the urgent need for educational institutions to reevaluate existing assessment strategies and revise academic policies to address the ethical implications and evolving risks posed by AI-assisted academic misconduct[29,30].

Higher-order thinking involves advanced cognitive skills such as analysis, evaluation, and creative problem-solving. Evaluation instruments designed for this purpose help students think critically, solve complex problems, and apply knowledge to real-world contexts[31]. However, many existing evaluation tools and methods fail to encourage higher-level thinking, focusing instead on factual knowledge and conceptual understanding. This often neglects essential skills necessary for meaningful learning and life-long development[32].

This paper explored some AAAs in higher education amidst the threat of AI in cognitive, intellectual, and academic development of students. Evangelista[22] suggested that teachers may integrate oral assessments that allow students to show critical thinking and analytical reasoning during direct, in-person interactions. For instance, students in science disciplines may be asked to elucidate experimental procedures, while those in literature courses might be tasked with evaluating and critiquing thematic elements of literary texts. To ensure fairness and reliability in assessment, faculty members are encouraged to utilize standardized rubrics

and engage in professional development sessions aimed at enhancing their ability to formulate effective oral examination prompts[33]. Given the recency of this problem, there is still a need for in-depth understanding of the problem and how to adopt to it. hence, this paper aims to broaden the understanding of various strategies that may effectively reduce students' dependency on AI tools. It seeks to explore how these strategies can cultivate learners' metacognitive awareness and critical reasoning.

3. Methods

3.1. Research design

This paper explored different AAAs in higher education amidst the threat of AI in teaching and learning process. Exploratory research design is highly effective framework for investigating novel issues and understanding phenomena that remain insufficiently examined in the literature[34-36]. This utilizes deliberate and systematic strategies to uncover patterns, which help in the analysis of sociocultural and psychological constructs[37]. Although some have critiqued exploratory design for its lack of methodological rigor, contemporary scholarly discourse increasingly underscores its contribution to deepening the understanding of social problems and to the systematic collection of narrative data[38]. A primary advantage of exploratory research lies in its flexibility, which allows changes in response to evolving datasets. This mechanism is an imperative attribute when engaging with subjects that have garnered limited empirical investigation[36]. With qualitative exploration, this paper answered one critical question: how higher education teachers assess students' learning in the midst of intensive AI reliance among students?

3.2. Population and sampling

Exploratory research typically employs small, often purposively selected samples to facilitate an in-depth examination of essential variables and the relationships among them[39]. Instead of seeking results that apply to a larger population, this approach focuses on gaining a deeper understanding by studying a specific group whose experiences and insights are essential to understanding the issue being explored[36]. The determination of sample size remains flexible and is primarily guided by the participants' capacity to offer substantive and relevant insights that align with the study's objectives[40]. A predominant sampling strategy employed in this context is purposive sampling[41], wherein individuals are intentionally chosen through a structured and criterion-based selection process[42,43]. In the present study, an online purposive sampling technique was conducted[44], wherein Google Forms served as the digital platform for distributing open-ended questions to elicit preliminary qualitative insights. Five major sample characteristics were considered: (1) a higher education teacher, (2) adapt AAAs in classroom, (3) received training for responsible AI use, (4) encountered instances of students using AI to cheat, and (5) willingness to participate in one-on-one interviews. Out of 126 higher education teachers who responded to the sampling process, only 22 participants were selected to be interviewed. **Table 1** presents the summary of the interviewed participants.

Table 1. Summary information of the sampled interview participants.

Pseudonym	Sex	Age	Subject Taught	Years in Service
Anna	Female	35	English	10
Brian	Male	42	Political Science	16
Carla	Female	29	Science	6
David	Male	39	Engineering	14
Ella	Female	33	Literature	9
Frank	Male	46	Science	20

Pseudonym	Sex	Age	Subject Taught	Years in Service
Grace	Female	31	English	8
Henry	Male	28	Engineering	4
Ivy	Female	37	Political Science	13
Jake	Male	34	Literature	11
Karen	Female	41	Science	17
Liam	Male	30	English	7
Mia	Female	45	Political Science	19
Nathan	Male	36	Engineering	12
Olivia	Female	32	Literature	8
Paul	Male	38	Science	13
Queenie	Female	29	English	5
Ryan	Male	44	Political Science	18
Sophia	Female	27	Science	3
Tom	Male	40	Engineering	15
Ursula	Female	35	Literature	10
Victor	Male	33	English	9

Table 1. (*Continued*)

3.3. Instrumentation

This study developed semi-structured interviews questions to elicit the responses from the participants. It builds a system with flexibility to facilitate a structured yet responsive inquiry process[45,46]. The development of the interview guide was guided by the framework advanced by Kallio et al.[47], involving essential stages such as establishing prerequisites, synthesizing existing literature, formulating preliminary questions, conducting pilot testing, and refining items based on constructive feedback from experts. Probing questions were designed to move beyond surface-level responses and explore the participants' lived experiences, underlying values, and personal perspectives[48]. Expert validation was undertaken to ensure conceptual coherence, alignment with the objectives, and adherence to methodological rigor[49]. In addition, pilot testing helped in evaluating the clarity, relevance, and efficacy of the interview questions in generating substantive responses[50]. Following expert review and pilot testing, the finalized interview guide is presented in **Table 2**.

Table 2. Final interview guide questions.

Objectives	Interview questions
Determine worldview on academic assessments in the era of AI.	1. What are your observations on the reactions of higher education teachers in terms of academic assessments in the age of Artificial Intelligence? Explain more. 2. What are the challenges experienced by higher education teachers in terms of assessing students in higher education? Explain each challenge. 3. What has changed in the instructors' behavior in terms of ensuring the integrity of academic assessments? Explain each change of behavior.
Determine AAAs of higher education teachers with cheat-proofing behaviors and mechanics in an AI setting.	1. What are the specific cheat-proofing behaviors of teachers in higher education to ensure the quality of academic assessments? Explain each behavior. 2. What mechanics do you implement to make sure the AAA will surely assess the learners' academic performance? Explain further. 3. How do you feel about the difficulty of instituting AAA in the age of shrewd artificial intelligence tools? Explain your insights.

3.4. Data collection

The interviews were designed to elucidate participants' lived experiences through a methodological approach that balances structured guidance with flexibility[51]. Given the exploratory nature of this study, semi-structured interviews were employed to uphold methodological rigor while facilitating natural, in-depth discourse that yielded richer narrative insights[52]. The procedure started with establishment of research objectives, the formulation of thematically anchored questions, and the synthesis of pertinent scholarly literature to establish a rigorous foundation for inquiry[53]. In addition, the interviews adhered to a structured protocol including dissemination of informed consent, ethical compliance, assurances of confidentiality, and systematic questioning procedures[54]. During the interview process, a confidential and supportive interview environment was intentionally cultivated to encourage participants' uninhibited self-expression[55]. Participants were also permitted to use their preferred language, which minimized potential linguistic barriers that could hinder the articulation of their experiences[56]. Employing probing techniques enabled the extraction of important meanings and the enrichment of participant narratives[53]. With participant consent, interviews were audio-recorded using secure mobile devices, and essential themes alongside preliminary analytic notes were systematically documented in Microsoft Excel.

3.5. Data analysis

This study employed reflexive thematic analysis as the principal analytical method to systematically interpret narrative data from one-on-one interviews. This helped to identify patterns and emergent themes that reflect participants' lived experiences. Thematic analysis, in its essence, involves the organization, categorization, and interpretation of qualitative data[57]. Its inherent flexibility renders it particularly appropriate for exploratory research, wherein thematic development is data-driven and not constrained by pre-existing theoretical constructs[58].
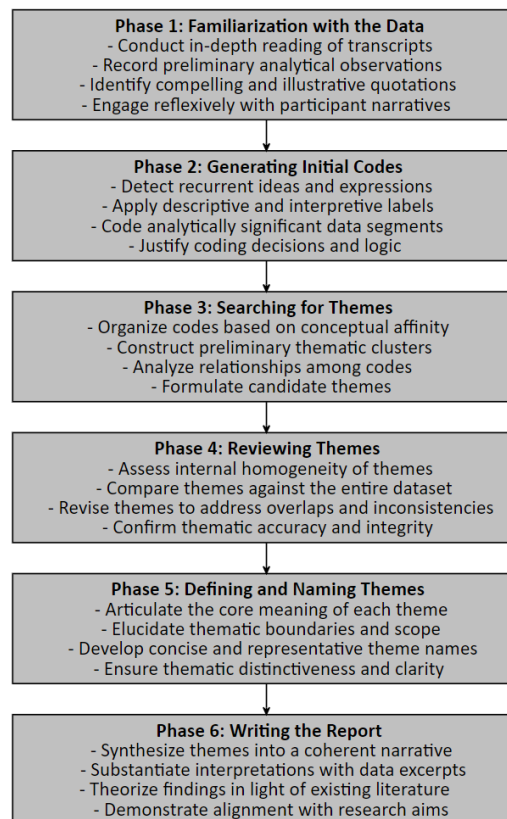

Phase 1: Familiarization with the Data
- Conduct in-depth reading of transcripts
- Record preliminary analytical observations
- Identify compelling and illustrative quotations
- Engage reflexively with participant narratives

Phase 2: Generating Initial Codes
- Detect recurrent ideas and expressions
- Apply descriptive and interpretive labels
- Code analytically significant data segments
- Justify coding decisions and logic

Phase 3: Searching for Themes
- Organize codes based on conceptual affinity
- Construct preliminary thematic clusters
- Analyze relationships among codes
- Formulate candidate themes

Phase 4: Reviewing Themes
- Assess internal homogeneity of themes
- Compare themes against the entire dataset
- Revise themes to address overlaps and inconsistencies
- Confirm thematic accuracy and integrity

Phase 5: Defining and Naming Themes
- Articulate the core meaning of each theme
- Elucidate thematic boundaries and scope
- Develop concise and representative theme names
- Ensure thematic distinctiveness and clarity

Phase 6: Writing the Report
- Synthesize themes into a coherent narrative
- Substantiate interpretations with data excerpts
- Theorize findings in light of existing literature
- Demonstrate alignment with research aims

Figure 1. Workflow of the data analysis process.

As illustrated in **Figure 1**, the analysis adhered to the six-phase procedural model articulated by Braun and Clarke[59], comprising data familiarization, initial coding, theme generation, theme refinement, definition and naming, and the production of the final report. Throughout the process, inductive method was adopted to ensure minimal imposition of researcher assumptions to maintain fidelity and enhance the credibility and validity of the study's findings[60]. In addition, reflexivity was an important component of the analytic process, where researchers maintained critical awareness of their own positionalities and potential biases. Rather than viewing subjectivity as a methodological limitation, it was actively acknowledged and utilized to enrich interpretive depth[61,62].

4. Results

Objective 1: Determine worldview on academic assessments in the era of AI.

Theme 1: Academic Dishonesty

Higher education instructors held serious apprehensions about the implications of AI technologies in compromising academic integrity. Their perception on doing assessments in the AI era reflected heightened vigilance, as tools like ChatGPT were perceived not merely as aids but as potential enablers of dishonest behavior. The instructors acknowledged that these tools could be misused by students to bypass genuine academic effort undermining the credibility of assessment outcomes.

> "Some instructors express strong concerns about the potential for AI-driven cheating, particularly with tools like ChatGPT and other automated writing aids."

For example, instructors demonstrated concern about a shift in students' learning behaviors, particularly a decline in authentic intellectual engagement due to AI use. The possibility that students could rely on generative AI to complete academic tasks without understanding the underlying concepts suggested a weakening of assessments as tools for measuring learning. This perception emphasized that the instructors valued not only the product of learning but also the process, which they feared was being circumvented.

> "I worry that students might use AI to complete assignments or exams without genuinely engaging with the material."

> "AI tools have made it incredibly easy for students to generate entire essays or solve problems in seconds. It's becoming harder to tell if their work is truly their own."

The submission of nearly identical responses by different students was perceived as evidence of unauthorized AI use. Such occurrences were interpreted as a breach of academic ethics and fairness, revealing a worldview in which AI was seen not just as a challenge to individual integrity, but as a broader threat to the equity and validity of academic assessments.

> "I've had cases where multiple students submitted nearly identical responses. Clearly, it's AI-generated, and it undermines the fairness of the assessment process."

Instructors expressed concern that conventional plagiarism detection software was insufficient in identifying AI-authored work, thereby allowing dishonest practices to go undetected. This led to a worldview where assessments were viewed as increasingly vulnerable and outdated in the face of evolving AI capabilities, emphasizing the need for revised strategies to safeguard academic honesty.

> "Even with plagiarism detectors, AI-generated content can be hard to flag, making it easier for dishonest practices to slip through unnoticed."

Theme 2: Lack of Intellectual Engagement

Some instructors expressed concern that the presence of AI tools had contributed to a diminished level of critical engagement among students with the academic material. While assessments traditionally aimed to have in-depth analysis and understanding, quick responses from AI risked reducing students' motivation to think critically and interact meaningfully with course content.

> "I worry more about the loss of critical engagement with the course content."

> "I've noticed a decline in original thought. When I read some submissions, they sound too polished, too generic. It makes me question whether the student actually wrote it or just prompted an AI."

The instructor acknowledged the intended role of technology as a facilitator of deeper learning but observed that, in practice, some students increasingly depended on AI to circumvent the cognitive effort required to truly understand the material. This reliance was perceived not merely as a pedagogical challenge but as an ethical issue that undermined academic integrity and the core educational objective of encouraging independent knowledge construction.

> "While technology should enhance learning, I feel like some students now rely on it to bypass the actual process of learning. It's a growing ethical dilemma in my classroom."

Some believed that students' perceptions of AI had shifted toward viewing it primarily as a means to expedite task completion rather than as a resource for augmenting intellectual engagement. This mindset was particularly troubling within disciplines that demand rigorous critical thinking, as it diminished the development of essential analytical skills. For them, the misuse of AI threatened to erode the cognitive rigor traditionally cultivated through academic assessments.

> "Students are starting to treat AI like a shortcut, not a tool for deepening understanding. That's alarming for subjects that require critical reasoning."

Lastly, the instructors observed a decline in students' intrinsic curiosity and active participation, attributing this trend to extensive AI use that preempted inquiry and dialogue. This reduction in questioning and engagement was understood to weaken the interactive and exploratory dimensions of learning, which are vital to intellectual growth and meaningful assessment.

> "There's a visible drop in curiosity. Fewer students are asking questions or engaging in discussions because they've already use AI on everything."

Theme 3: Over-reliance

A significant number of students increasingly bypassed the essential cognitive struggle involved in problem-solving by directly consulting AI tools for answers. This behavior indicated a shift away from active learning processes toward passive consumption of solutions, which impeded the development of true mastery. For instructors, this pattern undermined the fundamental pedagogical principle that grappling with challenges fosters deeper understanding and skill acquisition.

> "Some students won't even attempt to solve a problem on their own anymore. They go straight to AI for answers, skipping the struggle that builds mastery."

> "Instead of using AI to support their learning, students often let it replace their thinking entirely. That's not learning—it's outsourcing."

Some were concerned regarding the long-term implications of AI reliance on students' intellectual autonomy. The instructor feared that the prevailing educational environment was cultivating dependence on technology at the expense of nurturing critical faculties such as reasoning, independent thought, and self-reflection.

> "I fear we're training a generation to depend more on machines than their own capacity to think, reason, and reflect."

Lastly, AI served as a psychological and academic crutch that diminished students' self-efficacy and confidence in their intellectual capabilities. The habitual default to AI assistance prevented learners from developing autonomous skills and resilience, critical to academic success and personal growth.

> "AI has become a crutch for many learners. They don't build confidence in their own skills because they default to asking a chatbot for everything."

Objective 2: Determine AAAs of higher education teachers with cheat-proofing behaviors and mechanics in an AI setting.

Theme 1: Real-world Reflection

The instructor reported a pedagogical shift motivated by apprehensions about maintaining academic integrity in the AI era. They moved away from conventional high-stakes examinations, recognizing these as more vulnerable to dishonest practices facilitated by AI. Instead, the educator emphasized the use of active, formative assessments that engaged students in ongoing demonstrations of their understanding. This approach aimed to create continuous opportunities for feedback and reflection, thus discouraging cheating by embedding accountability throughout the learning process.

> "One change I've made in response to concerns about academic integrity is to move away from traditional high-stakes exams and instead focus more on active, formative assessments that require students to demonstrate their learning."

They mentioned a deliberate redesign of assessment tasks to prioritize higher-order cognitive skills over rote memorization. They incorporated real-world applications within assignments to compel students to contextualize theoretical knowledge meaningfully. This approach sought to limit the efficacy of AI tools that excel at retrieving information but struggle with nuanced reasoning and creativity.

> "Rather than relying on assessments that simply test factual recall, I design assignments and exams that challenge students to apply knowledge in real-world contexts and demonstrate critical thinking and problem-solving abilities."

Theme 2: Scaffolding

Some reported implementing a scaffolded assessment approach that encouraged continuous student engagement with their work. This approach enabled students to submit drafts and receive constructive feedback, which builds a learning process focused on continuous improvement and enhanced comprehension. This strategy was designed to reduce the likelihood of students relying solely on AI-generated final products.

> "I often design assessments with the idea that students can submit drafts, receive feedback, and revise their work before final submission."

The instructor restructured assessments into clearly defined stages that required students to explicitly demonstrate their cognitive process, including the creation of outlines, drafts, and reflective notes. This design allowed the educator to engage more intimately with students' intellectual journeys and provide targeted guidance throughout their work.

> "I structure assessments in stages now, where students have to show their thinking process. It allows me to take part in making outlines, drafts, reflections."

Breaking larger tasks into smaller, manageable components became an increasingly vital strategy employed by the instructor to maintain the integrity of student submissions. This segmentation ensured that students were required to progressively reveal their developmental process, which limits the possibility of submitting AI-generated final outputs without genuine engagement. The scaffolded approach promoted sustained interaction with the material and facilitated ongoing assessment of student understanding.

> "Breaking tasks into smaller components has become even more important. It helps ensure students aren't just submitting AI-generated final outputs without showing their developmental process."

> "I've started including checkpoints within larger assignments so I can monitor how students are building their ideas over time, not just what they submit at the end."

Theme 3: Timed Assessments

One of the primary motivations for employing timed assessments, whether administered in-class or as take-home tasks, was to promote focused cognitive engagement and efficiency among students. Having time limits helped them to create an environment that required learners to concentrate intensely and manage their time effectively. This approach was believed to encourage disciplined thinking, minimizing distractions and encouraging students to organize their responses coherently within the allotted period.

> "One of the primary reasons I use timed assessments—whether in-class or take-home—is to encourage focused thinking and efficiency."

Timed assessments were applied consistently across both in-class and take-home formats to stimulate critical thinking within constrained durations. The imposition of strict time constraints was intended to compel students to engage deeply and thoughtfully with the material.

> "I use timed assessments for both in-class and take-home assignments. Time constraints encourage students to focus and think critically under pressure, reducing the likelihood that they will have time to engage in dishonest behavior."

> "With AI tools so readily available, timed assessments help ensure that responses are more likely to reflect a student's own understanding in real time."

Similarly, modified traditional quiz formats to incorporate strict time boundaries to prevent students from depending on AI to complete their work. This adaptation was designed to compel learners to swiftly and accurately apply concepts without the opportunity to outsource their thinking processes to external technologies.

> "I've adapted my quizzes to be time-bound so students can't simply rely on AI. This ensures that they have to apply concepts quickly and accurately."

Theme 4: Reflective Journal

The instructors encouraged students to maintain reflective journals throughout the semester as a deliberate pedagogical strategy. This practice enabled students to systematically document their learning experiences, monitor their progress, and critically evaluate the challenges they faced during the course.

> "In my courses, I encourage students to maintain reflective journals throughout the semester. This helps them track their own progress, articulate their learning process, and reflect on the challenges they've encountered."

The educator posited that reflective journaling, when practiced consistently and with intellectual sincerity, extended beyond a mere assessment technique to become a foundational practice for lifelong learning. The instructor highlighted that such habitual reflection cultivated essential skills including self-regulation, critical thinking, and emotional resilience. These attributes were considered vital not only for academic success but also for professional and personal growth.

> "Reflective journaling, when done consistently and thoughtfully, is not just a way to assess students; it's a way to build lifelong learning habits."

> "When we encourage students to regularly reflect on their learning, track their progress, and revise their work, we help them build the kind of self-awareness, resilience, and intellectual curiosity that will serve them well beyond the classroom."

5. Discussion

The integration of AI into academic environments has created notable challenges in preserving academic integrity while promoting meaningful learning. Tools like automated grammar checkers and AI-based content generators provide substantial support to students in completing writing tasks but simultaneously raise concerns regarding potential misuse, plagiarism, and the undermining of academic honesty[63-65].

This study highlighted educators' growing apprehensions about AI-facilitated academic misconduct. This could compromise the authenticity of academic output and hinder students' engagement with learning materials. Studies[65,66] warned about how AI can limit students' critical thinking by providing immediate answers and ready-made solutions that reduce the need for deep cognitive engagement with learning materials. One instructor believed that in the age of AI, *"students are starting to treat [it] like a shortcut, not a tool for deepening understanding. That's alarming for subjects that require critical reasoning."* This perception aligns with broader concerns that overdependence on AI may diminish students' ability to analyze, evaluate, and synthesize information independently weakening their capacity for problem-solving and original thought.

In the study of Abarzosa and Balaba[67] among technology-based courses, AI tools such as code generators and debuggers enhance learning efficiency, but excessive reliance on them may impede the development of critical thinking, ethical awareness, and core programming skills. Findings revealed that while AI tools enable faster task completion, they may also diminish students' cognitive engagement. Similarly, even in social sciences subjects, AI-generated outputs often led to superficial engagement with course concepts, as students tended to rely on pre-structured responses rather than formulating their own analytical insights. This overdependence risked undermining the depth of inquiry, personal reflection, and contextual understanding that social science education seeks to cultivate.

To address the issue on academic dishonesty, instructors have adopted strategies such as real-world reflection, scaffolding, timed assessments, and journaling. These practices promote accountability, minimize opportunities for dishonesty, and encourage deeper cognitive engagement with course content.

For example, during online learning, timed assessment worked well because it minimized the chances of academic dishonesty by limiting the time students had to consult unauthorized resources[68]. This strategy

also works well in the age of AI because it encouraged students to rely on their own knowledge and understanding rather than external aids. One instructor explained that time assessments *"encourage students to focus and think critically under pressure, reducing the likelihood that they will have time to engage in dishonest behavior."* Instructors found that time constraints promoted focused thinking and quick recall, which are essential components of mastery.

Some also applied journaling throughout the semester to limit students' tendency to seek assistance from AI tools. For Dinç, Wherley and Sankey[69], journaling integrated learning, emotions, and planning, and it functioned as a retrospective tool that reinforced learning. Likewise, higher education instructors believed that such approach could also work in AI-dependent settings where students *"build the kind of self-awareness, resilience, and intellectual curiosity that will serve them well beyond the classroom."* Reflective journaling encouraged learners to document their thought processes, making it easier for instructors to trace authentic cognitive development rather than AI-generated content. It provided a continuous space for metacognitive practice, helping students internalize learning goals and critically evaluate their progress over time[70].

In education, higher order thinking skills are necessary for preparing students to meet the demands of the workplaces, placing teachers at the forefront of cultivating high-level competencies[71]. Effective implementation of higher-order thinking requires a holistic approach that involves all stakeholders in education, especially with curriculum development as the foundation for meaningful and impactful learning[72]. The findings indicate that traditional memorization-based assessments are insufficient in an AI-dominated academic landscape. Instead, instructors are shifting toward application-based evaluations that replicate real-world problem-solving scenarios. They emphasized that these assessments compel students to apply theoretical knowledge to practical challenges, thereby reducing dependency on AI for superficial solutions. Nonetheless, designing equitable assessments for diverse learners remains a demanding task, requiring instructors to incorporate inclusive practices that reflect students' varied backgrounds and experiences[73].

Issues such as data bias, fairness, and transparency in AI-based educational applications must be critically examined[74,75]. While AI can enhance higher education's programming and delivery, there is a risk of misuse due to flawed logic or inappropriate application of data-driven insights. To effectively address the challenges posed by AI integration in academic settings, institutions must prioritize instructional strategies that promote authentic learning and academic integrity.

Educators should be encouraged to adopt scaffolded assessments, reflective journaling, and application-based evaluations that emphasize the learning process over the final output. These practices not only minimize opportunities for academic dishonesty but also build metacognition, critical thinking, and independent reasoning.

Institutions should invest in faculty development programs that train instructors in AI-aware pedagogical approaches, ensuring they are equipped to design assessments that challenge students intellectually while reducing their reliance on AI-generated content. Encouraging the use of formative assessments and individualized feedback mechanisms can further support meaningful student engagement and help detect inconsistencies in student work that may indicate misuse of AI tools.

6. Conclusion

This paper analyzed the experiences of higher education instructors amidst the rise of AI tools. The findings revealed that higher education instructors viewed academic assessments in the AI era with growing

apprehension due to rising instances of academic dishonesty, lack of intellectual engagement, and over-reliance on AI tools. Instructors expressed concern that generative AI technologies were being misused by students to bypass genuine learning, leading to a decline in academic integrity and critical engagement. They observed that students often submitted AI-generated responses, demonstrated reduced curiosity, and avoided the cognitive struggles essential for deep learning.

In response, instructors adopted AAAs to uphold academic honesty and encourage meaningful learning. These included shifting to real-world, application-based tasks and designing scaffolded assessments that encouraged continuous engagement through drafts and feedback, timed assessments to promote real-time cognitive engagement, and reflective journaling as a tool to document learning processes, build self-awareness, and develop lifelong learning habits. As AI tools become more embedded in student learning, there is a clear risk of undermining academic integrity and critical thinking if left unchecked. Institutions must build a culture of genuine learning by implementing instructional strategies that emphasize cognitive engagement, ethical reasoning, and reflective practices.

There were limitations that needed to be addressed by future researchers. First, the sample size was relatively small and limited to instructors from select institutions, which may restrict the generalizability of the findings to broader educational contexts. Although the insights obtained were valuable and in-depth, the use of purposive sampling and qualitative one-on-one interviews limited the findings to the views of a particular group of educators, which may have been shaped by their institutional context, academic discipline, and teaching approach. Although the data quality was ensured through in-depth interviews and thematic rigor, broader patterns across diverse educational settings, disciplines, and student populations remain unexplored. Also, self-reported data may be subject to social desirability bias, as participants may have portrayed their teaching practices or views on AI integration in a more favorable light. Future research should consider mixed-methods approaches and larger, more diverse samples to enhance the generalizability and validity of the findings. Longitudinal studies may also be valuable in capturing how instructors and students adapt to AI integration over time, including evolving pedagogical practices and shifts in academic behavior.

Conflict of interest

The authors declare no conflict of interest.

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