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Exploring Assessment Adaptation Strategies for Authentic Student Evaluation in the Age of Generative AI: Insights from Educators at an Online School

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Research report submitted in partial fulfillment of the requirements for the Masters In Education degree at the School of Education, the Faculty of Humanities at the University of the Witwatersrand, Johannesburg, South Africa.

Exploring Assessment Adaptation Strategies for Authentic Student Evaluation in the Age of Generative AI: Insights from Educators at an Online School

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ABSTRACT

The rapid integration of generative AI into digital learning environments has challenged traditional assessment models, raising concerns about assessment authenticity and validity. This study explores how online educators perceive and adapt assessment strategies to uphold authentic student evaluation in AI-influenced learning contexts. Grounded in Validity Theory (Messick, 1995), Authentic Assessment Theory (Wiggins, 1990), and Situated Cognition Theory (Brown, Collins & Duguid, 1989), the study examines the tensions between AI's impact on assessment integrity and the need for adaptive, process-driven evaluation strategies. Employing a qualitative, interpretivist case study design, this study investigates the perspectives of educators in a South African fully online school. Semi-structured interviews and survey data were thematically analyzed to capture nuanced educator responses.

Findings reveal that educators widely perceive AI as a threat to traditional assessment validity, particularly in text-based, output-focused assessments. Language educators tend to adopt restrictive strategies such as AI detection tools and platform limitations, whereas STEM educators favor process-driven adaptations that emphasize reasoning, iterative work, and step-by-step demonstration. Despite broad recognition that restriction alone is unsustainable, adaptation remains highly inconsistent across subjects, constrained by curriculum mandates, institutional policies, and limited AI literacy training. The study highlights four key adaptation strategies. First, shifting from product to process-based assessment reinforces construct validity by focusing on cognitive engagement rather than final outputs. Second, personalized and contextualized tasks require real-world data collection or unique student inputs to mitigate AI-generated responses. Third, oral and multimodal assessments, though underutilized, offer AI-resilient alternatives to traditional text-based evaluations. Finally, structured AI integration moves beyond restriction toward scaffolded AI use in assessment to develop digital literacy and critical engagement.

Ultimately, this study concludes that authentic assessment in AI-influenced education is not about restricting AI, but about redesigning assessments. To uphold fairness, validity, and educational integrity, institutions must provide clear policy guidance, AI literacy training, and research-informed adaptation frameworks. As AI reshapes knowledge creation and learning processes, assessment practices must evolve to maintain their credibility and relevance in digital learning environments.

Keywords: Generative AI, online education, assessment adaptation, authentic assessment, assessment reform.

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DEDICATION

This report and process is dedicated to all those who walked this path before me with less privilege, resources and support, but more responsibility. What an incredible feat you have achieved in the name of learning, knowledge and self-preservation.

DECLARATION AND AI USE ACKNOWLEDGEMENT

I, Cayla Amy du Toit, declare that this Research Report titled, *"Exploring Assessment Adaptation Strategies for Authentic Student Evaluation in the Age of Generative AI: Insights from Educators at an Online School"* is my own original work. It is being submitted for the Degree of Masters in Education at the University of the Witwatersrand, Johannesburg, and has not been submitted before for any degree or examination at this or any other University. This report contains no previously written material, to the best of my knowledge and belief. Citations are used, when necessary, in both the text and the bibliography.

I also hereby transparently acknowledge that I have used a variety of AI technologies, to the best of my ability and competence as a collaborator in my workflow throughout this entire report. This includes research AIs, analytical AIs, PDF processing tools, writing assistants, and text-generation models. The tools were used as genuine collaborators, following a cyclical feedback loop of prompt engineering where responses were continuously refined, reprompted, and built upon (Perkins et al., 2024).

I critically engaged with all AI-generated outputs. Every output was fact-checked, critically proofread and aligned with my own narrative and objectives to the best of my ability. At no point did I use these technologies as a substitute for my own effort or cognitive engagement - I actively processed and synthesized, with AI as a collaborator, all information in this construction of my understanding. **I stand fully behind the entirety of this report - every argument, interpretation, and construction - as my own authentic effort and understanding**.

Signature: Date: 13/03/2025



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CHAPTER 1: INTRODUCTION

1.0 Introduction

The landscape of education has been and continues to be transformed by the integration of technology (Cornu, 1995). From the introduction of personal computers in classrooms to the widespread adoption of learning management systems, technological advancements have fundamentally altered teaching and learning, expanding accessibility and creating new opportunities for engagement (Cornu, 1995). For instance, digital platforms and assistive technologies have enabled students with disabilities to access learning materials more easily, while online learning environments have allowed geographically dispersed learners to participate in education without physical constraints. However, these changes have also necessitated continuous pedagogical adaptation, as evolving digital tools reshape the ways in which knowledge is shared, delivered, and assessed (Rahman, Novitasari, Handrianto & Rasool, 2022).

As technology and communication systems advance, they continue to drive shifts in pedagogy, enabling greater flexibility in how education is accessed and delivered. One of the more significant shifts as a result of this has been the growing push toward online education, which is both necessitated and accelerated by global trends, including increased global human mobility and international knowledge sharing as well as crises such as pandemics and displacement (Rahman et al., 2022). With this, online education is no longer viewed as a supplementary or alternative mode of learning, but rather as a critical component of global education systems. Its ability to transcend geographical barriers and provide asynchronous access to quality instruction has positioned it as a key driver of educational transformation.

Despite these shifts, one element of pedagogy that has largely remained constant is the reliance on assessment as a fundamental mechanism for measuring student learning and shaping educational outcomes (Dikli, 2003; Ramos & Castillo, 2024). Assessments play a central role in informing pedagogy, guiding instructional decisions, and validating academic achievement. While the modes of content delivery and student engagement have evolved, many traditional assessments - such as essays - have remained widely accepted as credible measures of student understanding in both face-to-face and online environments. This enduring relevance is rooted in their ability to evaluate complex cognitive processes, making them a widespread cornerstone of academic evaluation in these contexts (Ogunleye, Zakariyyah, Ajao, Olayinka & Sharma, 2024).

However, the landscape of assessment has been profoundly disrupted by the emergence of artificial intelligence (AI). While AI is not new to education, tools that were previously confined to specialized fields or required advanced technical expertise are now widely and freely available, requiring minimal skill and resources to access and operate competently (Khan, Hasan, Islam & Udin, 2024). Generative AI tools, in particular, have demonstrated the ability to produce complex, contextually appropriate written content that mimics human reasoning and outputs, making them highly effective for knowledge retrieval, collaboration, and content generation (Perkins, Furze, Roe & MacVaugh, 2024). While this holds significant promise for enhancing

learning - by personalizing educational experiences and tailoring content to students' needs (Hew, Huang, Du & Jia, 2023) - it simultaneously presents new challenges for pedagogy and assessment (Smolansky, Zeivots, Cram, Huber, Raduescu & Kizilcec, 2023; Mills, Bali & Eaton, 2023). That is, the same capabilities that make AI a powerful learning collaborator also disrupt long established assessment practices as students can now produce sophisticated outputs with little to no cognitive effort (Ifelebuegu, 2023) and then submit it as their own understanding. This disruption is particularly problematic for those assessments that have remained largely unchanged in the move to online education as educators in these contexts cannot rely on in-person synchronous invigilation as a security measure to verify whether assessments genuinely reflect a student's individual understanding (Kearns, 2012; Smolansky et al., 2023) and remain valid measures of learning.

AI tools have disrupted traditional assessment methods, raising concerns about their ability to measure authentic student learning. In response, there is a growing global need for adaptive assessment strategies that preserve the credibility and accuracy of student evaluations in the face of AI's influence (Mills et al., 2023). Academic institutions, educational policymakers, and regulatory bodies worldwide are increasingly aware of the need for assessment strategies that can effectively contend with the sophisticated capabilities of AI (Mills et al., 2023) and ultimately ensure that assessments continue to measure authentic student learning, rather than students' ability to effectively use AI tools to produce the required outputs. However, despite the widespread recognition of these challenges, there remains a significant gap in research specifically focused on addressing the impacts of generative AI on assessment integrity and what assessment strategies can be employed to aid the situation (Smolansky et al., 2023). There is then a critical need for research that explores effective strategies to ensure that assessments in online environments remain credible and capable of accurately measuring authentic student learning (Smolansky et al., 2023).

Thus, to be authentic and valid, an assessment must function as a measure of authentic student evaluation - that is, it must measure student comprehension directly, rather than the ability to use AI tools effectively. In this study, "authentic assessment" refers to assessment strategies that uphold construct validity, ensuring that what is being measured is genuine student understanding rather than AI-generated responses. Assessments must therefore be adapted to remain valid, ensuring they fulfill their intended purpose as accurate indicators of student learning.

While these challenges affect education globally, they are particularly pressing in South Africa, where online education is expanding rapidly despite limited pedagogical training and digital literacy support (Mnguni, Nuangchalerm, Zaky El Islami, Sibanda, Sari & Ramulumo, 2024). This creates an urgent need to investigate how educators in South African online schools are adapting assessment practices to maintain authentic student evaluation in these AI influenced learning environments.

1.1 Contextual background

Assessments have long functioned as a fundamental pillar of education, serving as the primary means of measuring student learning, guiding instructional decisions, and maintaining academic accountability (Dikli, 2003; Ramos & Castillo, 2024). If assessments fail to measure authentic student understanding, they risk misrepresenting competencies, leaving educators with no insights to inform pedagogy and undermining the credibility of academic qualifications. In online learning environments, assessments that function as authentic measures of student evaluation are even more essential as they serve as the primary tool for monitoring student progress and engagement in the absence of direct supervision (Heil & Ifenthaler, 2023). With fewer opportunities for informal observation, educators rely heavily on structured assessments to ensure that students are comprehending and engaging with the material (Heil & Ifenthaler, 2023) as well as adjust pedagogy to ensure final learning outcomes are met. However, the increased autonomy in online settings, combined with the inherent nature of online education means students have unrestricted access to digital tools such as AI as well as the knowledge and infrastructure to use it competently, making it challenging to ensure that assessments reflect genuine student understanding and are not simply output's of AI (Kearns, 2012; Smolansky et al., 2023). Without assessments that can discern authentic student evaluation, the ability to inform pedagogy and support learning is significantly compromised, highlighting their critical importance in maintaining the integrity of online education.

From a South African perspective, assessments play a particularly pivotal role in shaping student progression, university admissions, and broader educational policies, serving as mechanisms for rationing access to higher education, often perpetuating systemic inequities (Ajjawi, Tai, Boud, & Jorre de St, 2023; Kanjee & Sayed, 2013). Thus, ensuring assessments remain fair, valid, and reflective of genuine student learning is essential for educational equity and reform (Levy-Feldman, 2025; Ajjawi et al., 2023), especially in the South African post-apartheid context (Kanjee & Sayed, 2013; Muyambi & Ahiaku, 2025). Reliable assessments in this context are crucial for determining grade advancement, evaluating school quality, and informing national education policies, especially given the country's high rates of grade repetition (Kanjee & Sayed, 2013; Mnguni et al., 2024). The reliance on standardized assessments for university eligibility and professional opportunities further underscores their significance, as when online assessments fail to accurately measure student understanding, students may enter these high-stakes summative evaluations unprepared, emphasizing the pressing need for adaptive strategies that uphold authentic student evaluation in AI-influenced contexts.

This need is compounded by the expansion of online education within South Africa. Since the COVID-19 pandemic, online learning has grown rapidly, with e-learning enrollment increasing by over 50% between 2020 and 2022 (Statista, 2025). This shift has been driven by rising private school fees, public school overcrowding, and increasing demand for flexible, technology-enhanced learning models (MSC Education Holdings, 2024). Online learning is no longer a temporary solution but has been positioned as a permanent feature of South African education offering accessibility and mirroring global trends in digital and hybrid learning models

that strive for adaptability (Marumo, Motswaledi & Amoge, 2024). Additionally, the push for the use of AI in South African education is expanding rapidly with institutions and stakeholders pushing for the integration of AI into science education and as immersive educational tools (Mnguni et al., 2024; Funda & Mbangeleli, 2024), further influencing how both educators and students engage with assessments and amplifying the urgency of ensuring that assessments remain valid measures of learning. While AI presents opportunities for enhancing personalized learning and automating administrative tasks it also undermines traditional assessment models by enabling students to generate complex responses with minimal cognitive effort (Perkins et al., 2024).

However, this rapid expansion of online education and AI integration within South Africa has outpaced advancements in educator training, leaving educators predominantly unprepared to navigate AI-driven assessment challenges. Most educators have received little to no formal training in online pedagogy, digital assessment strategies, or AI literacy (Mnguni et al., 2024), forcing them to develop assessment methods independently, often without the necessary skills or resources to ensure validity in AI-influenced online environments. The rigidity of national curricula exacerbates this issue, offering no structured guidance on how pedagogy, and subsequently, mandated assessments can be adapted to suit an online environment (Marumo et al., 2024), leaving educators to grapple with these challenges within frameworks that do not recognize or accommodate AI's impact. South African educators also face significant digital literacy gaps, with proficiency often limited to basic digital functionalities rather than the advanced competencies needed to navigate online pedagogy successfully (Mnguni et al., 2024) and subsequently design assessments that are valid measures of student learning in these contexts. As a result, many teachers lack the ability to differentiate between authentic student understanding and AI-generated content, forcing reliance on subjective evaluations or unreliable AI detection tools. Furthermore, despite global recognition of AI's impact on assessment validity, the above contextual issues are compounded by the lack of literature both on a global level and specifically within a South African context that examines how these challenges are being addressed at an educator level. Thus, there is a significant need to examine how educators are adapting assessments in online environments to remain authentic student evaluations within rigid curricula. This study aims to contribute to this gap by exploring the strategies educators in a fully online school have developed independently to uphold assessment authenticity in response to the use of AI by students.

Although particularly pronounced within the South African context, the challenges posed by AI to assessment authenticity extend far beyond national borders, making this a global issue in education (Mills et al., 2023). The rise and inherent nature of online and asynchronous learning models transcend geographic and institutional constraints, meaning that concerns surrounding assessment integrity and authenticity in the age of generative AI are not confined to any one setting. Given this, for the purposes of this study, *AI-influenced environments* are defined as a combination of fully online structured schools, asynchronous courses, and institutions that rely on digital and asynchronous assessment forms.

A defining characteristic of online environments is unrestricted access to digital technologies, high levels of digital literacy among students, and the widespread availability of AI tools. These

factors not only intensify the challenges of assessment adaptation, making it increasingly difficult to ensure that assessments measure authentic student understanding rather than AI output, but also create commonalities across these environments globally, as online learning environments - regardless of contextual location - share similar structural characteristics and challenges. This inherent nature transcends many of the localized contextual constraints present within South Africa, reinforcing the broader relevance and transferability of this study's aim and findings. That is, while this study explores educators' responses to these assessment challenges within a fully online school in South Africa, its findings extend beyond this specific setting, aiming to contribute to broader discussions on effective assessment adaptations across contexts. Thus, to achieve this, it draws from literature across geographical and institutional contexts to position its findings within a wider understanding of AI influenced adaptive assessment strategies.

Ultimately, this study aims to explore assessment adaptation strategies that uphold authentic student evaluation in online learning environments influenced by generative AI (or amid student misuse of generative AI). To achieve this, it gathers qualitative insights from educators within a fully online school in South Africa, where the problem is particularly pronounced due to the lack of formal guidance, rigid curriculum structures, and the necessity for educators to independently develop assessment adaptations. By investigating educator-driven adaptation efforts, this study seeks to contribute to the development of AI resilient assessment models.

1.2 Problem statement

The increasing accessibility and sophistication of generative AI tools have disrupted traditional assessment practices, challenging their ability to measure authentic student learning (Smolansky et al., 2023). These tools allow students to produce complex, contextually appropriate responses with minimal cognitive effort, making it increasingly difficult for educators to determine whether student work reflects genuine comprehension or AI-generated content (Ifelebuegu, 2023; Xia, Weng, Ouyang, Lin & Chiu, 2024). As a result, assessments that were once reliable indicators of academic achievement now risk becoming invalid measures of learning, with broad implications for pedagogy, student preparedness, and academic integrity (Mills et al., 2023).

The inherent nature of online education compounds this issue. Online learning environments are characterized by unrestricted access to digital tools, high levels of digital literacy among students, and the widespread availability of AI-powered technologies (Rahman et al., 2022; Heil & Ifenhaler, 2023). This means that students in AI-influenced environments not only have unchecked access to sophisticated AI tools but also the technical skills to use them competently. These factors make AI use pervasive and difficult to regulate, increasing the risk that assessments measure AI outputs rather than genuine student comprehension (Kadel, Abid, Mishra, Rani, Shailendra, & Mahato, n.d.). Without assessments that accurately reflect student learning, educators lose the ability to adjust instruction meaningfully (Messick, 1994), jeopardizing both academic integrity and student preparedness (Mills et al., 2023). The consequences extend beyond pedagogical impacts - they also affect accreditation, curriculum development, student placement, resource allocation, and the overall credibility of educational

qualifications (Tenakwa, Boadu, Tenakwah, Parzakonis, Brady, Kansiime, Said, Ayilu, Radavoi & Berman, 2023). While this is a challenge that affects diverse online contexts, it is particularly pronounced in South Africa, where the rapid expansion of online learning has outpaced the development of AI-adaptive assessment strategies, and educator training in AI-adaptive assessment strategies remains limited (Mnguni et al., 2024). The rigid national curriculum provides no structured guidance on digital technologies, and in this context AI's role in assessment, leaving educators to develop adaptation strategies independently and inconsistently (Marumo et al., 2024). Given that standardized assessments play a crucial role in university admissions and educational policy decisions in South Africa, invalid assessments could have long-term consequences for both individual learners and institutional credibility (Kanjee & Sayed, 2013).

Despite widespread recognition of AI's impact on assessment, there remains a substantial knowledge gap in empirical research on how educators are adapting assessments to maintain authenticity in AI-influenced environments (Smolansky et al., 2023; Mills et al., 2023). The core issue is not merely the presence of AI in education but the need to develop adaptive assessment strategies that ensure assessments remain authentic indicators of student understanding, rather than tools vulnerable to manipulation. Existing approaches, such as AI detection tools, have proven unreliable and ineffective in addressing deeper pedagogical concerns (Dalalah & Dalalah, 2023; Elkhatat, Elsaid & Almeer, 2023). Thus, this study seeks to address this gap by exploring how educators in a fully online school situated within South Africa are adapting their assessment practices to preserve authentic student evaluation in AI-influenced learning environments. By capturing educators' qualitative perspectives, this study aims to identify actionable strategies that uphold assessment validity and inform best practices for AI-adaptive assessment design in online education.

1.3 Aims, objectives and research questions

Research aim:

To explore assessment adaptation strategies that uphold authentic student evaluation in online learning environments influenced by generative AI (or amid student misuse of generative AI).

Research objectives:

1. To explore how educators perceive the authenticity of assessments in AI-influenced online learning environments.
2. To analyze how online educators adapt assessment strategies to uphold authentic student evaluation in response to AI use by students.
3. To propose further strategies for adapting assessment to better uphold authentic student evaluation in AI influenced environments.

Main research question:

How can online educators adapt assessment strategies to uphold authentic student evaluation amid student misuse of generative AI?

Sub-questions:

1. How do educators perceive the authenticity of assessments in AI-influenced online learning environments?
2. How are online educators adapting assessment strategies to uphold authentic student evaluation in response to generative AI use?
3. What further strategies can be implemented to adapt assessment methods for authentic student evaluation in AI influenced environments?

1.4 Significance and purpose

Generative AI's growing influence in education has disrupted traditional assessment methods, requiring urgent adaptation to ensure validity and credibility (Ifelebuegu, 2023; Smolansky et al., 2024). As students gain easier access to sophisticated AI tools, educators must rethink assessment design and move beyond unreliable detection measures to preserve authentic student evaluations, a gap this study intends to address by exploring the actionable insights educators take to achieve this.

This is particularly significant for educators, institutions, and policymakers as it aims to provide empirical insights into the evolving challenges of assessment in digitally rich AI-integrated education. The findings aim to directly benefit educators by offering evidence-based strategies for adapting assessments to uphold authenticity in online learning contexts. Educational institutions and policymakers will also gain valuable insights into the existing gaps in educator training, support and institutional support mechanisms, enabling them to develop policies and programs that better equip educators to design assessments that are resilient to AI's impact. Beyond the educator level and institutional contributions, this study aims to contribute to broader educational and societal challenges, as without the development of AI adaptive assessment strategies, online learning risks losing credibility as a legitimate mode of education, potentially diminishing the value of online qualifications (Mills et al., 2023; Li, 2023).

While existing research on AI in education and assessment largely focuses on academic integrity concerns and institutional policy responses, there remains a critical gap in empirical studies that investigate how educators are proactively adapting their assessments. This study addresses this gap by capturing qualitative perspectives from educators in a fully online school, shedding light on how they navigate assessment challenges in AI-influenced environments. By analyzing current adaptation strategies, identifying persistent challenges, and proposing further solutions, this study advances the discourse on AI-adaptive assessment practices and contributes to the growing body of knowledge on authentic assessment in digital education.

The implications of this study extend beyond individual educators and institutions. By ensuring that assessments continue to measure student comprehension rather than AI-generated responses, this study helps safeguard academic integrity and fairness, student preparedness,

and the overall trust in online qualifications (Mills et al., 2023). In contexts such as South Africa, where online education is rapidly expanding but formal training in AI-adaptive assessment strategies remains limited, these findings hold particular relevance for South African educators navigating the rapidly expanding world of online education. Moreover, by addressing the need for sustainable and pedagogically sound assessment practices, this study contributes to shaping the future of AI-integrated education globally, ensuring that technology enhances rather than undermines the validity of student evaluation.

1.5 Conclusion

This chapter has established the foundation for this study by examining the critical role of assessments in education, the challenges posed by generative AI to assessment authenticity, and the necessity for adaptive strategies in online learning. As AI-generated content increasingly threatens assessment validity, ensuring that evaluations measure genuine student learning rather than AI proficiency has become a pressing concern, particularly in fully online environments where direct supervision is absent. While this issue is globally relevant, it is especially urgent in South Africa, where online education is expanding rapidly, yet educators receive little to no formal training in AI-adaptive assessment strategies. Despite widespread recognition of AI's impact, there remains a significant gap in research on how educators are modifying assessments to uphold authenticity in AI-influenced environments. This study aims to contribute to this gap by exploring the strategies educators in a fully online school within South Africa have developed independently to uphold assessment authenticity in response to the use of AI by students, providing insights that contribute to both local and global discussions on sustaining credible assessments in digital education. With the research aim, objectives, and significance firmly established, the discussion now turns to a review of the existing literature, which examines the theoretical and empirical foundations that inform AI-adaptive assessment practices.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

As outlined in Chapter 1, the rapid integration of digital technologies and generative AI into education has fundamentally altered assessment practices, challenging educators' ability to maintain authentic student evaluation, particularly in online environments (Rahman et al., 2022; Ifelebuegu, 2023). This chapter presents a narrative literature review, chosen because it aligns closely with this study's qualitative aims and is particularly effective for synthesizing diverse theoretical, empirical, and contextual perspectives within complex and rapidly evolving fields (Baumeister & Leary, 1997) like AI-influenced online education. This chapter aims to explore existing literature relevant to assessment techniques in online, and parallel, environments, particularly focusing on how assessments are adapting to the unique challenges posed by digital tools and generative AI. Given the scarcity of research specifically addressing assessment adaptation in online schools, the review intentionally incorporates broader literary insights from global online and asynchronous education contexts, including higher education, due to structural and methodological parallels, such as reliance on digital literacy and asynchronous assessment practices. The chapter achieves this purpose through a structured exploration of theoretical foundations guiding assessment adaptation in this study - Validity Theory, Authentic Assessment Theory, and Situated Cognition Theory (Sections 2.1 and 2.2) - followed by an examination of traditional assessment limitations in online settings (Section 2.3), a detailed analysis of adaptive assessment strategies emerging in response to AI (2.4), and concludes by synthesizing these insights through visual representations in preparation for the empirical investigation (2.5). Ultimately, this review underscores a critical gap—one that the study aims to fill by examining how educators in a fully online school perceive and adapt their assessments to maintain authenticity and validity in AI-influenced learning environments, capturing their lived experiences and informing practical strategies for authentic student evaluation.

2.1 Theoretical framework

Ensuring authentic student evaluation in AI-influenced online environments requires a robust theoretical foundation addressing validity, authenticity, and contextual factors shaping assessment design. This study employs three primary theories - Validity Theory (Messick, 1987), Authentic Assessment Theory (Wiggins, 1990; Newmann, Bryk & Nagaoka, 2001; Darling-Hammond & Adamson, 2010) supported by Schön's Reflective Practice (1987), and Situated Cognition Theory (Brown, Collins & Duguid, 1989) - to explore educators' strategies for adapting assessments in response to AI challenges. This section outlines and justifies each theory's selection, clarifying their relevance to the research objectives and questions. Together, they provide an essential lens for understanding the limitations of current assessment practices and the adaptations needed to ensure assessments remain authentic measures of student learning amid AI integration.

2.1.1 Validity Theory

Messick's (1987) Validity Theory provides a foundational framework for evaluating whether assessments in AI-influenced online environments remain authentic measures of student learning. Messick (1987) argues that validity is not merely an attribute of the test itself but an ongoing process that evaluates the accuracy, fairness, and broader consequences of assessment practices. The framework defines three components of validity identified for this study:

1. *Construct validity* ensures that an assessment measures what it claims to measure, meaning that assessment outcomes should accurately reflect student comprehension rather than external influences. In AI-influenced online learning environments, construct validity is compromised when AI tools generate responses that mimic human reasoning, making it difficult to determine whether assessments reflect authentic student learning (Smolansky et al., 2023).
2. *Content validity* ensures that assessment tasks and questions cover the intended learning objectives, aligning with curriculum standards and instructional goals (Messick, 1987). In AI-influenced settings, content validity may be weakened if AI-generated responses appear to align with assessment rubrics but lack depth or originality.
3. *Consequential validity* examines the broader implications of assessment practices, particularly regarding fairness, equity, and ethical considerations (Messick, 1987). In AI influenced education, consequential validity is affected when access to AI tools varies among students, creating disparities in assessment fairness (Tenakwah et al., 2023).

Validity Theory is essential to this study as it provides the critical foundation for evaluating whether assessments genuinely measure student learning or AI-generated outputs, directly addressing the study's objective of exploring educators' perspectives on assessment authenticity and adaptation strategies in AI-influenced environments. Specifically, Validity Theory enables analysis of whether adapted assessments maintain construct, content, and consequential validity, highlighting equity issues such as potential unfair advantages from varying AI proficiency among students. For example, if educators shift from traditional essay-based assessments to applied, process-driven tasks, Validity Theory evaluates whether these new methods still measure student learning accurately. If AI-generated content meets the technical requirements of an assessment but lacks depth or originality, Validity Theory explains why this compromises construct validity. However, Validity Theory alone is insufficient, as it identifies when an assessment is no longer measuring what it intends to, but it does not offer strategies for adapting assessments to ensure they remain meaningful, resistant to AI manipulation, and reflective of higher order thinking skills (HOTS). Thus, it must be complemented by Authentic Assessment Theory, which provides a more robust framework for creating assessments that engage students meaningfully and resist AI manipulation.

2.1.2 Authentic Assessment Theory

Authentic Assessment Theory is central to this study as it emphasizes designing assessments that engage students in meaningful, real-world applications. Wiggins (1990) introduced the

concept, arguing that assessments should reflect the complexity of real-life challenges, requiring students to apply knowledge, think critically, and solve problems within practical, relevant contexts. Unlike traditional assessments that often prioritize recall and standardized evaluation, authentic assessments demand HOTS, originality, and creativity, ensuring that students actively engage in the learning process rather than passively regurgitating information (Wiggins, 1990).

The key principles underpinning Authentic Assessment Theory reinforce its relevance in AI-influenced online education:

- Wiggins (1990) highlights the importance of real-world relevance, advocating for tasks that require students to transfer their learning to practical applications beyond the classroom.
- Newmann, Bryk, and Nagaoka (2001) extend this by emphasizing HOTS, arguing that assessments should push students to analyze, synthesize, and evaluate information rather than rely on rote memorization.
- Darling-Hammond and Adamson (2010) focus on performance-based evaluation, where students create products or perform tasks that serve as concrete evidence of their learning. Furthermore, reflective practice is a crucial element, as emphasized by Darling-Hammond and Adamson (2010), who argue that self-reflection fosters deeper understanding and continuous improvement.

To enhance the depth of Authentic Assessment Theory, Schön's (1987) Reflective Practice Model is incorporated as a complementary layer. Schön (1987) identifies two types of reflection: reflection-in-action, which occurs during the learning process and allows students to adjust their approach in real time, and reflection-on-action, which happens after an assessment is completed and encourages students to analyze their learning experience, identifying strengths and areas for improvement. In AI-influenced online education, where students may be tempted to outsource cognitive processes to AI tools, embedding reflective elements ensures personal engagement with learning outcomes, reinforcing assessment authenticity (Yung, Moyle & Yang, 2024).

Authentic Assessment Theory addresses the study's aim by providing a framework to evaluate and analyze assessment adaptations in AI-influenced environments, specifically emphasizing originality, creativity, personal engagement, and HOTS to ensure assessments resist AI manipulation and maintain authentic measures of student learning (Ifelebuegu, 2023; Smolansky et al., 2023). It guides the evaluation of strategies such as portfolios, reflective journals, and real-world problem-solving tasks, examining how these approaches reduce AI interference and foster genuine learning (Darling-Hammond & Adamson, 2010). While Authentic Assessment Theory is essential for designing and evaluating AI-resistant assessment types, it remains insufficient on its own, as it does not account for broader contextual influences - such as institutional policies, curricular constraints, and disciplinary factors - that shape assessment design and educators' adaptation capabilities. Thus, Situated Cognition Theory complements this by explicitly incorporating these environmental and institutional contexts into the understanding of assessment adaptation.

2.1.3 Situated Cognition Theory

Situated Cognition Theory, as developed by Brown, Collins, and Duguid (1989), asserts that learning and knowledge is deeply embedded in the physical, social, and cultural environments in which it occurs. Unlike theories that treat knowledge acquisition as an abstract process, this perspective emphasizes that context shapes how knowledge is understood, applied, retained and expressed. In AI-influenced online learning environments, AI itself becomes a central contextual factor, influencing not only how students access and construct knowledge but also how learning is demonstrated and assessed (Vargas, Chiappe & Durand, 2024).

This theory is essential to this study because it allows for a deeper, more contextualized, and qualitative interpretation of assessment adaptation strategies. That is, while Validity Theory and Authentic Assessment Theory provide tools for evaluating whether assessments remain authentic and effective, Situated Cognition Theory explains the broader contextual factors that shape how and why educators make specific assessment adaptation decisions. For the purposes of this study, Situated Cognition Theory specifically provides insight into how curriculum constraints and subject-specific factors shape educators' assessment adaptation strategies, and how these assessments reflect the contexts in which learning and knowledge construction occur (Vargas et al., 2024). These influencing factors are explicitly engaged with and grounded in the subsequent sections of the literature review. This theory therefore contributes explicitly to examining why certain assessment strategies are more feasible or effective within particular curricular and disciplinary contexts - such as language-based assessments being highly vulnerable to AI-generated content (Kizilcec, Huber, Papanastasiou, Cram, Makridis, Smolansky, Zeivots, & Raduescu, 2024) compared to more process-oriented STEM assessments, which naturally resist AI manipulation (Chan, Ali, Park, Sham, Tan, Chong, Qian & Sze, 2025). However, Situated Cognition Theory alone is insufficient because it does not provide specific principles for designing assessments that inherently ensure authenticity and deeper learning, thus necessitating the integration of Validity Theory and Authentic Assessment Theory.

2.2 Conceptual framework

The preceding section established the theoretical foundations guiding this study, highlighting how Validity Theory, Authentic Assessment Theory, and Situated Cognition Theory shape the understanding of assessment adaptations in AI-influenced online learning environments. This section introduces the conceptual framework, explicitly linking these theoretical constructs to empirical insights drawn from literature and data. The framework (represented in Figure 2.1 and explained in Table 2.1 below) synthesizes key constructs from each theory with practical strategies educators use to maintain validity, authenticity, and equity amid AI challenges derived from both empirical data and literature. Specifically, the conceptual framework maps relationships among theoretical principles - such as construct, content, and consequential validity (Messick, 1987); authentic assessment strategies emphasizing reflection and real-world engagement (Wiggins, 1990; Schön, 1987); and contextual influences like curriculum constraints and subject-specific assessment challenges (Brown et al., 1989). It provides a

structured lens to explore how educators navigate assessment adaptation in AI-influenced environments, ensuring that assessment design remains both meaningful and valid.

The conceptual framework was developed iteratively, integrating theoretical constructs with empirical insights from literature and data on adaptation strategies, institutional policies, and subject-specific constraints. This emergent approach, common in qualitative research (Creswell, 2007), ensures that the framework remains responsive to the evolving challenges educators face in maintaining assessment authenticity amid AI advancements. Given that this section precedes the literature review, it is important to note that while it introduces key empirical insights, their foundations in existing research will be further expanded upon in the literature review that follows, explicitly bridging theoretical principles with the practical realities and contextual challenges educators face in adapting assessments in AI-influenced online environment.

To provide a visual representation of how the theoretical constructs interact with empirical insights, Figure 2.1 below illustrates the conceptual framework developed for this study:

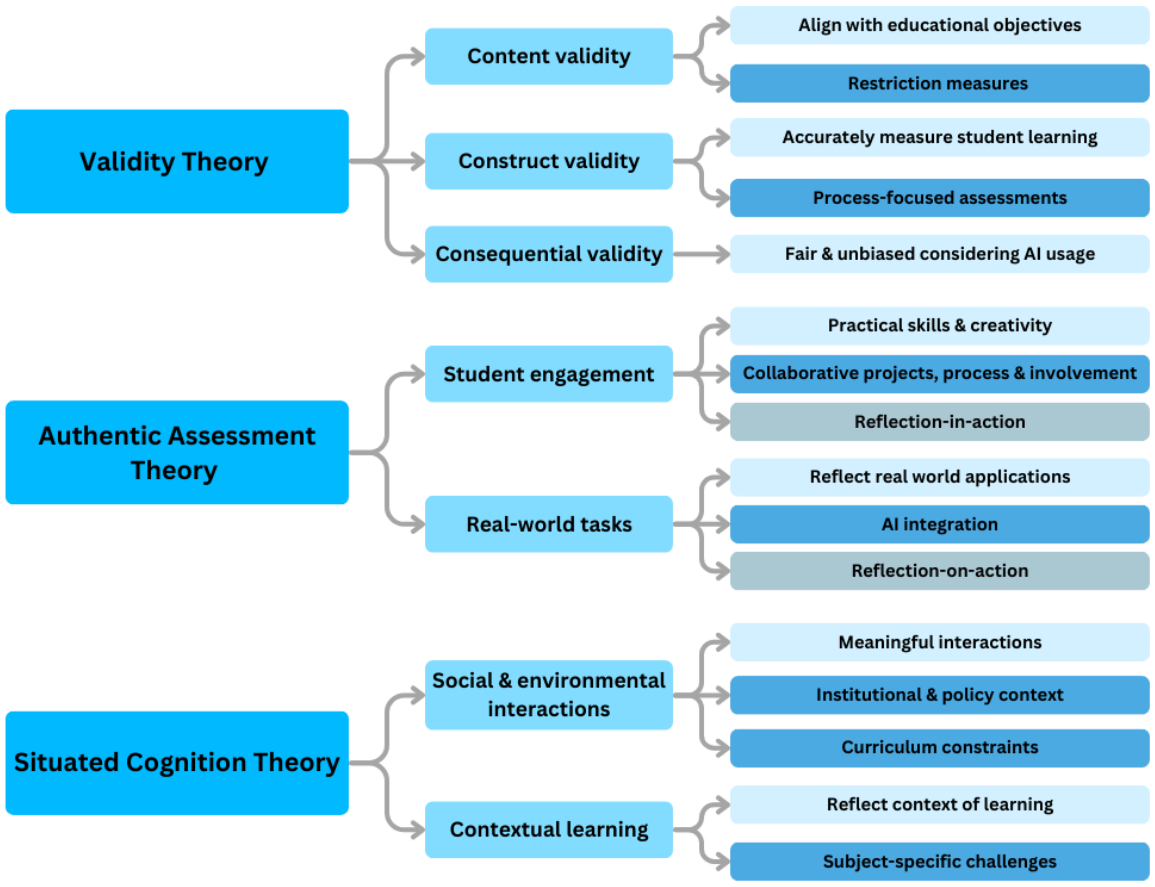

Figure 2.1 Conceptual framework integrating Validity Theory, Authentic Assessment Theory, and Situated Cognition Theory, along with associated constructs and conceptual insights. The

figure visually illustrates the relationships between theoretical principles, practical strategies, and contextual factors, providing a foundation for understanding how educators navigate assessment adaptation in AI-influenced online environments.

The framework's components are further detailed in Table 2.1 below, which breaks down the key constructs and their implications for validity, authenticity, and assessment adaptation in AI-influenced contexts:

Table 2.1 Conceptual framework constructs and insights

Theoretical framework	**Theoretical construct**	**Conceptual insight**	**Key explanatory example**
Validity Theory	Content Validity	**Align with educational objectives:** Ensures tasks reflect curriculum goals and objectives.	Traditional formats like essays or standardized tests are susceptible to AI interference.
		Challenges with AI: AI-generated outputs may align superficially with content standards but lack depth.	Restrictive measures, such as locked browsers, help maintain content validity.
	Construct Validity	**Accurately measure student learning:** Focuses on assessing genuine abilities and cognitive processes.	Process-focused tasks like portfolios, iterative assignments, and personalized projects emphasize reasoning.
		Key insights: Process-focused assessments reduce AI interference by requiring reasoning and engagement.	Examples include requiring students to document thought processes and engage actively in assessments.
	Consequential Validity	**Fair and unbiased considering AI usage:** Ensures equity in assessment outcomes.	Restrictive measures create a level playing field by limiting access to AI tools during assessments.
		Examples from data: Fairness is preserved by ensuring traditional tasks are not unfairly impacted by AI tools.	Lockdown browsers, secure platforms, and clear institutional policies address consequential validity.
Authentic Assessment	Student engagement	**Practical skills and creativity:** Promotes tasks	Personal experience-based projects and individualized

Theory		aligned with student interests to enhance engagement.	artefacts reduce reliance on AI.
		Examples: Collaborative projects, process-focused assessments, and tasks fostering hands-on involvement.	Tasks requiring real-world applications inherently reduce AI-generated outputs.
	Real-world tasks	**Reflect real-world applications:** Tasks mirror professional challenges to ensure relevance.	Assignments include project-based assessments, case studies, and problem-solving exercises.
		Integration with AI: Tasks require students to evaluate or improve AI-generated outputs, preparing them for future contexts.	Assignments integrate AI use, reflecting real-world practices where AI is a collaborator.
	Reflective practices	**Reflection-in-action:** Students adapt approaches in real time, promoting critical thinking.	Digital reflective journals and real-time reflections ensure active engagement.
		Reflection-on-action: Students analyze decisions post-task to refine learning strategies.	Portfolios and self-assessments encourage iterative improvement and metacognition.
Situated Cognition Theory	Social and environmental interactions	**Meaningful interactions:** Collaboration and dialogue enhance authentic learning.	Peer reviews, teacher-student interactions, and group projects promote deeper engagement.
		Institutional and policy context: Institutional support shapes assessment practices.	Clear policies, professional development, and resource availability influence assessment adaptation.
		Curriculum constraints: Rigid curricula limit flexibility, hindering innovative strategies.	Curricular inflexibility particularly impacts traditional text-based assessments vulnerable to AI.
	Contextual learning	**Reflect context of learning:** Align assessments with learning	Integrating AI tools ensures relevance and prepares students for real-world

		environments and future applications.	applications.
		Subject-specific challenges: Disciplines pose unique demands; STEM aligns naturally with adaptive assessments.	Language-based subjects need extensive adaptation to counter AI-generated text.

Table presents summary unpacking the conceptual framework underpinning the study, illustrating how Validity Theory, Authentic Assessment Theory, and Situated Cognition Theory connect to their respective constructs and practical applications in AI-influenced online education.

The conceptual framework directly informs research design by structuring how assessment adaptation strategies are examined, analyzed, and interpreted in this study. By integrating theoretical constructs with empirical insights, the framework provides a lens for exploring and evaluating how educators navigate assessment challenges in AI-influenced online learning environments. Figure 2.2 below visually summarizes this relationship, demonstrating how the research aim informed the choice of theory, which in turned informed the framework and how the framework guided data collection and analysis:

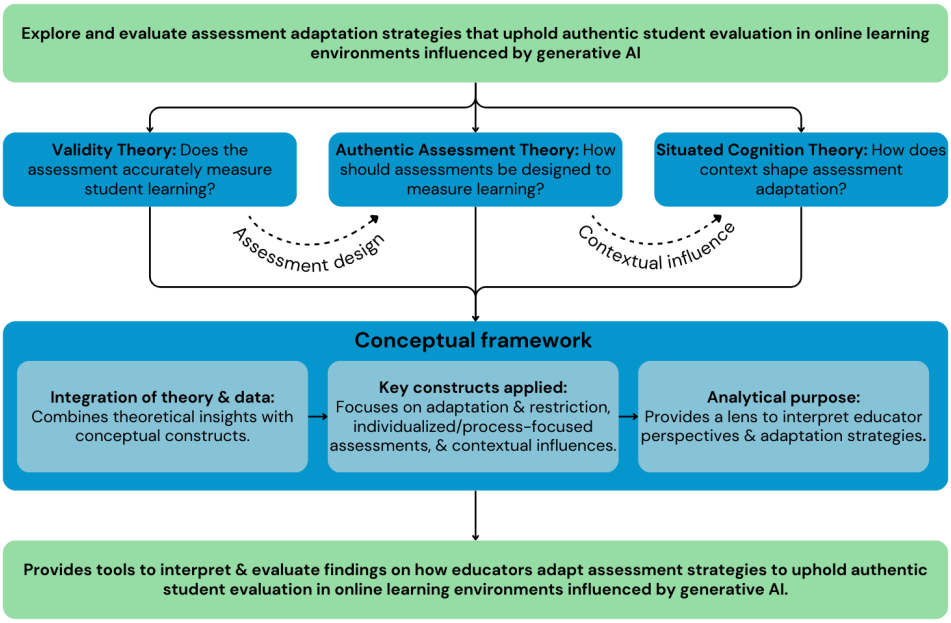

Figure 2.2 Conceptual framework and research design alignment. Visual summary illustrating how theories were chosen for their relevance to the research aim and collectively inform the conceptual framework. The framework integrates key constructs - adaptation and restriction, individualized and process-focused assessments, and contextual influences -

providing the lens to achieve the aim of exploring how educators adapt assessments to uphold authentic student evaluation in AI-influenced environments.

By synthesizing theoretical principles with empirical insights, this conceptual framework provides a structured foundation for exploring and evaluating how educators adapt assessments in AI-influenced online learning environments. It highlights the interplay between validity, authenticity, and contextual constraints, offering a lens through which data and findings are interpreted. This structured approach ensures alignment between research design, methodology, and empirical investigation, thereby setting the foundation for the literature review that follows.

2.3 Foundations of assessment in online education

Assessment is fundamental to education, serving as a mechanism for evaluating student learning, guiding instructional decisions, and ensuring academic integrity (Dikli, 2003; Ramos & Castillo, 2024). However, as education shifts to digital environments where advanced AI tools are highly accessible, traditional assessment methods - designed for structured, in-person contexts - face challenges in maintaining validity, authenticity, and engagement in online learning (Rahman et al., 2022). This section examines the evolution of assessment practices in online education. It first explores the limitations of traditional assessment techniques when applied to digital learning environments (2.3.1), highlighting concerns regarding validity, engagement, and integrity. It then considers how online assessment techniques have developed in response to these challenges, particularly in the age of AI (2.3.2), analyzing both the potential of emerging technologies and the threats posed by generative AI to assessment authenticity. Together, these discussions aim to establish the foundational context for exploring the adaptations necessary to maintain authentic student evaluations in AI influenced educational landscapes.

2.3.1 Traditional assessment techniques and online environments

Traditional assessment techniques, including multiple-choice tests, true/false quizzes, short-answer questions, and essays, have long been central to evaluating student learning outcomes in traditional and online learning contexts (Dikli, 2003; Ramos & Castillo, 2024). These methods are widely used due to their efficiency, scalability, and perceived fairness in standardizing evaluation (Messick, 1994). For example, multiple-choice questions and close ended question types can be machine-graded almost instantly, making them highly scalable, and their fixed answers reduce grader bias, lending an appearance of fairness and reliability that open-ended tasks might lack (Rutgers University, 2023). In traditional settings, or structured learning environments with direct oversight, these assessments offer reliable ways to measure content knowledge, recall, and analytical writing skills while ensuring alignment with curriculum objectives (Anderson, 1998; Nasab, 2015; Rubab & Imran, 2023). Essays, in particular, have been considered strong indicators of HOTS, as they require students to synthesize and articulate complex ideas (Nasab, 2015; Rubab & Imran, 2023).

However, the effectiveness of these techniques diminishes in online learning environments, where traditional assessments may fail to accurately measure student learning due to the unique social, technological, and interactive dynamics of online education, resulting in a misalignment between how knowledge is constructed in these settings and how it is evaluated. Online learning environments are considered alternative educational contexts, as they lack many of the affordances - such as physical oversight, immediate teacher-student interactions, and controlled settings - that make traditional assessments effective (Heil & Ifenthaler, 2023).

A major practical concern with carrying over traditional assessments into online settings is scoring reliability and feedback timeliness. Open-ended responses like essays are resource-intensive to grade and introduce significant subjectivity – different graders may assign different scores unless strict rubrics and norming are in place (Nasab, 2015). In online settings, with many students, manually grading essays can lead to long delays in feedback, undermining students' learning progress (Ramos & Castillo, 2024). By contrast, objective formats (like MCQs) provide immediate scores but often only test factual recall (Rutgers University, 2023). In other words, traditional assessments tend to be either labor-intensive and slow (if complex and open-ended) or fast but superficial (if simple and auto-graded). Neither scenario is ideal for online learning. Delayed or minimal feedback is especially problematic online, where students rely on timely feedback loops to stay motivated and correct misunderstandings (Yao, Reilley, Moy, Gutsch & Wang, 2024). Traditional assessments—typically uniform, time-bound, and ordered identically for every learner—fail to exploit the adaptive affordances of digital platforms, which can tailor question difficulty, offer multiple pathways for demonstrating understanding, and support iterative improvement (Yao et al., 2024). Their focus on rote memorization and recall clashes with the critical thinking, creativity, and collaborative skills prized in online education (Yao et al., 2024; Nasab, 2015; Vasilyeva, Pechenizkiy & De Bra, 2008), while their impersonal format further hampers already fragile learner engagement by neglecting the meaningful interactions essential for digital learning communities (Anderson, 1998).

Online education also exacerbates assessment integrity and authenticity concerns due to instant access to vast information and advanced technological tools, including AI (Smolansky et al., 2023) compounded by the lack of physical oversight. Such tools enable students to generate responses effortlessly, bypassing traditional cognitive effort and raising validity concerns about assessments accurately reflecting true student understanding (Zhai et al., 2024). Given these challenges, traditional techniques - originally designed for structured, in-person environments - clearly do not fully meet the interactive, adaptive, and process-driven demands of online education, highlighting a gap that this study will address by investigating alternative assessment strategies to ensure authenticity, validity, and engagement.

2.3.2 Online assessment techniques and the age of AI

Online education has spurred the development of diverse assessment techniques intended to measure learning outcomes, foster engagement, and maintain academic standards (Rahman et al., 2022). These techniques range from virtual labs and interactive tutorials to online discussions and multimedia projects, reflecting the growing emphasis on HOTS and engagement in digital contexts (Sewell, Frith, & Colvin, 2010; Heil & Ifenthaler, 2023). These

tools support a range of cognitive levels, from basic knowledge recall to higher-order skills such as application, analysis, creativity, and collaboration (Sewell et al., 2010; Rovai, 2001; Kadka, Dahal, Acharya, Puri, Subedi & Hasan, 2025). In principle, such methods address the need for deeper analytical thinking, creativity, and practical application - attributes often lacking in traditional exams designed for structured face-to-face settings - but essential in online learning environments.

However, while these approaches align better with the flexibility and interactive nature of online education, they present ongoing concerns regarding academic integrity due to the nature of online learning (Rahman et al., 2022). That is, the ease of access to sophisticated digital tools and instant information increases opportunities for unauthorized assistance, making it difficult to verify whether assessments accurately measure individual student learning (Sewell et al., 2010; Öztürk, 2024). The relative anonymity and asynchronous nature of online courses can obscure whether students are relying on outside resources or minimal cognitive effort when completing tasks (Tuah & Naing, 2021). Even approaches designed to encourage authentic engagement - like take-home projects or process-focused assignments - remain susceptible to external interference (Heil & Ifenthaler, 2023). In many cases, educators have introduced portfolios, online debates, and extended discussions to capture more complex displays of knowledge or practical application (Tuah & Naing, 2021). Nonetheless, these methods often falter when assessing genuine comprehension if students have unrestricted access to sophisticated digital tools that can automate or generate high-quality responses (Smolansky et al., 2023).

This challenge has intensified with the rise of advanced generative AI systems (Smolansky et al., 2023). The rapid advancement and integration of AI into education represents a pivotal shift within education (Vargas et al., 2024). While online education and internet access are not necessarily new phenomena, the capabilities and accessibility of AI technologies have fundamentally transformed how regular individuals access, work with, and construct knowledge within these contexts. Unlike earlier digital tools, AI introduces advanced systems that not only analyze and adapt to user behaviors but also entirely automate tasks - such as essay-writing, data analysis, or project ideation - that once demanded significant cognitive input (Mills et al., 2023). This transformative shift necessitates a profound reevaluation of traditional educational practices, particularly in how we conceptualize learning and assessment. By altering the ways in which knowledge is accessed and applied, AI challenges norms and educators to design systems that reflect this new digital reality, ensuring that teaching, learning, and assessment practices are relevant, equitable, and aligned with the demands of a rapidly evolving technological landscape (Vargas et al., 2024).

Tools such as OpenAI's GPT-4o, for example, introduces entirely open access multimodal functionalities that allow it to process text, audio, and visual inputs seamlessly (OpenAI, 2023), excelling at tasks such as generating contextual written content, and translating languages with human-like fluency, demonstrating its capacity to replicate diverse academic outputs. Similarly, OpenAI's o1 and o3 models enhance reasoning abilities by deliberating before responding, allowing for sophisticated problem-solving in fields like science and mathematics (OpenAI, 2025). Google's Gemini AI amplifies this trend by integrating instant Chromebook search features (Google, 2024), providing students with immediate access to vast amounts of

knowledge without requiring manual internet searches. This instant retrieval of information, combined with plugin writing assistants like Grammarly and ChatGPT plugins, enables users to generate polished and relatively well-researched responses with minimal effort. These tools can seamlessly create human-like written work, generate comprehensive arguments, and integrate external data and contextual factors directly into assignments. Such advancements highlight how AI can effectively replicate the skills and outputs current assessments are intended to measure, raising significant concerns about whether assessments continue to uphold authentic student evaluation.

Ultimately, as these AI models become more accessible and capable, they pose an ongoing and evolving threat to the authenticity and validity of assessment methods. Construct validity is at significant risk, as assessments intended to evaluate critical thinking, creativity, and problem-solving may now primarily reflect AI's capabilities rather than the student's own cognitive processes (Smolansky et al., 2023). The ease with which AI can generate well-structured essays, complete programming assignments, or solve complex academic problems undermines the fundamental purpose of assessments - to measure and track genuine student progress (Ifelebuegu, 2023). This raises critical concerns regarding consequential validity, as educators lose the ability to use assessments as tools for instructional decision-making and targeted support, undermining the whole evaluation process. Furthermore, the prevalence of AI generated submissions in higher education has already demonstrated how such tools enable academic dishonesty, creating unfair advantages and diminishing the educational value of assignments designed to foster independent critical thinking (Mills et al., 2023). As AI continues to evolve, maintaining assessment authenticity requires a fundamental reevaluation of assessment design to ensure that evaluations remain accurate measures of student learning rather than reflections of AI's ever-expanding capabilities. The challenge posed by AI to assessment integrity is not the use of AI by students but rather the fundamental incompatibility between current assessment designs and the capabilities of AI tools (Xia et al., 2024). Most assessments aim to measure individual knowledge, skills, and understanding; however, AI can now seamlessly replicate the skills and outputs that these assessments are intended to evaluate. This creates a scenario where students can copy and paste AI-generated responses with little to no engagement, bypassing critical thinking and authentic learning entirely (Xia et al., 2024). As a result, assessments become invalid and inauthentic, failing to measure what they claim to assess (Xia et al., 2024).

To address these challenges, there is a growing call for the development of "authentic assessments" that incorporate principles designed to evaluate HOTS that are more resistant to AI replication, such as critical analysis, collaboration, creativity, and the application of knowledge in novel contexts (Ifelebuegu, 2023). By centering assessments around these skills, educators can create tasks that not only mitigate AI misuse but also better prepare students for real-world problem-solving (Ifelebuegu, 2023). Given AI's accessibility and prevalence in online education, a fundamental reevaluation of traditional assessment methods is necessary to ensure they continue to serve their intended pedagogical purpose (Smolansky et al., 2023).

2.4 Adaptive assessment strategies in the age of AI

As generative AI continues to reshape online education, maintaining the validity, authenticity, and fairness of assessments requires adaptive strategies that move beyond traditional evaluation methods (Xia et al., 2024). As AI reshapes online education, educators must adopt adaptive assessment strategies to uphold validity, authenticity, and fairness (Xia et al., 2024). This section examines key approaches to mitigating AI's influence. It first explores individualized and process-focused assessments (2.4.1), which emphasize personal engagement and iterative learning. It then contrasts integration and restriction strategies (2.4.2), evaluating AI-inclusive approaches versus prohibitive control measures. Finally, it considers broader contextual factors (2.4.3), such as institutional policies, subject-specific demands, and curriculum constraints. Together, these discussions provide a comprehensive understanding of the evolving landscape of assessment adaptation in AI-influenced online education and align with this study's broader objective of evaluating strategies that uphold authentic student evaluation in digital environments.

2.4.1 Individualized and process focussed assessments

Individualized and process-focused assessments both represent authentic, student-centered approaches to evaluation in AI influenced online learning. These strategies are both guided by authentic assessment principles by shifting the focus from static, standardized outputs that AI can easily replicate, to personalized engagement and iterative learning, ensuring that assessments demand cognitive effort, self-reflection, originality and are aligned with real-world outcomes. By tailoring the tasks presented to learners to their individual needs, experiences and contexts and emphasizing the processes behind learning rather than just the final outcomes these approaches minimize AI interference while fostering deeper learning (Ifelebuegu, 2023).

Individualized assessments are designed to ensure cognitive engagement by reflecting students' unique abilities, experiences, preferences, and interests, making it harder for AI to generate contextually appropriate responses (Charles Sturt University, 2024). By tailoring the evaluation process to individual needs and placing them within individual contexts, these assessments foster a more personal and meaningful connection to learning (Ifelebuegu, 2023). Similarly, flexible and personalized assessments allow students to choose topics, methods, or formats for their work, promoting ownership over their learning while maintaining assessment integrity (Ifelebuegu, 2023). These approaches enhance construct validity by capturing a more precise understanding of a student's knowledge and skills, making learning more relevant and reducing opportunities for AI misuse, as the outputs are unique and challenging for AI tools to replicate in their entirety (Ifelebuegu, 2023).

Similarly, process-focused assessments shift the focus from evaluating only the final product to examining the steps, strategies, and thought processes students use throughout their learning journey to create the final artefact (Kadel et al., n.d.). By emphasizing continuous feedback and improvement, these assessments encourage students to engage deeply with their work, reflect on their progress, and refine their understanding, allowing educators to assess not just the end result but the cognitive processes underlying it (Ifelebuegu, 2023). These formats inherently

demand cognitive engagement and originality, making AI-generated responses ineffective unless students actively engage with the material (Kadel et al., n.d.). Additionally, requiring students to show progress over time - through iterative drafts, feedback incorporation, or problem-solving explanations - ensures that assessments measure authentic engagement rather than AI-facilitated content generation (Ifelebuegu, 2023).

Central to process-focused assessments are reflective practices, explicitly promoting metacognition, self-regulated learning (SRL), and HOTS by requiring students to critically examine and articulate their thought processes throughout learning. Reflective approaches, including reflective digital journals, structured self-assessments, peer reviews and portfolios, prompt students to continuously monitor, evaluate, and refine their understanding, reinforcing meaningful engagement with the course material and significantly reducing AI interference (Yuan & Hu, 2025.; Kadel et al., n.d.). Web-based portfolios particularly facilitate sustained reflective practice, embedding goal-setting, iterative revisions, and self-assessment into the evaluation process, thus providing evidence of authentic, personalized cognitive effort challenging for AI tools to replicate convincingly in their entirety (Ifelebuegu, 2023). Peer reviews further enhance this reflective dimension by encouraging students to critically evaluate their peers' work, prompting deeper self-reflection and continuous improvement. Beyond individual reflection, these practices also play a crucial role in addressing academic integrity concerns and fostering ethical engagement with AI tools. By requiring students to articulate their decision-making processes, reflective assessments make it more difficult for AI to generate acceptable responses, as the outputs must demonstrate authentic cognitive engagement rather than superficial replication (Kadel et al., n.d.). Additionally, structured reflection on AI use itself - such as evaluating AI's benefits, limitations, and ethical considerations - promotes responsible AI engagement (Kadel et al., nd). In this way, reflective practices not only safeguard assessment integrity but also equip students with critical digital literacy skills, ensuring they are prepared to navigate AI-enhanced academic and professional environments (Perkins et al., 2024). While resource-intensive, their value in promoting deep learning, ethical awareness, and genuine student engagement underscores their importance as a sustainable adaptation strategy in AI-influenced education.

However, these approaches are not without challenges. Both individualized and process-focused assessments are resource-intensive, requiring educators to invest significant time and effort into designing, implementing, and evaluating tasks that align with these principles (Heil & Ifenthaler, 2023). For these assessments to be truly effective, they require teachers to have a deep understanding of their students' abilities, preferences, and contexts to tailor tasks appropriately. In many online education settings, where teacher-student interaction is often limited, achieving this level of familiarity can be unattainable, further complicating the successful implementation of these methods (Heil & Ifenthaler, 2023). In online education, scalability becomes an even greater concern, as managing personalized assessments or providing continuous feedback for large numbers of students can strain institutional resources (Heil & Ifenthaler, 2023).

Ultimately, although their implementation is hindered by context, individualized and process-focused assessments emerge as a robust solution to maintaining assessment

authenticity in AI-influenced education. By emphasizing personalized engagement, iterative learning, and contextual application, these approaches not only counteract AI misuse but also enhance meaningful student learning experiences, ensuring that assessments remain valid and reflective of real-world competencies. However, as their implementation can be challenging, alternative approaches have begun to emerge - directly integrating AI into assessments or relying on restrictive measures to uphold assessment validity. The following section examines this critical debate between adaptation and restriction strategies.

2.4.2 Integration vs. restriction strategies

Adaptive assessment strategies intentionally emphasize authentic cognitive engagement and HOTS - such as critical thinking, creativity, and problem-solving - through process-focused tasks like portfolios and reflective journals, thereby ensuring assessment validity despite AI's growing presence (Xia et al., 2024; Ifelebuegu, 2023). This shift is complemented by a well-recognized emerging strategy - the structured integration of AI into assessments. Rather than viewing AI solely as a threat to assessment integrity, this approach acknowledges its growing role in education and seeks to incorporate it as a powerful and accessible collaborative tool within structured evaluation tasks (Kadel et al., n.d.; Perkins et al., 2024). By guiding students in the critical and ethical use of AI, educators can design assessments that develop digital literacy while maintaining authenticity and construct validity (Lang, 2024). For example, it is increasingly common for students may be tasked with evaluating and improving AI-generated outputs, using AI tools for research and creative problem-solving under guided conditions, or given full autonomy in AI use provided there is transparency and critical engagement (Perkins et al., 2024; Lang, 2024). This integration ensures that assessments remain relevant to the ways students engage with technology in professional and personal contexts, further aligning with authentic assessment principles. Many industries and professions now use AI as a genuine collaborator, making this approach not only relevant but also essential for preparing students for future professional environments (Perkins et al., 2024; Lang, 2024). Moreover, this structured integration of AI supports the development of critical thinking and essential academic and real-world skills by providing opportunities for practice, reflection, and self-correction through immediate feedback loops (Ifelebuegu, 2023; Lang, 2024), supporting an iterative and reflective model of learning and being of particular value in online learning environments, where students may not have immediate access to teachers or peers for support and knowledge construction.

However, despite the benefits, adaptation and integration strategies also face significant challenges. Many require substantial time and training as well as institutional and curricular support for effective implementation (Smolansky et al., 2023). Educators must develop new assessment rubrics, rethink grading criteria, and provide structured scaffolding to ensure students engage meaningfully with AI rather than relying on it passively (Kadel et al., n.d; Perkins et al., 2024). This underscores the importance of equitable access, training, and carefully crafted policies to uphold fairness and consequential validity - without structured support, adaptation strategies risk reinforcing disparities rather than mitigating them.

Restriction strategies aim to uphold assessment validity in online contexts by controlling assessment conditions rather than adapting the tasks themselves, preserving construct validity

by ensuring student outputs represent independent cognitive efforts without external AI-generated interference (Anita, 2024; Kadel et al., n.d.). The most widely employed restriction methods include proctoring and monitoring tools—such as ProctorU and Examity—which utilize AI surveillance to identify suspicious behaviors during assessments, and browser lockdown software like Respondus, which restricts internet and tool access (Solomon, 2024; Abdebakin, 2024). Institutions often pair these tools with AI detection software integrated into platforms such as Turnitin, designed to identify linguistic patterns indicative of AI-generated content, reinforcing zero-tolerance policies and punitive measures against AI misuse (Anita, 2024; Solomon, 2024). These approaches offer institutions scalability, cost-effectiveness, and consistency with traditional assessment formats, thus maintaining the perceived rigor and credibility of academic qualifications (Anita, 2024; Akinwande, 2024). Nevertheless, despite their practical appeal, restriction strategies face considerable limitations, primarily due to the rapid advancement and widespread accessibility of AI technology, making current detection tools unreliable and prone to high false-positive rates (Elkhatat et al., 2023; Weber-Wulff et al., 2023). AI-generated content that is refined, paraphrased, or contextually nuanced frequently evades accurate detection, creating equity concerns as students with greater digital literacy easily bypass restrictions, undermining both detection effectiveness and consequential validity (Perkins et al., 2024; Ifelebuegu, 2023). OpenAI itself discontinued its own AI text classifier due to its low accuracy, of just 26%, and ethical concerns around using that score to punish students unfairly (OpenAI, 2023). Moreover, platforms like Turnitin explicitly caution against using their AI detection scores as the sole basis for academic penalties, recommending contextual judgment, transparency, and open dialogue instead (Turnitin, 2023).

A central issue with AI in assessment, and consequently AI detection tools, revolves around the associated accusations of plagiarism and contract cheating, or academic dishonesty - practices in which students present work and ideas that are not their own as if it were. However, a high AI score does not indicate that the ideas or effort behind a submission were not the student's own (Elkhatat et al., 2023). Students who use AI tools as writing aids, code checkers, research assistants or genuine collaborators, may inadvertently trigger high AI scores, despite contributing original thought and effort to their work and clearly acknowledging the use of it (Elkhatat et al., 2023). This creates a disconnect between the use of AI as a support tool and the assumption of academic dishonesty. Such cases demand nuanced responses, including the acknowledgement that there can be constructive engagement with AI technologies (Perkins et al., 2024) in assessment, and the opportunity for students to revise and resubmit their work if educators or policy deem it necessary, similar to how similarity scores are managed in traditional plagiarism detection systems. However, platforms like Turnitin currently do not allow students to access their own AI detection scores, removing opportunities for correction or feedback and further undermining educational principles centered on learning and growth. Addressing these concerns requires transparent communication about the tools being used, consistency in their results, and institutional policies that prioritize remediation and education over outright prohibition and punishment (Perkins et al., 2024).

Restrictive approaches also fundamentally conflict with authentic assessment principles and connectivist models prominent in modern online education, which emphasize open access to knowledge, collaboration, and real-world relevance. Blanket restrictions on AI use hinder

students' development of critical digital literacy skills, essential for thriving in professional environments increasingly reliant on AI technologies (Perkins et al., 2024; Ifelebuegu, 2023). Ultimately, while restriction strategies can be effective short-term deterrents, their reliance on flawed detection technologies, ethical contradictions, and incompatibility with contemporary educational principles highlight the need for balanced, adaptive strategies focused on higher-order thinking and meaningful integration of AI, rather than punitive enforcement alone.

Ultimately, while scalable and appropriate for specific contexts, restriction strategies alone are unsustainable in maintaining authentic student evaluation in AI-influenced education. While they can serve as short-term deterrents, their reliance on flawed AI detection tools, their incompatibility with modern learning principles, and their failure to address AI's growing role in professional fields underscore the need for a more balanced approach. To ensure valid and meaningful assessments, restriction must be forefronted by adaptive strategies that engage students in HOT and real-world application of skills, rather than relying on punitive enforcement mechanisms. Thus, a balanced approach emerges from literature as the most viable option, integrating structured AI use into assessments while retaining necessary restrictions in contexts that heavily rely on traditional formats, such as standardized large-scale summative testing, where ensuring controlled conditions is essential for maintaining credibility and fairness. Simultaneously, verification mechanisms, such as oral defenses or reflective components, can complement adaptive and integrative assessments to maintain academic integrity and authentic student evaluation (Ifelebuegu, 2023). While restriction measures still have a role in high-stakes settings, their application must be contextual and should not replace pedagogically sound assessment practices (Xia et al., 2024). Ultimately, their effectiveness is shaped by broader contextual factors, including educator perceptions, institutional policies, subject-specific demands, and curriculum constraints. Consequently, this study addresses these gaps by examining how educators can adapt AI-influenced assessments to uphold authenticity, validity, and engagement, thereby offering empirically grounded strategies for sustainable, balanced approaches to modern assessment design.

2.4.3 Influencing factors in assessment adaptation

Assessment adaptation in online education is shaped by a range of contextual factors that influence how educators perceive and respond to AI's impact on authentic student evaluation. Aligned with Situated Cognition Theory, which emphasizes how knowledge construction and application are shaped by the environment in which learning occurs, these factors - perceptions of AI, curriculum constraints, subject-specific influences, and institutional support, training, and policy - create the conditions within which educators navigate assessment adaptation.

Educators' perceptions of AI significantly influence their approaches to assessment adaptation, ranging from enthusiastic acceptance to skepticism, shaped by technological familiarity, subject context, and available resources (Shi, Ding & Choi, 2024). Enthusiastic educators—often younger, digitally literate, or working within STEM fields—tend to leverage AI capabilities creatively, favoring assessments that emphasize iterative learning, personalization, and real-world problem-solving (Frutos, Carrasco, Maza & Etxabe-Urbieta, 2024; Delello, Sung, Mokhtari & De Giuseppe, 2024; Parviz, 2024). In contrast, educators concerned about

intellectual integrity, ethical risks (e.g., plagiarism, misinformation), or unequal access to AI frequently adopt restrictive measures, limiting AI tools and potentially constraining assessment innovation (Ifelebuegu, 2023; Galindo-Domínguez, Delgado, Campo & Losada, 2024; Unal & Unal, 2024). Such divergent attitudes underscore the necessity for targeted institutional training and clear policy guidance to support educators in balancing validity, authenticity, and fairness when integrating AI (Unal & Unal, 2024).

Curriculum rigidity within standardized educational frameworks further restricts educators' flexibility to implement authentic, AI-resilient assessments (Ngoasong, 2022). Although standardized curricula offer consistency and comparability, their rigid structure favors summative assessments and recall-based tasks easily replicated by AI, reducing opportunities for formative strategies that promote deeper cognitive engagement (Ifelebuegu, 2023; Nasab, 2015). Traditional assessments suited to in-person education often become unreliable measures of authentic learning in digital environments, prompting educators to explore resource-intensive alternatives, such as e-portfolios, discussion-based assessments, and open-book tasks (Heil & Ifenthaler, 2023; Xia et al., 2024). However, effectively embedding these alternatives at scale within inflexible curricula remains challenging, highlighting a critical need to rethink standardized curricula structures to foster adaptive, authentic assessment models suitable for digitally mediated and AI-enhanced contexts (Drayton, Bernstein & Schunn, 2022; Smolansky et al., 2023).

Disciplinary contexts also significantly shape educators' responses to AI's influence on assessment integrity. Language-based subjects (e.g., literature, history) frequently depend on writing and critical analysis tasks vulnerable to sophisticated AI-generated content, raising concerns over construct and consequential validity (Kizilcec et al., 2024). Educators in these disciplines increasingly adopt strategies emphasizing personal reflection, oral defenses, and portfolio assessments to counteract AI interference, but such strategies demand robust curricular support and resources (Mortlock & Lucas, 2024; Ifelebuegu, 2023). In contrast, STEM disciplines naturally align with practical and process-based assessments, thus exhibiting greater resilience to AI. STEM tasks often require tangible experimentation, data collection, and detailed problem-solving steps, making them inherently harder for AI to replicate and thus more resilient to AI-driven shortcuts (Chan et al., 2025). Nonetheless, STEM educators must remain vigilant, continuously refining tasks—particularly in AI-sensitive areas like coding—to maintain assessment integrity and genuine student evaluation (Fan et al., 2023; Chan et al., 2025). These disciplinary differences emphasize the importance of tailored adaptation strategies that effectively balance AI's potential with risks to assessment validity.

Finally, institutional support, training, and clear policy frameworks critically influence educators' adaptation decisions and confidence in addressing AI challenges (Chan, 2023). Institutional investment beyond infrastructure—such as fostering collaborative cultures, adaptability, and digital literacy—supports innovative, authentic assessments. Conversely, rigid policies or reliance on AI-detection tools can hinder meaningful assessment innovation, preserving standardized proctoring approaches inadequate for higher-order thinking and personalization (Strielkowski, Grebennikova, Lisovskiy, Rakhimova & Vasileva, 2024). Educators require ongoing, structured professional development to deepen their understanding of AI's technical

and ethical implications, enabling them to craft assessments promoting critical thinking and problem-solving (Mills et al., 2023; Tan, Cheng & Ling, 2025; Unal & Unal, 2024). Without comprehensive institutional commitment to flexible policies, consistent educator training, and experimentation-friendly environments, the validity and authenticity of assessments in AI-influenced online education remain at risk (Chan, 2023).

2.5 Conclusion

This section synthesizes key insights from the literature review, consolidating foundational and emerging perspectives on assessment in online education. It summarizes the evolution of assessment strategies, examining traditional methods and their limitations in digital contexts, the rise of online-specific assessments, the disruptive impact of AI on assessment integrity, adaptive strategies for maintaining validity and authenticity, and the contextual factors influencing assessment adaptation. These insights are visually represented through concept maps, illustrating relationships between theoretical constructs, assessment practices, and AI's evolving role in online learning. This synthesis provides a cohesive foundation for the study's empirical investigation, linking the literature to the study's focus on how educators are designing assessments to continue being authentic measures of student learning amid AI influence.

The figure below outlines the key strengths and limitations of traditional assessment techniques in online environments, as discussed in the preceding section 2.3.1, highlighting why innovation is needed to address engagement with higher-order thinking skills and vulnerabilities to academic dishonesty:

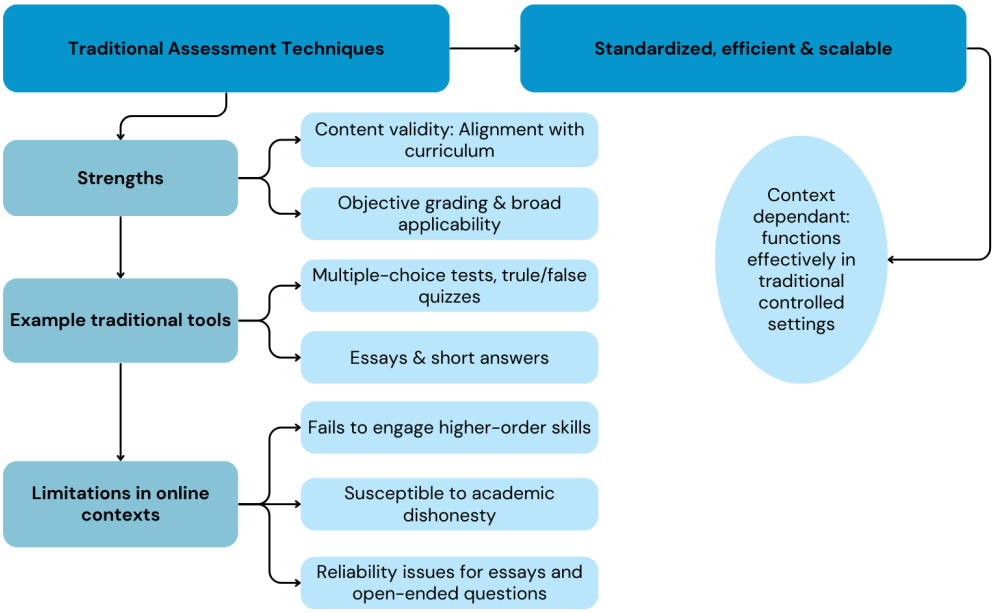

Figure 2.3 Traditional assessments and online environments.

The figure below highlights how AI transforms online assessments through personalization and adaptive feedback, while also posing integrity challenges and construct validity risks, emphasizing that assessment practices must evolve to maintain validity and authenticity in AI influenced environments, as discussed in the preceding section 2.3.2:

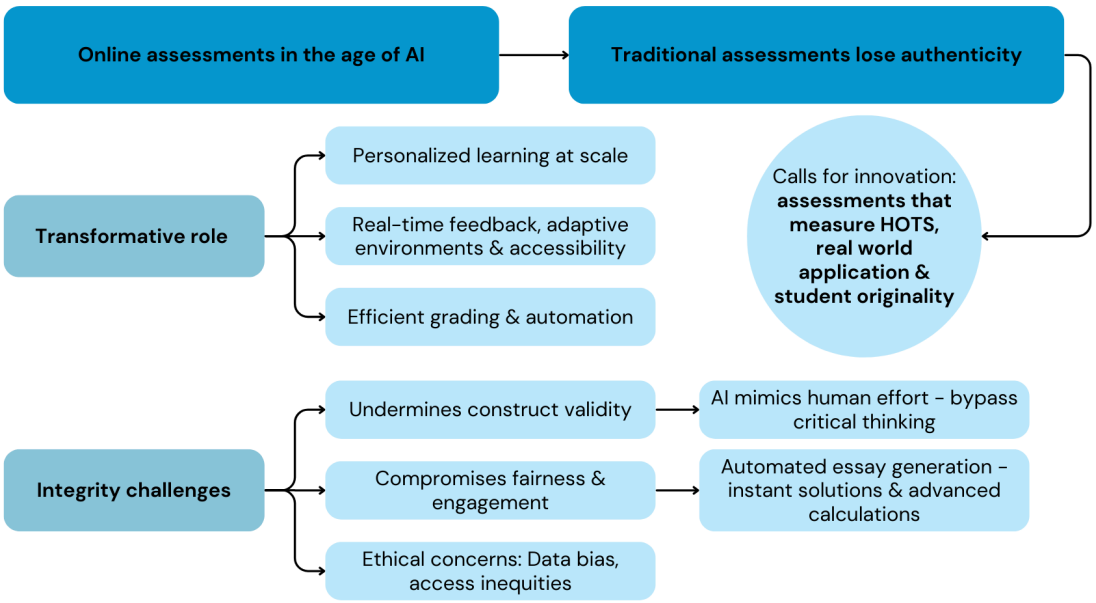

Figure 2.4 AI in online assessments.

Figure 2.5 below presents key strategies developed to address AI challenges—such as oral presentations, AI-integrated tasks, and process-focused portfolios—along with the resource demands and rapid AI evolution that often complicate their implementation, as discussed in the preceding section 2.4.1, It underscores the need for systemic support and continuous adaptation to maintain authentic student evaluations:

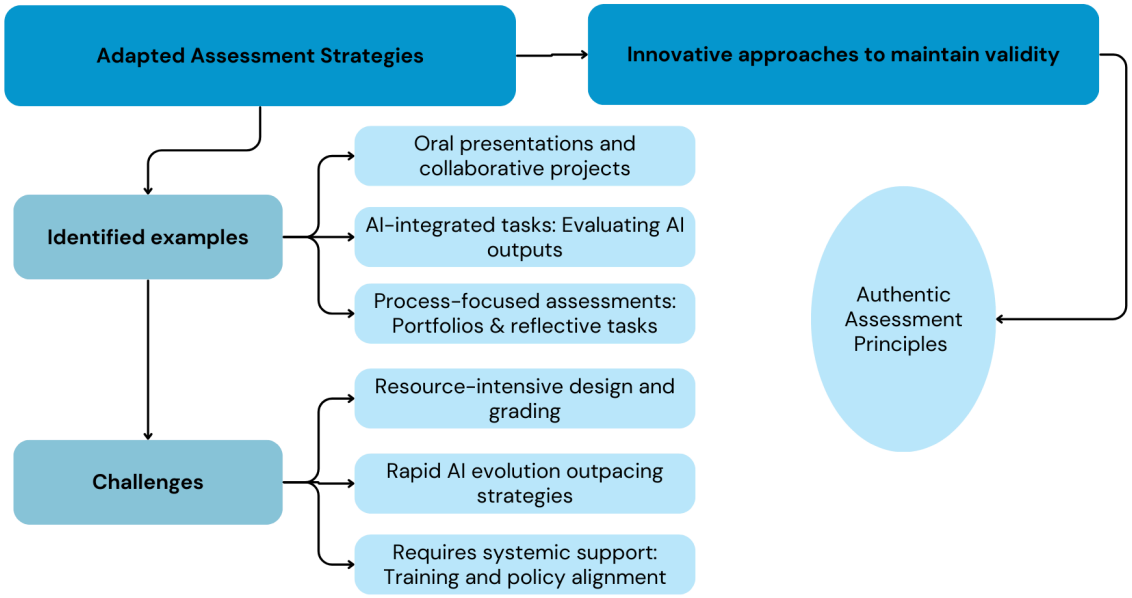

Figure 2.5 Adapted assessment strategies and challenges.

Figure 2.6 below focuses on how individualized and process-focused assessments foster authenticity in online contexts by emphasizing personalization, reflection, and iterative engagement, as discussed in the preceding section 2.4.1. These approaches align with authentic learning principles, reinforcing validity in AI-influenced environments:

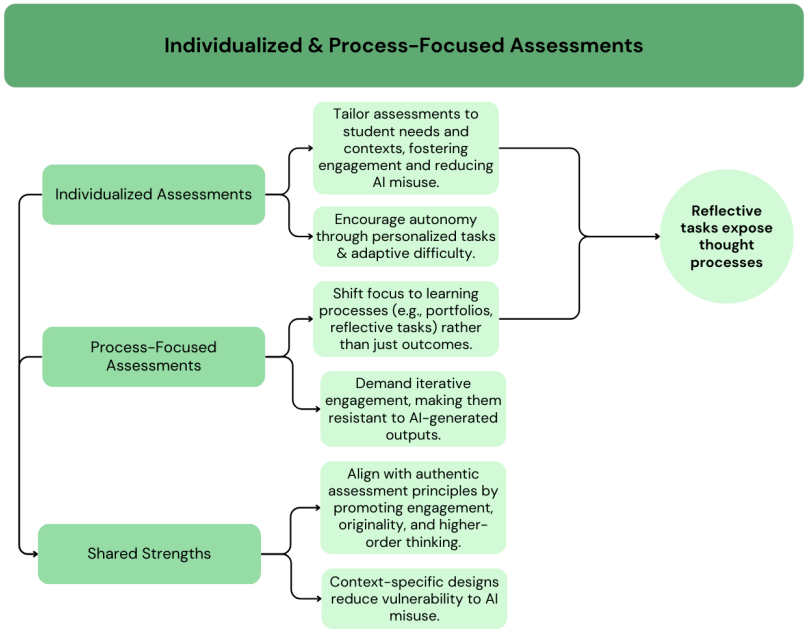

Figure 2.6 Individualized and process-focused assessments as key approaches.

Figure 2.7 below summarizes the contrast between the emergent strategies of integration and restriction in response to AI's impact on assessment, highlighting both their benefits and limitations, as discussed in the preceding section 2.4.2. While detection and restriction can be valid in certain high-stakes contexts, the figure emphasizes the importance of adaptive, higher-order thinking–oriented assessment design as a foundation for maintaining fairness and validity:

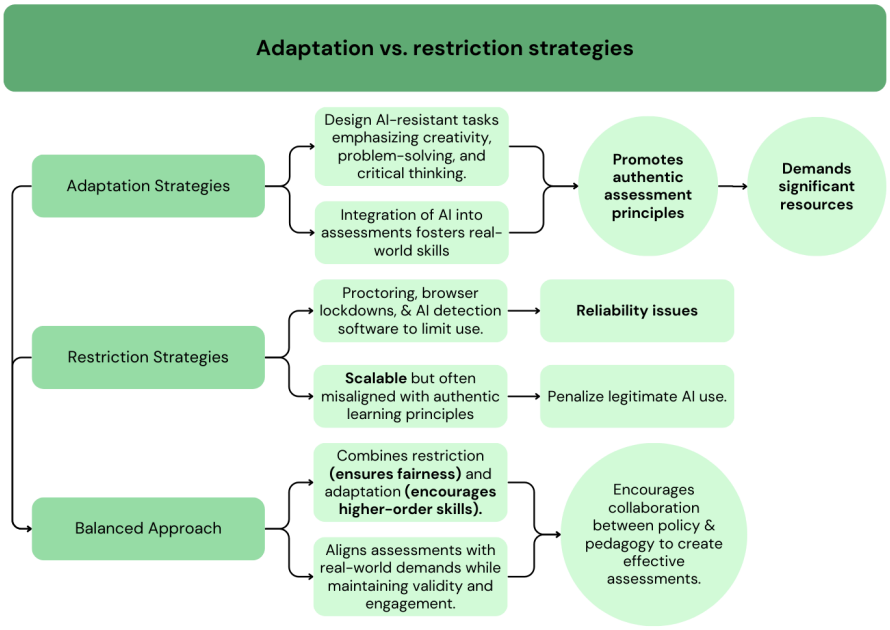

Figure 2.7 Integration vs. restriction.

Finally, Figure 2.8 below summarizes the key factors influencing assessment adaptation in AI-influenced online learning environments, including educators' perceptions of AI, curriculum constraints, subject-specific influences, and institutional support. It illustrates how these elements shape adaptation decisions, either fostering innovation or reinforcing traditional assessment methods, as discussed in the proceeding section 2.4.3:

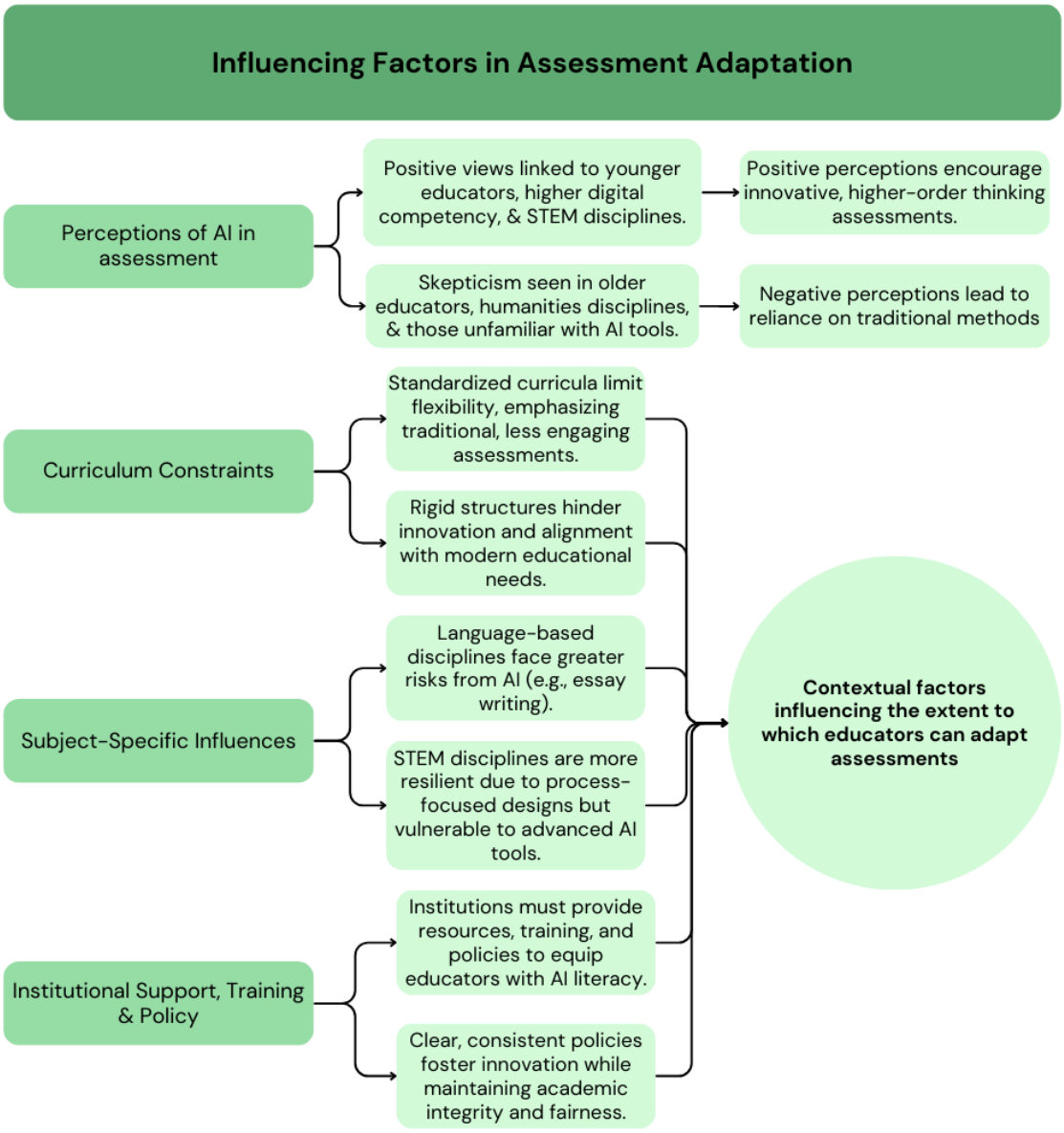

Figure 2.8 Key influencing factors in assessment adaptation.

In conclusion, the literature review highlights the complex and evolving nature of assessment in online education, particularly in response to AI's disruptive capabilities. Traditional assessment methods, while scalable and efficient, struggle to maintain validity and authenticity in digital

contexts, prompting a shift toward process-focused, individualized, and interactive strategies. However, these adaptations face challenges related to institutional support, scalability, and alignment with standardized curricula. AI's rapid advancement further complicates assessment integrity, pushing educators towards both integrative and restrictive approaches to maintain fairness and authenticity. These insights underscore the urgent need for adaptable assessment models that reflect AI's role in education while preserving meaningful student evaluation. Despite growing recognition of these challenges, a gap remains in understanding how educators in fully online schools perceive and respond to AI's impact on assessment validity and authenticity. This study addresses that gap by exploring educators' lived experiences and adaptation strategies, bridging literary insights with real-world applications. The next chapter outlines the methodology used to investigate these issues, justifying the qualitative approach and case study design, before transitioning to the empirical findings in Chapters 4 and 5.

CHAPTER 3: METHODOLOGY

3.0 Introduction

The preceding chapters established the need to explore how online educators adapt assessments to uphold authenticity amid AI's growing influence. While AI challenges traditional assessment validity, existing literature reveals gaps in understanding how educators perceive and respond to these challenges at the practitioner level. Thus, this chapter outlines the methodological approach used in this study to explore these issues, ensuring coherence between research philosophy, data collection, and analysis. It details the interpretivist, qualitative case study design (3.1), participant selection and recruitment (3.2), data collection methods (3.3), ethical considerations (3.4), Reflexive Thematic Analysis (3.5), and trustworthiness measures (3.6). The chapter concludes by summarizing methodological decisions and transitioning to the study's findings (3.7). By detailing these methodological decisions, this chapter ultimately aims to ensure that the study is rigorously designed to address its overarching research aim: to explore how online educators adapt assessment strategies in response to AI's influence.

3.1 Research design

This section provides an overarching view of the methodological choices made in this study, guided by the "research onion" convention as described by Saunders and Tosey (2012). By outlining each layer of the research process - from philosophical assumptions to the broad approach to data collection - this section aims to offer a concise rationale for how the methodological decisions align with the study's overarching aim of exploiting educators' adaptation strategies.

Research philosophy: This study embraces an *interpretivist philosophy* as it seeks to understand the subjective experiences and perspectives (Saunders & Tosey, 2012) of educational practitioners responding to AI in online assessment practices. Interpretivism is particularly suited to inquiries where the subjective meanings, experiences, and contexts of participants are central to answering the research questions (Saunders & Tosey, 2012). In contrast, a positivist approach, which prioritizes objective measurement and hypothesis testing, would be unsuitable, as it does not accommodate the contextual complexities and personal rationales that influence educators' decision-making in AI-adaptive assessment design. In the context of this study, exploring educators' perspectives and decisions about AI in online assessment practices necessitates recognizing that these decisions are shaped by each educator's unique context, beliefs, and experiences. An interpretivist orientation allows for these nuanced realities to be explored, thereby aligning well with the aim of understanding how and why educators adapt assessments as they do.

Methodological choice: Given the interpretivist philosophy, a *qualitative approach* is adopted. Qualitative methods prioritize the depth and richness of data, making them especially appropriate for capturing participants' interpretations and experiences (Saunders & Tosey,

2012). Unlike quantitative methods, which rely on numerical data and statistical generalization, a qualitative design enables the collection of detailed, context-rich insights that reveal how and why educators adapt assessments in response to AI. As the objectives of this research focus on evaluating educators' lived strategies and rationales for integrating or restricting AI in assessment settings, a qualitative design enables the collection of detailed, context rich insights that help fulfill the study's aim of comprehensively understanding the subtleties involved in these adaptations.

Research strategy: The study employs a *case study* strategy. Case studies offer intensive investigation within a bounded system (Saunders & Tosey, 2012), which in this instance is a single online school. This targeted focus aligns directly with the research objectives, enabling a evaluative exploration of how and why educators adapt assessments within a specific, real-world environment. While grounded in one institution's context, the analysis draws on broader discussions in the literature and remains transferable to diverse educational settings, illuminating potential pathways for integrating AI in online assessment across varied global contexts.

Time horizon: This research follows a *cross-sectional* design, capturing data at a single point in time (Saunders & Tosey, 2012). Given AI's rapid evolution, this approach provides timely insights into current adaptation strategies while acknowledging that future changes in AI capabilities may influence assessment further.

Data collection and analysis: The data collection methods are qualitative, combining *open-ended surveys and semi-structured interviews*, enabling a *multi-method approach* to gather both broad perspectives and deeper contextual insights (Saunders & Tosey, 2012; Braun & Clarke, 2006). Although the full details of instrument design and analysis are addressed in the subsequent sections 3.3 and 3.5, it is worth noting here that this multi-method approach supports the study's interpretivist stance by eliciting rich, subjective data on participants' attitudes, reasoning, and practices (Saunders & Tosey, 2012; Braun & Clarke, 2006). Braun and Clarke's (2006) foundation and later reflexive thematic analysis was used to interpret the findings allowing for a structured yet flexible extraction and interpretation of educators narratives. This analytic choice ultimately complements the aim of understanding how educators' perspectives and practices evolve in response to AI's influence on assessment.

3.2 Selection and inclusion criteria

This section outlines how participants were selected for the study and explains the inclusion criteria used to ensure they could provide meaningful insights into online assessment practices in AI-influenced environments, supporting the study's objectives by emphasizing an in-depth understanding of participants' experiences and the real-world challenges they face when maintaining assessment authenticity.

Sampling strategy: A *purposive sampling strategy* was selected for its effectiveness in gathering data from a specific population (Horton, Macve & Struyven, 2004) - in-depth perspectives from educators directly involved in designing and implementing online

assessments in an AI-influenced environment. This choice aligned with the study's aim of exploring and evaluating how educators adapt assessments to uphold authenticity amid the challenges posed by generative AI. As the study focused on an online school context in South Africa - where rigid curriculum structures and limited AI-specific training often leave educators to develop their own adaptive strategies (Mnguni, 2024; Mnguni et al., 2024) - targeting practitioners with hands-on experience provided insights uniquely relevant to the study's objectives. This focused approach provides in-depth insights into the challenges and adaptations necessary in these environments, leading to highly relevant data for addressing the research questions (Creswell, 2007).

Recruitment: Participants were recruited from a single online school in collaboration with the administrative body of the school. This targeted recruitment approach involved communicating directly with the administrative body of the selected online school to select educators who are deeply involved in designing and implementing online assessments. This deeply targeted method ensures the participant group is closely aligned with the research objectives (Creswell, 2007). By narrowing the recruitment to practitioners who regularly engage with assessment in an AI influenced educational environment, the selection process remained purposeful, reinforcing the contextual emphasis on educator-driven adaptations in online environments.

Inclusion criteria: All participants had at least one year of experience designing, implementing, or overseeing assessments in online learning contexts to ensure relevance to the objectives of adapting assessment practices. The participants were also currently active in teaching roles during the research process to ensure that their perspectives reflected current practices and viewpoints, aligning with a cross-sectional time design (Flick, 2014; Saunders & Tosey, 2012). This criteria was crucial to capturing a breadth of subject expertise and pedagogical approaches while maintaining close alignment with the study's purpose of understanding real-time, practitioner-level adaptations to assessments.

Sample size: Ultimately, four educators from diverse subject backgrounds participated in this study. Of these, three took part in follow-up semi-structured interviews, while one educator - though unavailable for an interview - contributed valuable open-ended survey responses. Although smaller than initially anticipated, this size is consistent with an interpretivist, qualitative design that seeks in-depth, context-rich data rather than broad statistical generalization (Creswell, 2007). This emphasis on depth over breadth ensured that the resulting data was both contextually and thematically robust (Creswell, 2007).

3.2.1 Justification for selection

The decision to focus on a single online school in South Africa reflects both practical and theoretical considerations central to the study's aims. Practically, selecting a locally situated institution facilitated efficient data collection by ensuring timely access to participants within the study's limited timeframe (Creswell, 2007). The institution's fully online structure, characterized by high digital literacy, widespread access to digital tools, and a lack of direct pedagogical supervision, makes it a realistic and contextually relevant setting for examining AI-related assessment challenges. As South Africa's online education sector expands, the urgent need for

AI-adaptive assessment strategies has become increasingly apparent, positioning this institution as an ideal case for studying how educators navigate these challenges. While not extensively long-standing, the school has established foundational systems for online pedagogy and assessment, employing educators with expertise in digital instruction. These characteristics align with the literature's broader concern that AI amplifies risks to online assessment authenticity, making the study's findings potentially transferable to other online education contexts facing similar challenges (Creswell, 2007).

Within this setting, a purposeful selection of four educators was made to capture rich, practice-oriented insights (Flick, 2024). Rather than seeking breadth in data, the study prioritized depth of perspective, consistent with qualitative, interpretivist research (Creswell, 2007; Braun & Clarke, 2006). The diverse disciplinary expertise of participants - spanning social sciences, STEM, and language education - ensures that AI's impact on assessment authenticity is examined across different subject demands. Additionally, selecting educators with recent, active experience in online assessment design was essential, as it ensured that insights reflect the rapidly evolving AI landscape in education. This focus on real-time engagement strengthens the study's ability to provide relevant, practice-based evidence on how educators maintain assessment authenticity in AI-influenced online settings. Ultimately, centering on one institution and four educators allows for an in-depth, contextually grounded exploration of AI's impact on assessment validity, while ensuring transferability to other fully online environments navigating similar assessment challenges.

3.3 Data collection methods

In alignment with the study's qualitative framework and its case study design, data was gathered in two complementary stages: (1) a Google Form survey with open-ended questions, followed by (2) digital semi-structured interviews with selected participants. This multi-method approach suited the case study nature of the study (Creswell, 2007), offering both breadth - through the survey's wide-ranging exploration of educators' initial perspectives - and depth - through the interviews' more focused inquiry into each educator's rationale and strategies for upholding assessment authenticity in an AI-influenced online environment.

3.3.1 Data set 1: Open-ended survey

To gather a broad understanding of participating educators' perspectives of assessment authenticity and the adaptation strategies they employ to uphold it, this study employed a Google Form survey featuring open-ended questions, intended to gather deep qualitative responses (Flick, 2024). By capturing the educators' initial attitudes, experiences, and strategies, this step laid the groundwork and formed the ultimate foundation for addressing the study's key objectives, particularly in relation to how educators perceive the authenticity of assessments (Objective 1) and the concrete approaches they adopt to uphold it (Objective 2).

Survey design: The survey consisted of eleven open-ended questions, grouped into five sections, each aligning with aspects of the study's objectives: Initial questions on participants'

roles and experiences ensured inclusion criteria were met and provided insight into educators' perceptions of assessment authenticity in AI-influenced contexts (Objective 1). Subsequent inquiries examined assessment validity and integrity, further addressing Objective 1 by exploring how educators evaluate AI's impact on authenticity. Questions on adaptation strategies directly aligned with Objective 2, identifying concrete actions taken to uphold authenticity. Finally, reflections on future directions provided insight into Objective 3, encouraging participants to anticipate strategies for maintaining validity in AI-affected assessments. This design, consistent with the study's qualitative, interpretivist approach (Creswell, 2007), elicited detailed, real-world insights into AI's role in assessment. The survey was structured to take approximately 45 minutes, ensuring depth without excessive burden.

Distribution and accessibility: To ensure focused and relevant responses, the Google Form link was disseminated via the online school's institutional communication channels. This controlled method of distribution ensured that only educators with direct involvement in, or knowledge of, online assessments participated, thereby maintaining alignment with the case study approach (Creswell, 2007; Horton, Macve & Struyven, 2004). An online Google Form was used as the survey to accommodate participants and mimic the inherent nature of online schools. This design choice allowed participating educators to contribute in their own time and ensured efficiency.

Ultimately, the survey provided a foundational understanding of educators' perceptions and adaptation strategies, aligning with research objectives 1 (perceptions) and 2 (adaptations). Although the survey also touched on participants' future outlook, the deeper exploration of why these approaches emerged - and how they might inform further strategies - was reserved for the subsequent interviews, thus setting the stage for addressing Objective 3.

3.3.2 Data set 2: Digital semi-structured interviews

Following the survey, digital semi-structured interviews were conducted to deepen the insights gained from educators' initial responses and to uncover the reasoning, challenges, and context-specific strategies behind their approaches and responses to AI influenced assessments. Three out of the initial four participating educators took part in the interviews - as the fourth was uncontactable due to having left the institution, although their survey data was still included in the analysis as it remained highly valuable for understanding the research objectives. The interviews (additional data set) was crucial for achieving a fuller, more relevant understanding associated with case study and other qualitative research designs, where methodological triangulation (collecting data from multiple sources) is often necessary to capture the complexity of real-world phenomena (Yin, 2014; Creswell, 2007). Although the open-ended survey revealed valuable patterns in how educators viewed and implemented assessment adaptations, it did not fully illuminate the "why" behind their choices. Thus, interviews served to bridge that gap by enabling in-depth exploration of each participant's thought process and contextual constraints, ultimately allowing for an exploration of the rationale behind their adaptations and setting the foundation for achieving objective 3 (proposing further adaptation strategies to uphold authentic student evaluations).

Interview purpose and structure: The interviews revolved around four key themes that emerged from the survey data spread over 10 open-ended questions, ensuring comparability while allowing flexibility for context-specific insights (Horton, Macve & Struyven, 2004). First, exploration of AI experiences provided insight into how educators and students engage with AI, addressing Objective 1 by clarifying attitudes and motivations. Challenges with AI in assessments examined concerns about AI's impact on validity, linking to Objectives 1 and 3 by highlighting broader issues in assessment integrity. Perceptions of assessment validity and reliability further addressed Objectives 1 and 3, evaluating how well current methods measure genuine learning in AI-driven contexts. Finally, personal assessment strategies and modifications concentrated on the design and justification of adaptation strategies, aligning with Objective 2 (uncovering the "how") while also informing Objective 3 (understanding and refining potential solutions). Sessions lasted 30 to 45 minutes, balancing depth and participant convenience.

Distribution and rationale: Digital interviews were conducted via Microsoft Teams to reflect educators' online teaching environment and accommodate their schedules. Booking forms were distributed through institutional channels, allowing participants to select suitable times, minimizing disruptions. This approach enhanced convenience and participation (Creswell, 2007) while ensuring the study captured authentic, practice-oriented insights in a fully online setting.

Ultimately, collecting two data sets - survey responses and interviews - not only offered a comprehensive view of educators' views and strategies but also strengthened the study's credibility by triangulating findings (Yin, 2014; Creswell, 2007). While the survey set the empirical foundation, the interviews uncovered the deeper "why" behind these approaches, aligning more directly with Objective 3 by laying the foundation for being able to propose further strategies. This multi-stage design not only provided a richer, more contextualized account of participants' perspectives but also helped verify and refine the preliminary themes identified in the survey, thereby strengthening the trustworthiness and depth of the overall findings (Braun & Clarke, 2006).

3.4 Ethical Considerations

This study is classified as minimal risk, as it does not involve vulnerable participants nor does it pose any greater risk than those encountered in everyday life. The study focuses solely on collecting data from educational practitioners within their professional capacity, with no questions or procedures that would expose participants to stress beyond normal daily experiences. All interactions were conducted with the utmost respect for participant comfort and consent (Creswell, 2007), with the following ethical considerations have being made to adhere to ethical standards:

Ethics clearance: This study was granted ethical clearance prior to data collection, affirming its compliance with relevant guidelines and confirming its status as minimal risk. All participants were adult educators acting in a professional capacity.

Informed consent and voluntary participation: Explicit informed consent was first obtained from the institution, clearly outlining the study's purpose, the voluntary nature of participation, the use of data, and confidentiality measures in line with ethical standards. Formal written consent was awarded by the institution - allowing for the contact of potential participants. The survey itself incorporated an electronic consent form: respondents could not proceed to the main questions without indicating their consent and understanding. For the interviews, participants confirmed their consent both in writing - through the survey's consent agreement - and verbally at the start of the session.

Recording and confidentiality: Interviews were video and audio-recorded with participants' permission. To ensure confidentiality, all identifying details - such as the name of the institution and personal identifiers - were removed from the final data and this report. Although complete anonymity was not possible (as names and emails needed to be collected during the collection of data set 1 to enable the collection of data set 2), every effort was made to maintain confidentiality by using pseudonyms and anonymizing references in all transcripts and analyses.

Data storage and security: Survey responses and interview recordings were stored on a password-protected personal device, with online access restricted. No data was shared externally without being fully anonymized. This safeguarding of information upheld the privacy measures expected in qualitative, interpretivist research, where detailed experiences are gathered while respecting participants' rights and well-being (Creswell, 2007).

3.5 Data analysis

All data - both survey responses and interview transcripts - were examined manually, aligning with the convention of Reflexive Thematic Analysis (Braun & Clarke, 2006, 2019, 2021). This approach proved well-suited to the study's interpretivist, qualitative orientation and single-case design (Creswell, 2007; Saunders & Tosey, 2012), as it allowed for the exploration of educators' subjective interpretations of AI-influenced assessments while systematically organizing recurring patterns. In accordance with the study's objectives, the analysis, or creation of themes, sought to understand not only how educators perceive assessment authenticity (Objective 1) and the adaptive strategies they employ (Objective 2), but also the deeper reasons behind those adaptations in order to propose further strategies (Objective 3).

Reflexive Thematic Analysis is particularly appropriate for interpretivist case studies because it recognizes that themes are co-constructed from both participant narratives and the researcher's theoretical lens (Braun & Clarke, 2019; Creswell, 2007). In addition, it accommodates a multi-stage and iterative data collection process: integration of survey and interview data was central to this study, with the initial survey themes informing the direction of further data collection (interviews), and the interview transcripts subsequently challenging, refining, or expanding those themes (Braun & Clarke, 2021) and reconfiguring the thematic structure (Creswell, 2007). The thematic analysis of data involved:

Familiarization with the data: Upon receiving survey responses, the data was read and re-read to gain an initial impression of the emerging patterns - such as perceived threats to validity or early evidence of adaptive strategies. This immersive process not only shaped an early sense of potential themes but also guided the design of subsequent interview questions (Braun & Clarke, 2019), ensuring deeper investigation into the “why” behind initial observations.

Generating initial codes and preliminary themes: Survey data was systematically coded and categorized based on key research objectives, identifying themes related to assessment authenticity, validity concerns, and AI-related strategies (Braun & Clarke, 2006). An inductive coding approach allowed patterns to emerge naturally from participants' responses, primarily capturing the "what" of educator practices (Objectives 1 and 2). These codes were then collated into broader themes, such as monitoring practices and process-focused task design, to map a cohesive representation (Braun & Clarke, 2006; Creswell, 2007) of how educators navigate AI’s impact on assessment.

Integrating interview data: The interview transcripts were then coded using the same reflexive, inductive approach, after which each new insight was mapped against the themes initially derived from the survey data (Braun & Clarke, 2019). In this process, interview data were used to challenge, extend, or validate the preliminary themes, as well as add depth where participants provided additional context or rationale for their strategies. In some cases, entirely new insights prompted the creation of fresh themes or the significant expansion of pre-existing categories. This thorough comparison across both data sets supported a comprehensive integration and triangulation of findings (Yin, 2014; Braun & Clarke, 2019), aiming to form a single cohesive narrative of educators’ perceptions, methods, and motivations.

Reviewing, refining and naming final themes: With both sets of data analyzed in tandem, the emerging themes were re-examined to ensure they accurately reflected participant experiences and aligned with the research objectives (Creswell, 2007). Some codes were merged where interview data provided deeper justification for survey findings, while contradictions or new insights led to theme refinement (Braun & Clarke, 2019; Yin, 2014). This reflexive process ensured the final themes captured both core survey patterns and key interview insights, strengthening the overall analysis.

Producing the report: The final themes were clearly defined, organized, and supported by representative quotes from both survey and interview data (Braun & Clarke, 2006). While Chapter 4 presents each data set separately, the thematic analysis (Chapter 5) integrates them into a cohesive picture of educators’ practices and motivations. This triangulation enhances credibility (Yin, 2014) and demonstrates how reflexive thematic analysis adapts to multiple data sources (Creswell, 2007; Braun & Clarke, 2021). Themes were then interpreted within the conceptual framework, ensuring alignment with study objectives and contributing to a deeper discussion on assessment adaptation in AI-influenced online education.

Ultimately, by employing two data sets - survey and interviews - and analyzing them within the same thematic framework, the study leveraged methodological triangulation to build a richer

understanding of the ultimate aim (Yin, 2014). This type of thematic analysis allowed for an initial broad mapping of educators' perceptions and strategies through the survey, while interviews provided deeper context and rationale. The approach enabled themes to evolve reflexively, as interview insights both reinforced survey findings and introduced new perspectives, demonstrating its adaptability to emerging evidence (Braun & Clarke, 2021). This multi-stage process aligns with the research design by capturing the *what, how,* and *why* behind educators' AI-adaptive assessment practices.

3.6 Reliability and trustworthiness

Establishing reliability and trustworthiness in an interpretivist, qualitative case study requires careful attention to how data are collected, analyzed, and reported (Creswell, 2007; Nowell Norris, White & Moules, 2017). To ensure that the study's findings accurately represent educators' experiences and perspectives on AI-driven assessment, several strategies were employed, aligned with widely recognized criteria - credibility, dependability, confirmability, and transferability - as applied here to reflexive thematic analysis (Braun & Clarke, 2006, 2019, 2021):

Credibility was reinforced through targeted sampling - focusing on educators actively involved in AI-influenced assessments, ensured that the data collected was both detailed and immediately relevant to the research objectives (Creswell, 2007; Horton, Macve & Struyven, 2004). Additionally, the integration of multiple data sets further supported credibility by enabling a form of triangulation and the cross-verification of emerging themes (Yin, 2014; Nowell et al., 2017). Lastly, participants' verbatim quotes were used to illustrate themes, allowing readers to interpret how educators navigate authenticity challenges in their own words and thus interpret and judge the plausibility of the findings (Braun & Clarke, 2006).

Dependability was maintained by applying a consistent analytic approach - Reflexive Thematic Analysis in this case - to both data sets to ensure consistency in how codes and themes were identified (Nowell et al., 2017). Although the study does not include an exhaustive record of each analytic step, the same coding style and interpretive principles were used for the survey and interview data, ensuring a uniform process that allowed for meaningful comparisons (Creswell, 2007).

Confirmability was addressed by recognizing how my own interpretive lens influenced coding decisions, as reflexive thematic analysis encourages ongoing self-reflection on biases and assumptions (Braun & Clarke, 2021). This was done by including a reflective section in the study, where the research process and findings are reflected upon and the potential effects of my perspective and biases are acknowledged. Additionally, attention was given to preserving the original intent and meaning of participants' comments (Braun & Clarke, 2021), as well as ensuring codes and themes were drawn directly from data, so as to not distort meaning. Instead of keeping extensive analytic memos, the focus was on acknowledging bias and preventing any distortion of participants' words or omission of important nuances. This approach aimed to ensure that final interpretations remained grounded in the data (Nowell et al., 2017).

Transferability was demonstrated by providing a detailed account of the institutional context, AI integration, and educators' professional backgrounds, allowing readers to assess the applicability of findings to contexts facing similar constraints or opportunities (Nowell et al., 2017). In line with interpretive and qualitative research, participating educators' experiences were documented in depth - through quotes and tables - so readers can ascertain how findings might be relevant to other settings with analogous constraints or opportunities (Creswell, 2007). The study further reinforced transferability by linking its findings to broader literature on diverse educational settings facing comparable AI-driven assessment challenges. While focused on a single online school in South Africa, the study incorporated literature from various geographical and institutional contexts, highlighting shared characteristics of AI-influenced educational settings, and establishing that adapting assessments for authenticity in AI influenced environments is a global challenge, not one confined to a single institution.

Ultimately, by systematically applying these trustworthiness criteria - credibility, dependability, confirmability, and transferability - the study ensures that its findings are both rigorously developed and meaningfully situated within the broader discourse on AI-influenced assessment adaptation. The integration of multiple data sources, consistent analytical methods, reflexive engagement with bias, and transparent documentation of context all contribute to a robust qualitative inquiry (Creswell, 2007; Nowell et al., 2017).

3.7 Conclusion

This final section of the methodology chapter aims to provide a concise summary of the methodological choices made throughout the study and their alignment with the research aim and the chosen research conventions. The summary table below distills these methodological elements, aiming to offer a clear and concise reference point for understanding the study's methodological underpinnings.

Table 3.1 Summary of methodological elements

Methodological element	**Choice**	**Rationale and alignment**
Research philosophy	Interpretivist	Explores educators' subjective perspectives on AI in online assessments (Saunders & Tosey, 2012). Enables in-depth understanding of how and why educators adapt assessments.
Approach	Qualitative	Allows for rich, detailed data capturing educators' lived experiences, consistent with Objectives 1 and 2 (Creswell, 2007).
Research strategy	Single-case study	Focuses on one online school in South Africa for an in depth exploration of educator assessment adaptations -

		facilitates a concentrated investigation of real-world AI challenges and solutions (Saunders & Tosey, 2012).
Time horizon	Cross-sectional	Provides a current “snapshot” of educator strategies under evolving AI conditions. Captures contemporary practices in alignment with the study’s objectives (Saunders & Tosey, 2012).
Data collection Methods	Open-ended survey and semi-structured interviews	Triangulation of data sources (Yin, 2014; Creswell, 2007) to address Objectives 1, 2, and 3. Survey gave breadth (initial mapping); interviews added depth (rationale behind strategies).
Sampling strategy	Purposive sampling	Targets educators actively adapting assessments in response to AI’s influence. Ensures data relevance, depth, and direct alignment with research objectives (Horton, Macve & Struyven, 2004).
Sample size	Four educators	Consistent with interpretivist, qualitative designs prioritizing in-depth insight. Promotes nuanced understanding of adaptation strategies in an online school context (Creswell, 2007).
Data analysis	Reflexive Thematic Analysis	Systematically interprets patterns while acknowledging researcher reflexivity. Integrates both data sets (survey and interviews), supporting thematic coherence and alignment with research objectives (Braun & Clarke, 2006, 2019, 2021).
Ethical classification	Minimal risk	Adult educators acting in a professional capacity. Adherence to consent, confidentiality, and ethical storage protocols (Creswell, 2007).
Reliability and trustworthiness	Credibility, dependability, confirmability, transferability	Ensured via targeted sampling, triangulation, reflexive acknowledgment of bias, and rich contextual descriptions (Nowell et al., 2017).

With the research methodology established, the proceeding Chapter 4 presents the data, highlighting initial themes and key observations from both the survey and interview data, while Chapter 5 moves into a deeper analysis of the final emergent themes.

CHAPTER 4: PRESENTATION OF DATA

4.0 Introduction

Chapter 4 builds on the methodological framework established previously by presenting the empirical findings of the study. This chapter details how educators adapt assessments in response to AI's influence on online learning, presenting data from open-ended surveys and semi-structured interviews. Building on the literature review, which highlighted the challenges AI poses to traditional assessment validity (Xia et al., 2024; Ifelebuegu, 2023) and the limitations of purely restrictive approaches (Perkins et al., 2024; Elkhatat et al., 2023), this study empirically examines how online educators perceive and respond to these challenges. The data presented in this chapter directly contributes to Objective 1 by exploring educators' perceptions of AI's impact on assessment authenticity, Objective 2 by identifying the concrete strategies they implement, and Objective 3 by assessing how these strategies might be further refined.

To achieve this, the chapter is structured as follows: Section 4.1 provides contextual background on the institution and participants, helping to situate the findings. Section 4.2 presents an overview of the data, first summarizing the survey responses before expanding on the deeper insights obtained from interviews. Section 4.3 offers a summary and transition, synthesizing key findings and preparing for the thematic and comparative analysis in the following chapter. By presenting the data in this way, this chapter lays the empirical foundation for analyzing how educators navigate AI's influence on assessment authenticity, ensuring that the findings are clearly linked to the study's overarching research aim and objectives.

4.1 Participant and institutional contexts

The preceding chapters established the need to explore how online educators adapt assessments in response to AI's influence. To contextualize the study's findings, this section outlines the institutional setting and participant backgrounds, providing essential insight into the teaching environment and professional experiences that shape assessment adaptation. This section is structured as follows: Section 4.1.1 describes the institutional context, detailing the school's fully online structure, curriculum framework, and technological integration, which influence educators' assessment strategies. Section 4.1.2 presents participant profiles, summarizing their teaching experience, subject expertise, and key assessment approaches in response to AI. Understanding these institutional and participant contexts ensures that the study's findings are interpreted within their specific teaching environments, offering a foundation for exploring how educators navigate AI's challenges in assessment design.

4.1.1 Institutional context

The institution where the participants teach is a fully online school providing education to students from Grades 4 through 12. It operates within the framework of a recognized national curriculum (IEB) and emphasizes high engagement and individualized support. The school features small class sizes of an average of eight, designed to foster close-knit learning

environments where students receive personalized attention. Its teaching approach is supported by a technology-driven learning platform that allows students to follow customized learning paths. The institution balances academic support with social-emotional development, using tools like virtual check-ins, workshops, and masterclasses. Technology is integrated throughout its teaching and assessment practices, reflecting the school's commitment to innovative, student-centered education.

The institution's structure and approach provide a unique context for exploring the challenges and opportunities of assessment in a fully online environment influenced by AI and what adaptations are being implemented to ensure the authenticity of assessment in this context. The small class sizes and personalized learning approach provide a unique setting for implementing reflective and authentic assessments, potentially allowing educators to closely monitor student progress and gauge the effectiveness of their modifications. At the same time, the school's extensive use of technology and the inherently digital nature of its environment underscore the pressing need to address issues of academic integrity and AI misuse. Understanding this context is essential for situating the findings of the study and exploring how educators navigate the complexities of assessment adaptation in such a setting.

4.1.2 Participant profiles

This section introduces the four educators who participated in the study, summarizing their roles, experience, and perspectives on adapting assessments in AI-influenced online education. Their diverse subject expertise and approaches - ranging from reflection-based adaptations to AI-restrictive strategies - provide valuable insight into how different disciplines navigate AI challenges in assessment. Table 4.1 below presents an overview of their backgrounds and key assessment strategies.

Table 4.1 Participant profiles and assessment perspectives

Pseudonym	Current role	Teaching experience	Area of expertise	Key assessment perspective
Educator 1	Geography teacher	12 years (3 years online)	Geography (Grades 10 - 12)	Emphasizes reflection and process-based learning to uphold authenticity, reducing AI-generated responses' effectiveness.
Educator 2	Physical science and math literacy teacher, content developer	11 years (3 years online)	Physical science, math literacy (Grades 10 - 12)	Designs task-specific, practical assessments (e.g., experiments, data collection) to require individual application, making AI-generated responses less effective.
Educator 3	English	7 years (2.5	English	Relies on technological

	subject specialist, content developer	years online)	(Grades 4 - 6)	monitoring to track student behavior and restrict AI access rather than redesigning assessments.
Educator 4	Afrikaans subject specialist, content developer	5 years (2 years online)	Afrikaans	Utilizes AI-restrictive platforms to block AI access during assessments, reflecting an institutional control approach rather than direct adaptation.

This table highlights the diverse subject expertise and assessment strategies of the participants, ranging from adaptation-focused approaches (reflection-based and practical tasks) to technology-driven restriction strategies (AI-blocking tools and monitoring software). This diversity provides a valuable foundation for understanding how educators in different disciplines navigate AI's challenges in online assessments and informs the study's analysis of adaptation vs. restriction strategies.

4.2 Overview of findings

This section presents an overview of the key findings from the study's two data sets: survey responses and interviews, providing insight into how educators perceive and adapt to AI's impact on online assessments. The survey data (4.2.1) captures broad trends in educators' concerns, strategies, and perceptions, forming the foundation for identifying key themes. The interviews (4.2.2) further explore the rationale behind these responses, offering deeper insights into why educators adopt specific adaptation strategies and exposing institutional, curricular, and subject-specific constraints that shape their decisions. Each data set contributes uniquely to the research objectives: The survey data primarily addresses Objectives 1 and 2, exploring educators' perceptions of assessment authenticity in AI-influenced environments (Objective 1) and the strategies they currently implement to uphold it (Objective 2). The interviews expand on these insights, validating themes and contributing to Objective 3 by uncovering systemic influences and potential innovations in assessment adaptation. While the final thematic analysis in the proceeding Chapter 4 synthesizes both data sets, this section first distinguishes between patterns observed across both sources and new insights that emerged exclusively in interviews. By structuring the findings in this way, this section aims to provide a clear and structured foundation for the subsequent analysis, ensuring that emergent patterns and relationships within the data are well presented and contextualized before being examined in relation to theory and literature in the discussion.

4.2.1 Data set 1: Survey

This section presents an overview of the survey data collected from Educators 1 - 4, providing insight into their perceptions of AI's impact on assessment authenticity (Objective 1) and the adaptation strategies they employ (Objective 2). The survey explored educators' familiarity with

AI, their views on assessment validity, and the methods they use to maintain authenticity, with reflections on future directions offering preliminary insights for Objective 3. These responses establish a foundation for exploring how educators navigate AI's challenges in online assessment and set the stage for further exploration in the interview data.

The survey consisted of 11 open-ended questions, organized into 5 sections, and was designed to take approximately 45 minutes to complete. Four educators from the selected school participated, providing insights across these five key areas:

1. **Participant role and experience**: Explores each educators' current position and experience in online education.
2. **Understanding and exposure to AI**: Investigates how educators and their students currently interact with AI technologies in the learning environment, revealing familiarity levels and initial attitudes.
3. **Perceptions of assessment validity**: Gathers insights into the validity and authenticity of current online assessments amid rising AI use, probing whether traditional methods remain effective or need adaptation.
4. **Strategies and adaptations**: Focuses on the modifications educators have implemented, or plan to implement, to keep assessments genuine despite AI usage among students.
5. **Reflections on future directions**: Captures the educators' outlook on how assessments in online education might evolve, considering rapid AI advancements and their potential implications for fairness and authenticity.

The survey data was analyzed inductively using thematic analysis (Braun & Clarke, 2006), where open coding identified recurring ideas, which were then categorized into broader thematic groups. This iterative process ensured that themes emerged naturally from the data, accurately reflecting educators' perspectives (Braun & Clarke, 2019; 2021). The analysis of survey data revealed four key themes as represented through the descriptions and Tables 4.2 - 4.5 below.

Theme 1: Perceptions of AI and its capabilities: Educators expressed varied perspectives on AI, ranging from seeing it as a valuable resource for learning to viewing it as a threat to academic integrity. Educator 1 emphasizes AI's potential to enhance research and learning, while Educator 4 highlights concerns about authorship and originality. Educator 2 presents a balanced view, acknowledging AI's dual role as both a tool and a challenge requiring strategic adaptation in online education.

Table 4.2 Educators' perceptions of AI in online education and assessment

Educator	Quote
1	*"Teacher - planning lessons, first step in research; students - first steps when researching, studying, asking AI to explain difficult concepts in simple terms."*

	"Lazy students are always going to try short cuts, teaching them the importance of learning rather than just getting good grades can overcome some of the challenges that AI presents."
	"Embrace AI's usefulness in doing research that can be used to create something unique."
2	*"The subjects I teach do not require much use of AI as I try to provide as much authentic material for them to use to limit them from relying on AI responses."*
	"It is very easy to spot when learners have used AI in practical write-ups or projects as the words used would not normally be used by the learners."
	"Giving a written task as part of a project. Learners are led to use AI and it does become difficult to assess in terms of authenticity. I have moved away from these sorts of assessments."
	"I think educators have their work cut out for them, however, just as quickly as AI technologies are being improved, there are also measures being adapted to counteract the negative use of AI in assessments. It is about balance. AI technologies are not all bad, but the use of these technologies needs to be monitored in the educational sector."
3	*"I use Grammarly to assist with sentence construction, punctuation, etc. in my own work. Students are not allowed to use this when working on an assessment. Other than that, my learners do not (or are not allowed to) use AI technologies to assist with their work tasks."*
	"A couple of times, I have had to 'let it go' and mark the task without pursuing my suspicion [of AI use] with the learner or parents… this is very difficult to do"
4	*"Learners make use of AI for their assessments in Afrikaans. Learners struggle with writing and speaking the language, therefore, they make use of AI to write their tasks and Google Translate to translate their tasks from English to Afrikaans."*
	"Learners copy and paste from AI tools, and the challenge would be trying to identify and prove whether the work submitted is truly the work of the learner."
	"That we integrate the use of AI tools in our assessments in a positive way. This can help ensure that we teach learners the correct way to use AI rather than copy and pasting from AI."

This table presents participating educators' survey quotes reflecting varied perceptions of AI's capabilities in online education and assessment - some see AI primarily as a learning tool, while others view it as a threat to academic integrity. These quotes illustrate the dual nature of AI as both an enabler of creative student work and a challenge that requires careful monitoring and adaptation.

Theme 2: Validity and authenticity of assessments: A major concern across respondents was how to maintain the authenticity and validity of assessments in the face of growing AI use by students. Educators 1 and 2 acknowledge the need for adaptation to preserve authenticity, while Educators 3 and 4 feel that, with certain restrictions, current online assessments can still be valid. Nonetheless, many point out how traditional methods might fail to capture true student learning when AI is prevalent, although purely restrictive approaches might also be insufficient.

Table 4.3 Educators' observations on assessment validity and authenticity

Educator	Quote
1	*"I think all types of assessments probably need an update, with the focus shifting to assessing the process rather than the content."*
2	*"It depends on the subject. With regards to Math and Science, it is easier to maintain validity and authentication of online assessments as the outcome is largely based on learner understanding and method rather than the answer."*
	"Educators need to know their students, if you understand how your student responds, speaks, and answers questions, then you will be able to identify when your student has used AI in their work."
3	*"Changes are needed, and have been made. However, we are continuously learning what assessments need to change or be adapted to suit the online environment… however, at present, I feel the assessments are valid and authentic. We have processes in place to detect whether AI was used to generate/assist student work."*
	"Sometimes, even after following the process… it is still impossible to prove that a learner used generative AI for their work."
	"External markers marked many assessments and had a much lower vested interest in a learner's true academic journey. Many instances of plagiarism went unchecked because external markers were not paid when giving a 0 and flagging a task for plagiarism."
4	*"I do believe that online assessments are valid and authentic to a certain extent when making use of the correct assessment platform online."*
	"Learners copy and paste from AI tools, and the challenge would be trying to identify and prove whether the work submitted is truly the work of the learner."

This table presents survey responses highlighting educators' concerns about AI's impact on the validity and authenticity of online assessments. These responses highlight the tension between traditional assessments - potentially undermined by AI-generated solutions - and the adjustments some educators feel are necessary to accurately measure student knowledge.

Theme 3: Adaptation of assessments to counter AI ase: Several educators proposed alternative assessment strategies that reduce AI's effectiveness in producing ready-made

answers. Educators 1 and 2 emphasize reflection, process-based assessments, and task-specific designs that make AI-generated responses less useful. Conversely, Educator 4 does not focus on adapting tasks themselves but rather uses technological restrictions as a means to ensure authenticity of assessment (explored in Theme 4).

Table 4.4 Educators' strategies for adapting assessments

Educator	Quote
1	*"There is a need to move away from tasks that just require students to re-present the ideas of others and rather focus on reflecting on what I've learned through the process of exploring other thinkers' ideas."*
	"Questions should be asked in such a way that it exposes the learners' way of thinking; in this way AI-generated answers are spotted more easily."
	"Less exams and more process-focused assessments with real world outcomes, i.e., students creating something useful to show their understanding rather than getting a high score in a timed test."
2	*"In some cases such as practical write-ups where the opportunity to use AI-generated answers is greater, learners are encouraged to summarize and rephrase or structure information using referencing techniques."*
	"When designing an assessment, the questions should be structured in a way such that the learner would need to understand the method to answer."
	"I try to design my assessments in a unique way that focuses on learner knowledge and the individual task at hand and is task-specific, which makes it more difficult to have AI-generated responses."
	"Designing tasks where results are based on individual findings and are not generic. For example, in Math Literacy, I would do a measurement task where in a live lesson learners would measure the dimensions of their work table and calculate the cost of making a tablecloth. The answers are unique to each student and AI cannot assist."
3	*"Topics for creative writing must be chosen carefully to decrease the chances of using generative AI tools."*
4	Educator 4 does not focus on adapting assessments themselves in the survey. Instead, their strategy centers on restricting AI use through technological controls and platforms, which will be explored in more detail in Theme 4.

This table presents educators' approaches to modifying assessments to uphold authenticity, emphasizing process-focused tasks, real-world applications, and structural modifications to reduce AI's effectiveness in producing generic responses. This underscores a shift away from rote tasks and toward deeper demonstrations of learning as a means to ensure authenticity.

Theme 4: Technological tools and institutional support: Educators highlighted institutional policies and AI detection tools as key components in maintaining assessment integrity. Some, like Educator 1, advocate for system-wide measures discouraging AI-based *“shortcuts”*, while others, like Educators 2 and 3, emphasize AI-detection software and platform restrictions. Educator 4 relies on assessment platforms that limit external access, reinforcing the role of institutional policies in maintaining authenticity.

Table 4.5 Educators’ use of technological tools and policies for assessment integrity

Educator	Quote
1	*"Access to effective AI detection software and a system-wide rejection of tasks that allow AI-produced answers to be celebrated."*
2	*"There are a lot of resources available, I think it is useful to have apps that can quickly and efficiently identify when the majority of a task is AI-generated or sourced. These apps save the educator a lot of time and allow for authentication of assessments."*
	"Administrators and policymakers need to constantly be up to date with new AI technologies and available apps to counteract negative use of AI."
3	*"Students submit using Google Docs, which has a built-in AI/plagiarism checker. Additionally, upon suspecting plagiarism/use of AI, teachers can check a document's version history. This shows us how long a child spent on the assessment and shows minute-by-minute changes, so when a learner copies and pastes a big chunk of text from elsewhere, we can track this change and do further investigations."*
	"For comprehension and language assessments, learners write it on a platform called Exam.net. You can change settings on this platform to kick a student out of an assessment if another tab is opened or the student goes off the page during the writing time."
	"Teachers need careful training by an expert, whether that expert is someone employed at the online school or an outsider. A paid-for generative AI detector is necessary. A robust process followed by all teachers is needed, with the flexibility for this process to change/adapt as and when needed."
4	*"We have made use of assessment platforms which restrict learners from opening other tabs or clicking on other screens that make use of AI tools. This means that the learner is only able to have the assessment tab open."*
	"Having critical discussions around AI and finding the best solutions and methods to detect AI and prevent the use of AI especially for formal assessments."

This table presents survey responses on the use of AI-detection tools, monitoring platforms, and institutional policies to counteract AI misuse in online assessments. These strategies illustrate

the broader support systems - beyond individual lesson design - needed to address AI challenges in online education.

In addition to the creation of themes and as a means to deepen the and ground the thematic analysis, a further deductive analysis was conducted to see how the participating educators perspectives and strategies from the survey aligned with the established conceptual framework and associated constructs, this alignment and misalignment is presented through the descriptions and Tables 4.6 - 4.8 below.

This revealed that all participating educators are concerned with maintaining the validity of their assessments in some form amid increasing AI capabilities and use by students in online environments. Their strategies and perspectives touched upon the main constructs of Validity Theory in the following ways:

Table 4.6 Educators' alignment with Validity Theory constructs

Construct	Educator	Quote
Construct validity	1	*"Questions should be asked in such a way that it exposes the learner's way of thinking, in this way AI-generated answers are spotted more easily."*
	2	*"When designing an assessment the questions should be structured in a way such that the learner would need to understand the method to answer."*
	3	*"Topics for creative writing must be chosen carefully to decrease the chances of using generative AI tools."*
	4	N/A
Consequential validity	1	*"Lazy students are always going to try shortcuts, teaching them the importance of learning rather than just getting good grades can overcome some of the challenges that AI presents."*
	2	*"It is about balance. AI technologies are not all bad but use of these technologies needs to be monitored in the educational sector."*
	3	*"Students are not allowed to use this when working on an assessment. Other than that, my learners do not (or are not allowed to) use AI technologies to assist with their work tasks."*
	4	*"Learners copy and paste from AI tools and the challenge would be trying to identify and prove whether the work submitted is truly the work of the learner."*
Content validity	1	*"Teacher – planning lessons, first step in research; students – first steps when researching studying, asking AI to explain*

		difficult concepts in simpler terms."
	2	*"The subjects I teach do not require much use of AI as I try to provide as much authentic material for them to use to limit them from relying on AI responses."*
	3	*"I feel the assessments are valid and authentic. We have processes in place to detect whether AI was used to generate/assist student work."*
	4	*"I do believe that online assessments are valid and authentic to a certain extent when making use of the correct assessment platform online."*

This table maps survey responses to three constructs of Validity Theory - Construct Validity, Consequential Validity, and Content Validity - demonstrating how educators ensure assessments measure intended skills and maintain integrity amid AI use.

As seen in the above Table 4.6, educators employed different strategies and held differing perspectives in regards to upholding construct, consequential, and content validity in AI-influenced assessments. Educators 1 and 2 prioritized construct validity by designing tasks that expose students' thought processes, requiring method demonstration and individualized responses to ensure authentic learning. In contrast, Educator 4 relied on detection tools rather than adapting tasks to assess cognitive engagement. Regarding consequential validity, all educators acknowledged AI's impact on fairness and integrity. Educator 1 warned of students taking "*shortcuts"*, while Educator 2 advocated for balancing AI's benefits with monitoring to maintain fairness. Educator 3 focused on restricting AI entirely, whereas Educator 4 raised concerns about proving authorship in AI-generated work. For content validity, Educator 1 integrated AI as a research tool, while Educator 2 limited AI reliance by using *"authentic materials*". Educator 3 relied on detection systems to verify student work, and Educator 4 used secure platforms to restrict AI access - ensuring alignment with prescribed content.

The analysis showed varied alignment with Authentic Assessment Theory among educators in the following ways:

Table 4.7 Educators' alignment with Authentic Assessment constructs

Construct	**Educator**	**Quote**
Reflection in and on action	1	"emphasis on the process rather than the content… focus on reflection on what I've learned through the process of exploring other thinkers' ideas."
	2	"*outcome is largely based on learner understanding and method rather than the answer."*

	3	*"Online schools/teachers need to be highly adaptable and continuously learning with the growth and development of AI technologies in order to keep the authenticity and validity of assessments intact."*
	4	N/A
Student engagement	1	“Embrace AI’s usefulness in doing research that can be used to create something unique.”
	2	“I try to design my assessments in a unique way that focuses on learner knowledge and the individual task at hand so it makes it more difficult to have AI-generated responses.”
	3	N/A
	4	N/A
Real-world tasks	1	“Less Exams and more process-focused assessments with real-world outcomes, i.e. students creating something useful to show their understanding rather than getting a high score in a timed test.”
	2	N/A
	3	N/A
	4	*"That we integrate the use of AI tools in our assessments in a positive way. This can help ensure that we teach learners the correct way to use AI rather than copy and pasting from AI."*

This table presents survey responses illustrating educators’ use (or lack) of authentic assessment strategies, focusing on reflection, engagement, and real-world applications to counter AI misuse.

As seen in the above Table 4.7, educators who adapted their assessments (Educators 1 and 2) prioritized engagement, creativity, and reflective practices, designing process-focused tasks that emphasize method over outcome to encourage deeper metacognition. They incorporated real-world applications, requiring students to create unique work that AI cannot easily replicate. Educator 1 particularly emphasized reflection and problem-solving, viewing AI as a tool to enhance research rather than replace critical thinking. Educator 2 similarly tailored assessments to prevent reliance on generic AI-generated outputs, promoting active student participation. In contrast, Educators 3 and 4 relied on restrictive measures such as AI-detection tools and platform controls to maintain authenticity, focusing less on creativity or reflective engagement as a means of ensuring valid assessments.

Educators also differed in their approach to real-world assessments. Educator 1 strongly advocated for tangible, applied tasks, requiring students to demonstrate understanding through

practical work, making AI-generated responses less effective. Educator 4 acknowledged the importance of integrating AI responsibly, suggesting it could be used to develop workplace-relevant skills if incorporated thoughtfully. Educator 2 referenced subject-specific applications, such as real-life measurement tasks in mathematics, though this was not a dominant theme in their responses. Educator 3, however, focused primarily on ensuring assessments remained AI-resistant rather than embedding real-world scenarios. These responses highlight a clear division between educators who adapt assessments to foster authentic, skill-based learning and those who enforce external controls to maintain traditional assessment integrity in AI-influenced environments.

Educators' responses demonstrated different degrees of alignment with Situated Cognition Theory:

Table 4.8 Educators' alignment with Situated Cognition Theory constructs

Construct	Educator	Quote
Reflect context of learning	1	"Less Exams and more process-focused assessments with real-world outcomes…"
	2	"The subjects I teach do not require much use of AI as I try to provide as much authentic material for them to use to limit them from relying on AI responses."
	3	N/A
	4	"Learners make use of AI for their assessments in Afrikaans… they struggle with writing and speaking the language, therefore they make use of AI… and Google Translate…"
Institutional and policy context	1	*"A system-wide rejection of tasks that allows AI-produced answers to be celebrated."*
	2	"I think it is useful to have apps that can quickly and efficiently identify when a majority of a task is AI-generated or sourced. These apps save the educator a lot of time and allow for authentication of assessments."
	3	*"A robust process followed by all teachers is needed, with the flexibility for this process to change/adapt as and when needed. Learners need to be trained too, and given reminders as they progress."*
	4	*"We have made use of assessment platforms which restricts learners from opening other tabs or clicking on other screens that make use of AI tools."*
Meaningful	1	"*students - first steps when researching, studying, asking AI to*

interactions		*explain difficult concepts in simple terms."*
	2	“Educators need to know their students; If you understand how your students respond, speak, and answer questions then you will be able to identify when your student has used AI in their work.”
	3	N/A
	4	N/A

This table presents survey responses demonstrating how educators address AI’s influence through contextual learning, institutional policies, and meaningful interactions. These quotes highlight the importance of institutional support and policy as well as the gap in fostering meaningful interactions as a means to ensure authentic assessment of knowledge.

Educators acknowledged AI’s growing influence on learning and the need for institutional measures to uphold assessment authenticity (see Table 4.8 above). Educator 1 advocated for process-focused assessments, adapting tasks to align with AI’s role in education, while Educator 2 adjusted AI use based on subject demands. Educator 4 highlighted linguistic challenges, emphasizing how tools like Google Translate shape student learning, whereas Educator 3 focused on maintaining authenticity in the online format rather than AI’s broader impact. All four educators stressed the importance of institutional policies, with Educator 1 calling for system-wide AI regulations, Educator 2 advocating for AI-detection tools, Educator 3 emphasizing teacher training and policy consistency, and Educator 4 relying on secure platforms to block AI access. However, meaningful interactions as a means of maintaining authenticity were less emphasized. Educator 2 noted that teachers familiar with students’ writing styles can detect AI use, while Educator 1 saw AI as a potential learning aid, but Educators 3 and 4 prioritized policy enforcement over engagement-driven approaches. These responses illustrate a greater reliance on institutional controls than on fostering interactive strategies to maintain assessment validity in AI-influenced online learning.

The combined thematic and conceptual analyses of the survey data revealed several key trends and gaps:

Division in adaptation strategies: Educators took two distinct approaches to maintaining authenticity in AI-influenced assessments—adaptation and restriction. Educators 1 and 2 redesigned assessments by incorporating reflective tasks and process-based methods (see Table 4.3), while Educators 3 and 4 relied on technological or policy-based restrictions to limit AI use (see Table 4.5). *Emphasis on maintaining validity:* All educators prioritised assessment validity, particularly construct and consequential validity (see Table 4.6). Educator 1 focused on exposing students’ thought processes to uphold construct validity, whereas Educator 4 emphasised authorship verification, aligning more with consequential validity concerns.

Need for institutional support and policy development: Educators expressed a strong need for institutional guidance, including standardised policies, AI-detection tools, and professional

development (see Tables 4.5 and 4.8). Educators 2 and 3 highlighted the importance of consistent rules and AI-detection technologies to sustain assessment integrity across the institution. *Varying perceptions of AI's role in education:* Educators differed in their views of AI, shaping their approaches to assessment (see Tables 4.2 and 4.3). Educators 1 and 2 saw AI as a valuable tool for creativity and research, while Educator 4 viewed it as a threat to assessment integrity, leading to more restrictive policies.

Alignment with theoretical constructs: Educators 1 and 2 aligned more with Authentic Assessment and Situated Cognition, redesigning assessments to foster real-world application, reflection, and unique student output (see Tables 4.7 and 4.8). Educators 3 and 4, however, relied on institutional policies and AI detection tools, reinforcing validity but offering fewer opportunities for interactive or reflective learning. *Correlation between strategies and validity focus:* Educators 1 and 2 emphasised construct validity by requiring evidence of thought processes and methods, whereas Educators 3 and 4 prioritised content and consequential validity, ensuring assessments remained aligned with curriculum objectives and fairness principles (see Table 4.6). *Gaps in fostering social interactions:* While Educator 2 referenced teacher–student familiarity as a means of detecting AI use (see Table 4.8), most responses—particularly from Educators 3 and 4—focused on institutional controls rather than interactive learning strategies. This highlights a need for more engagement-driven approaches to uphold assessment authenticity, as emphasised in Authentic Assessment Theory and Situated Cognition Theory.

Overall, the survey data revealed shared concerns about validity and authenticity in AI-influenced assessments, with educators adopting either adaptation or restriction strategies. While Educators 1 and 2 emphasized critical thinking, reflection, and real-world applicability, aligning with Authentic Assessment principles, Educators 3 and 4 prioritized institutional policies and validity preservation to uphold traditional assessment forms. This duality reflects the broader debate within the educational community about the most effective strategies for maintaining fair, equitable, and meaningful assessments in an AI influenced online setting (Smolansky et al., 2023; Ifelebuegu, 2023; Mills et al., 2023). The next stage of this study moves to exploring and presenting the insights gained from interviews involving, ultimately offering deeper insights into educators' strategies and experiences in maintaining assessment integrity.

4.2.2 Data set 2: Interviews

This section presents findings from interviews with Educators 2, 3, and 4, expanding on survey insights from the preceding section 4.2.1. Unfortunately, Educator 1 was uncontactable for the interview due to having left the institution. However, their survey responses still contributed valuable insights into educator's perceptions of the authenticity and what adaptations are being implemented to uphold it, and have been included in the final thematic analysis. The primary purpose of these interviews was to further explore the key themes that emerged from the survey and gain deeper insight into each educator's reasoning, challenges, and strategies surrounding AI usage in assessments - ultimately aiming to contribute to objective 3 (proposing further strategies) by providing a deeper exploration of the rationale behind educators' adaptation

strategies and their broader implications for maintaining assessment authenticity in AI-influenced environments.

Using a semi-structured format, each interview included 10 open-ended questions lasting 30 - 45 minutes, organized into the four sections below designed to further explore the key themes that emerged from the survey data:

1. **Exploration of AI experiences**: Participants were asked to elaborate on their own and their students' experiences with AI, offering more in-depth perspectives on its evolving role in education.
2. **Challenges with AI in assessments**: This segment focussed on the educator's concerns regarding AI's impact on assessments, specifically focusing on how AI might undermine traditional assessment validity.
3. **Perceptions of current assessment validity and reliability**: This segment of the interview sought to understand participants' views on whether their current assessment methods effectively gauge student learning, even when AI tools are involved.
4. **Personal assessment strategies and modifications**: The educators were asked to discuss their adaptations in assessment practices to account for AI usage, detailing the rationale behind these adaptations and their perceived effectiveness.

Integrating interview data with survey responses provided a holistic understanding of educators' perspectives, capturing both broad attitudes (survey) and in-depth reasoning (interviews). The interviews validated, challenged, or extended survey themes, offering richer context on assessment authenticity in AI-influenced environments. Beyond reinforcing existing insights, they also revealed new constraints - institutional, curriculum-based, and subject-specific - that shape adaptation choices, directly contributing to Objective 3 by informing further strategies for maintaining authentic student evaluation.

While the final thematic analysis, presented in the proceeding Chapter 5, focused on synthesizing both survey and interview data simultaneously, several key observations emerged from the interview data alone, as presented through descriptions and Tables 4.9 - 4.13 below.

Key observation 1: Curriculum constraints: A predominant theme to emerge was the restrictive influence of curriculum mandates on assessment adaptation. Educators 2, 3, and 4 all cited limitations - such as time pressures to cover specified content or rigid exam structures - that hamper their ability to modify tasks and address AI misuse innovatively. For instance, Educator 2 referred to the *"time factor,"* highlighting how the pace of required coverage can override more creative or flexible assessment designs. Educator 3 echoed this concern, noting that they are *"still limited"* by obligatory term assessments, some of which cannot be adapted to incorporate deeper reflection or unique processes. Meanwhile, Educator 4 expressed frustration that certain tasks (e.g., essays) are non-negotiable in the curriculum, precluding the *"evolution"* they envision in an online setting. This insight highlighted that curriculum constraints were a primary reason for some educators relying on restriction strategies rather than adaptation.

Table 4.9 Impact of curriculum constraints on assessment adaptation

Educator	Quote
2	*“I think it's always a time factor… time factor in terms of how much of curriculum we have to teach in a given time”*
3	*“We have to do assessments every term for their box… we are still limited to the assessments that we must do.”* *“There are just some things that you do need to assess that can’t be adapted.”*
4	*"The curriculum just doesn't allow it... You need an essay… we'd like to evolve in the online space. We also very limited in what we can do."*

Table presenting interview quotes from Educators 2, 3, and 4 highlighting how rigid curriculum mandates limit their ability to modify assessments in response to AI challenges. These constraints often push educators toward restrictive rather than adaptive approaches.

Key observation 2: Subject-specific challenges: In addition to curriculum demands, subject-based factors emerged as highly influential in shaping all the participating educators’ responses to AI. Educator 2, who teaches science-related content, notes that while AI can hinder *“learning aspects,”* students *“have learned over time to use it as a tool,”* suggesting that the impact of AI varies by the disciplinary context. Conversely, Educator 3 observes that *“creative writing”* tasks outside of class time can be heavily AI-influenced because learners can easily generate or refine text unnoticed. Similarly, Educator 4 faces particular linguistic hurdles with Afrikaans, highlighting how technology tools are often less accessible or effective in that language, further complicating the interplay between AI usage and authentic assessment.

Table 4.10 Subject-specific challenges in AI-Influenced assessments

Educator	Quote
2	*“that it depends obviously on the subject that you're teaching where AI can be more detrimental to the learning aspects and to how successfully learners can do assessments. But in subjects like what I'm doing, I think they've learned over time to use it as a tool.”*
3	*“Creative writing is done as a separate assignment in your own time… that is actually where a lot of AI can be used.”* *"Yeah, so this is, I think, subject-specific, and our limitation is curriculum."*
4	*"I think it's subject-specific because with Afrikaans we need to keep it, you know, plain, simple, because we don't want to confuse learners even more. And it's also sometimes difficult in terms of tools in general, technological tools. We are very limited for Afrikaans.”*

In this table educators describe how subject-specific factors shape AI's role in assessment. Science educators report students using AI as a learning tool, while language-based subjects face greater challenges in maintaining originality and authenticity.

Key observation 3: Evolving perceptions of AI: A prominent pattern is the evolution of all participating educators' stances on AI - from initial skepticism or even opposition to a more balanced view that acknowledges AI's potential for learning enhancements and its role in assessment. Educator 2 candidly mentions having been *"a bit skeptical"* but now recognizes *"a lot of benefits"* once they delved deeper. Educator 3 points out the *"positive potential"* of AI in fostering inquiry and critical thinking. Educator 4, who initially saw AI as *"another tool that learners can use to manipulate their assessments,"* now considers ways to incorporate it *"positively"* into their course. This shift indicates a dynamic understanding of AI's role, suggesting that as educators become more informed, they experiment with blending AI into their teaching and assessment practices.

Table 4.11 Evolving perceptions of AI in assessment

Educator	Quote
2	*"Initially I was a bit skeptical... But once I got more into it and I realised that there's a lot of benefits to using AI as well in education."*
3	*"I think there are good things, positive potential, where you can use it in a good way to teach children to be curious and to investigate, to question"*
4	*"Firstly I would say that I was very against AI because again as a teacher… specifically being an Afrikaans teacher… it's another tool that learners can use to manipulate their assessments… [but] then as I… read articles on how AI can actually be used positively in education and I thought… how can I try and incorporate this in my course."*

Table presenting how Educators 2, 3, and 4 reflect on their shifting views of AI - from initial skepticism to recognizing its potential for learning enhancements. These evolving attitudes influence whether they integrate AI into assessments or restrict its use, and demonstrates how educators' attitudes have pivoted, shaping their openness to integrating AI or designing adaptations rather than relying purely on preventive tactics.

Key observation 4: Need for institutional support and collaboration: The interviews emphasized the importance of institutional support, continuous adaptation and development, and collaborative efforts in effectively addressing AI's impact on assessments. Educator 2 underscores the necessity for individuals to be *"aware"* but acknowledges that ultimate decision-making (and accountability) often remains with the teacher. Educator 3 envisions *"continuous upskilling"* so educators can handle AI tools with competence and detect misuse

fairly. They also remark that *“it can’t only be up to one person,”* implying collaborative efforts among administrators, educators, and IT support. Educator 4 describes ongoing *“trial and error”* with colleagues and uses inclusive language, highlighting the potential for shared learning but also warning that institutional backing is needed for systematic progress.

Table 4.12 Institutional support and collaboration in AI management

Educator	Quote
2	*“So I think there's a lot of things that you as a human need to just be more aware of and then you make the final call”*
3	*"We will have to continuously be upskilling and developing and being in the world of AI so that we understand it and that we can use it well and that we can detect it well."* *"It definitely requires trial and error perhaps. Trial and error and openness in discussion. It can't only be up to one person."*
4	*"We will read through it and then I'll maybe meet with my colleague…”* *“It's trial and error, we see something that's not working, we're going to try something else, but I do think that it, at some stage, is just going to be very difficult to just continue to move away from.”*

Table presenting interview quotes illustrating educators’ reliance on institutional backing, professional development, and collaborative strategies to effectively manage AI’s impact on assessments. These responses emphasize that addressing AI challenges requires collective efforts beyond individual teachers.

Key observation 5: Balancing restriction and adaptation: Educators (primarily Educator’s 3 and 4) acknowledged the limitations of purely restrictive approaches due to AI's rapid evolution. There was recognition among all participating educators of the need to balance restriction with adaptation, integrating AI positively while maintaining assessment integrity. For instance, Educator 2 notes that she aspires to *“develop the critical thinking”* in tasks, so they remain *“unique”* and assessment remains authentic over purely restrive strategies that prohibit the presence of AI. Educator 3 recounts a case where detection systems failed and a suspected AI user was actually employing Grammarly for sentence-level assistance, prompting reflection on how to distinguish helpful AI from outright cheating. Educator 4 similarly calls for *“harder”* attempts at adaptive assessments that may even leverage AI, believing that as AI continues to advance, prevention measures alone will lose effectiveness.

Table 4.13 Balancing restriction and adaptation in assessments

Educator	Quote
2	*“I like to develop the critical thinking. I think in a way of me trying to authenticate*

	the assessments and try to make it unique."
3	*"One learner that I suspected of using [AI]... ran it through Winston… said it was 100% AI, but actually… the learner used Grammarly to help with sentence construction, etc., and so she had come up with a story and the characters and the plots… was all her idea, but she had used a tool to help her with grammar."* *"I think it's excellent if you can adapt the assessment itself. I think that's first and foremost. If you're still able to assess the skills required and you've adapted it in a way that it's less susceptible, that would be the best."*
4	*"We need to try harder to adapt our assessments to make use of AI rather than just, you know, preventing the use of it... [because] it evolves so quickly, our preventative measures are not going to be able to necessarily keep up."*

Table presents how Educators discuss the limitations of purely restrictive measures and the need for adaptive strategies. They highlight how integrating AI into critical thinking tasks and refining detection methods can better preserve assessment integrity than outright prohibition.

Moving beyond the key observations, the interview data was also used in conjunction with the survey data to examine whether educators' strategies aligned with the underlying theoretical constructs and offered further insights into the validity of their approaches, as presented below through descriptions and Tables 4.14 - 4.16. Their strategies and perspectives further spoke to the main constructs of Validity Theory through the following prominent quotes**:**

Table 4.14 Educators' approaches to Validity in AI-influenced assessments

Construct	**Educator and prominent interview quote**
Construct validity	**Educator 2:** *"By them showing the method in it, it shows that they've understood the concepts they understand, especially in science stuff."* **Educator 3:** *"It's making it very specific, though, as specific as you can without compromising the style of the assessment."*
Consequential validity	**Educator 4:** *"Our preventative measures are not going to be able to necessarily keep up. So I think... we need to try harder to adapt our assessments to make use of AI rather than just... preventing the use of it."*
Content validity	**Educator 3:** *"They have a Google Meet open and they have an application called exam.net open. And it's very hard to, you can't open any other tabs during that time."*

Table presenting selected interview quotes from participating Educators (2, 3, and 4) illustrating how they address construct, consequential, and content validity. The quotes highlight the most

noteworthy expansions of how genuine understanding (construct), fairness (consequential), and alignment with curricular outcomes (content) are maintained.

In the interviews, construct validity emerged through educators' emphasis on assessment adaptations that reveal students' genuine thought processes rather than AI-generated responses. Educator 2 stresses the need for students to *"show the method*" in scientific contexts, while Educator 3 highlights *"making it very specific"* to prevent generic AI answers (see Table 4.14). Consequential validity arose in discussions on fairness, particularly concerns about penalizing or failing to detect AI-generated work. Educator 4 notes that purely preventative strategies may not maintain fairness long-term, underscoring broader ethical and practical implications. Content validity is reflected in Educator 3's use of platform restrictions (e.g., locked tabs, Google Meet supervision) to ensure assessments remain aligned with curriculum content, preventing AI from compromising prescribed learning objectives.

Beyond validity, the interview data also expands and validates on how educators incorporate (or attempt to incorporate) Authentic Assessment Theory constructs through the following prominent quotes:

Table 4.15 Authentic assessment strategies in AI contexts

Construct	Educator and prominent interview quote
Reflection in and on action	**Educator 2:** *"But what's more important is how you got to the answer. So by them showing the method in it, it shows that they've understood the concepts."* **Educator 3:** *"We will have to continuously be upskilling and developing and being in the world of AI."*
Student engagement	**Educator 2:** *"I try to give them a task where... they have to have a personal experience and their assessment is structured in a way that each student's answers can be different."*
Real-world tasks	**Educator 4:** *"Using AI in a positive way would mean that learners can learn from AI, and not just simply take what AI gives them and use it... incorporate that maybe as a preparation in a course or a lesson."*

Table presenting the selected prominent interview quotes illustrating how participating Educators (2,3 and 4) incorporate reflection in action, student engagement, and real-world tasks as a means to ensure the authenticity of online assessment. These quotes represent the most noteworthy expansions of authentic assessment in an AI context.

Looking at reflection in action, Educator 2 reiterates the idea of focusing on *"how you got to the answer,"* (see Table 4.15) stressing the process of learning and reflection on it rather than the final output. Educator 3 extends this by noting a constant need to *"be upskilling and developing"* in AI, implying ongoing reflection and subsequently adaptation at the educator level. Student engagement is exemplified by Educator 2 who constructs personalized tasks where no two answers look the same in an attempt to get the learners personally engaged, actively

participating and reduce AI's capacity to generate identical outputs. For real-world tasks, Educator 4 highlights using AI in a *"positive way,"* and incorporating critical AI skills in lessons which shows an interest in preparing learners for authentic contexts wherein AI may be used responsibly, bridging classroom activities, real-world scenarios and assessment.

Lastly, the interviews revealed key contextual factors that influence assessment authenticity in AI-prevalent online environments. Beyond using context to adapt assessments, educators highlighted broader institutional constraints, policy needs, and professional development requirements that shape adaptation strategies. AI is not just a tool but part of the learning ecosystem, necessitating supportive policies and meaningful dialogue to uphold authenticity. These insights align with Situated Cognition Theory, as reflected in the following quotes:

Table 4.16 Contextual influences on AI-driven assessment adaptation

Construct	**Educator and prominent interview quote**
Reflect context of learning	**Educator 4:** *"I think for me, using AI in a positive way would mean that learners can learn from AI, and not just simply take what AI gives them and use it…"*
Institutional and policy context	**Educator 3:** *"It can't only be up to one person."* **Educator 3:** *"We will have to continuously be upskilling and developing and being in the world of AI so that we understand it."*
Meaningful interactions	**Educator 2:** "*I think it comes down to you knowing your students."* **Educator 4:** *"We will read through it and then I'll maybe meet with my colleague... we've also decided to maybe meet with a learner and ask them about the piece that they've written..."*

Table presenting selected interview quotes from Educators 2, 3, and 4 that reflect contextual considerations, institutional/policy requirements, and meaningful interactions - particularly vital in AI influenced educational settings. These quotes mark the most prominent expansions from the interviews of how AI is integrated or restricted within a situated learning environment.

From a situated cognition perspective, all participating educators recognize AI as a fundamental aspect of the modern learning environment that influences how tasks should be adapted to reflect this. Educator 4 highlights the importance of framing AI as an integrated component of education (see Table 4.16), suggesting that assessments should mirror the authentic contexts in which students engage with AI outside the classroom to maintain relevance and authenticity. Similarly, Educator 3 underscores the significance of the institutional and policy context, emphasizing that *"it can't only be up to one person,"* pointing to the need for collective protocols, professional development, and consistent institutional approaches to address AI's challenges effectively. Educator 2 highlights the importance of *"knowing your students"* as a way to ensure authenticity, while Educator 4 emphasizes collaborative efforts among teachers, colleagues, and

students to validate work and foster transparency. These examples illustrate how direct teacher-student dialogues and teacher-colleague-student collaboration serve as immediate and effective checks on authenticity, enriching the social dimensions of learning and aligning assessment practices with the principles of situated cognition.

In conclusion, the interview data expands on the survey findings, providing deeper insight into educators' reasoning behind their adaptation strategies. All participants elaborate on curriculum constraints (Table 4.9) and subject-specific factors (Table 4.10), clarifying why they lean toward adaptation or restriction. They also reflect on their evolving perceptions of AI (Table 4.11), the need for institutional support and collaboration (Table 4.12), and the importance of balancing restriction with adaptation (Table 4.13). Overall, the interviews reinforce and deepen the survey themes, illustrating the complex interplay between curriculum mandates, subject demands, and institutional processes. Educators recognize the need to adapt alongside AI's advancements, as purely restrictive measures may become unsustainable over time.

4.3 Conclusion

This chapter presented key findings from the survey and interview data, illustrating how educators perceive and respond to AI's influence on online assessments. The findings reveal tensions between ensuring authenticity, adapting assessments, and implementing technological safeguards, all shaped by contextual factors such as subject discipline, curriculum mandates, and institutional support.

The study's research objectives were directly addressed by:

- Exploring educators' perspectives on assessment authenticity in AI-influenced contexts (Objective 1), highlighting concerns over validity, authorship, and fairness.
- Identifying current adaptation strategies (Objective 2), distinguishing between proactive modifications (process-based, contextualized tasks) and restrictive measures (AI detection tools, secure platforms).
- Evaluating opportunities for further strategies (Objective 3), exposing gaps where structured AI integration, institutional support, and alternative assessment models could strengthen authenticity.

The chapter was structured across three key analytical sections: Section 4.1 provided institutional and participant context, situating findings within the educators' teaching environments. Section 4.2 presented survey and interview data separately, outlining broad patterns from the survey before exploring deeper rationales from the interviews. Section 4.3 synthesized key findings, preparing for the next chapter's thematic and comparative analysis, where the data will be examined in relation to literature and theoretical frameworks to provide a more critical interpretation of how assessment adaptation strategies function in AI-influenced online education.

CHAPTER 5: ANALYSIS OF DATA

5.0 Introduction

This chapter builds on the structured data presented in Chapter 4 by offering an in-depth analysis of educators' responses to AI's impact on online assessments. It examines underlying patterns, tensions, and contextual constraints that shape how assessments are adapted in the face of AI innovations. By applying thematic analysis (5.1), the chapter explores how educators conceptualize AI, address concerns of validity and authenticity, and modify assessment practices to ensure genuine student evaluation. In doing so, the chapter aims to not only highlight the diverse strategies - ranging from AI integration to strict technological restrictions - but also considers the influence of curriculum demands and subject-specific factors (5.2). These insights directly address the study's research objectives by illuminating the challenges and opportunities of AI-adaptive assessment, setting the stage for the following discussion chapter, where these findings will be related to existing literature and theoretical frameworks. By analyzing these dimensions, this chapter contributes to the study's aim of exploring assessment adaptation strategies and provides the foundation for the discussion chapter, where these insights will be examined in relation to existing literature, theory and research objectives.

5.1 Thematic analysis

Building on the structured presentation of data in Chapter 4**,** this section aims to present thematic analysis of educators' integrated survey and interview responses, integrating data to examine individual and overarching patterns in how they navigate AI's impact on online assessments. Moving beyond the presentation of data, this analysis synthesizes insights across four themes: perceptions of AI (5.1.1), assessment validity and authenticity (5.1.2), adaptation strategies (5.1.3), and technological and institutional support (5.1.4). By drawing on both data sets and referencing previous tables, this section identifies key trends, tensions, and strategies, directly contributing to the study's core objectives: exploring perceptions of authenticity (Objective 1), evaluating current adaptation strategies (Objective 2), and identifying areas for further assessment development (Objective 3).

5.1.1 Theme 1: Perceptions of AI and it's capabilities

This theme explores educators' perceptions of AI in education and assessment, highlighting their conceptualization of AI as either a supportive tool or a potential threat to authentic evaluation. Through survey and interview data, it becomes evident that educators' initial positions - ranging from skepticism and enthusiasm to outright rejection - have evolved into more complex perspectives, shaped by concerns about validity, authenticity, and the situated nature of assessment in online contexts. This theme primarily addresses Research Objective 1, revealing how educators perceive AI's impact on authentic student evaluation, while also informing Research Objective 3, as clear understanding of why participants feel positively or negatively about AI informs any future proposals for adapting assessments to uphold validity.

Educator 1 viewed AI as a valuable learning aid capable of simplifying difficult concepts and streamlining planning. However, they cautioned against overreliance, emphasizing that learning should prioritize understanding rather than "shortcuts" for grades. They encouraged responsible use, suggesting AI be leveraged to support the creation of unique, contextually rich outputs rather than replacing student effort (See Table 4.2). Educator 2 initially approached AI with skepticism, but their perspective evolved as they recognized its benefits for structured tasks in Math and Science, where problem-solving steps limit AI's ability to generate answers without cognitive engagement. Despite acknowledging AI's utility as an "accessible information source", they remained cautious of its misuse in written tasks, leading them to shift away from assessment formats susceptible to AI-generated responses (See Table 4.2). Educator 3's perspective reflects a strong inclination toward prohibition and restriction to manage AI's role in assessments. Their approach reflected a content validity concern, ensuring assessment tasks aligned with traditional intended learning objectives by eliminating external interference and controlling the consequences of AI on assessment authenticity (See Table 4.5). However, during the interview, they admitted to the limitations of detection-based strategies, stating that proving AI misuse remains challenging. This restrictive perception also shifted over time, from initial skepticism to revealing a deeper concern about the broader implications of AI on learning, recognizing that excessive reliance on AI might erode students' creativity and critical thinking.

Notably, Educator 4 demonstrated the most significant change in perception. Initially, they viewed AI as an obstacle to authenticity, particularly in second-language learning, fearing students would bypass meaningful effort by using AI enhanced translation and writing tools. Their early stance was defensive, prioritizing assessment integrity through prohibitive measures. However, exposure to positive AI applications and professional reflection led them to reconsider its role in learning. Instead of prohibition, they shifted toward a structured approach to AI integration, advocating for teaching students how to use AI effectively rather than banning it outright:

> *"Then as I… read articles on how AI can actually be used positively in education, I thought… how can I try and incorporate this in my course."* (Educator 4, Interview, Table 4. 11)

This shift represents a move toward authentic assessment practices, where AI is framed as a learning tool rather than a shortcut, reinforcing principles of situated learning. Educator 4's evolving stance mirrors a broader trend among participants, where initial skepticism or restrictive approaches give way to more nuanced understandings of AI's potential role in education. This perspective aligns with Educators 1 and 2, who advocate for integrating AI in ways that emphasize cognitive engagement and process-based learning, rather than viewing it solely as a threat to assessment integrity. At the same time, it contrasts with Educator 3's continued reliance on restrictive measures, highlighting the spectrum of adaptation strategies educators employ in response to AI's growing presence in online assessment.

Across the educators, there is a spectrum of perceptions regarding AI and assessments. However, several noticeable trends emerge from these perceptions in this theme:

Evolving attitudes and dual nature: Educators 2 and 4 illustrate a transition from apprehension to acceptance, shaped by experience, reflection, and exposure to positive AI applications. All educators acknowledged AI's capacity to support learning in some capacity but also its risk of eroding critical thinking and authenticity. *Integration versus restriction:* Educators 1 and 2 favour responsible integration, teaching students ethical AI use, while Educator 3 relies on detection and prohibition. Educator 4 bridges both perspectives, now advocating for structured AI integration. *Subject-specific influences:* Educators in science domains (Educators 1 and 2) perceived AI as less of a threat because method-driven tasks naturally limit AI misuse, whereas language educators (Educators 3 and 4) faced greater challenges due to AI-generated text and the vulnerability of their assessments, leading them to see AI as a direct threat that must be controlled. *Ongoing adaptation:* The diverse perspectives—ranging from banning AI to consciously incorporating it—highlight that no single approach fits all contexts. Educators' approaches reflect situated realities, emphasizing that assessment strategies must evolve alongside technological advancements to maintain validity and authenticity (Zhai et al., 2024; Perkins et al., 2024).

Educators' perceptions of AI in assessment vary, with some seeing it as a learning aid while others view it as a threat to authenticity. This theme contributes to Research Objective 1, highlighting concerns that AI-generated responses undermine assessment validity, particularly in text-heavy tasks. While some educators integrate AI for structured learning, others prioritize restrictive measures, leading to inconsistent adaptation strategies and reinforcing the need for clearer institutional guidance and training. In addressing Research Objective 3, this theme identifies key concerns - AI's impact on student engagement, over-reliance, and validity - which must inform future assessment adaptations. These insights transition into Theme 2, which explores how educators define and uphold assessment authenticity.

5.1.2 Theme 2: Validity and authenticity of assessments

This theme aims to explore participating educators' perspectives on the validity and authenticity of assessments in the context of AI and online education. It explores how educators perceive the impact of AI on the credibility of assessments, the challenges they face in maintaining assessment integrity, and touches on the adaptations they perceive as necessary to ensure assessments continue to reflect genuine student understanding. Through these perspectives, Theme 2 continues to address research objective 1 by highlighting what educators deem "authentic" or "inauthentic" in AI-influenced assessments, and reveals which aspects of validity (construct, content, or consequences) educators perceive as most threatened by student access to AI. It also indirectly supports research objective 3, since identifying which assessment practices fail to measure true learning lays the groundwork for proposing new or refined strategies.

Educator 1 explicitly asserts that traditional assessments are no longer valid, as they often prioritize superficial content recall rather than genuine engagement. They advocate for process-driven assessments, which emphasize the steps students take to construct knowledge rather than the final answer, making it harder for AI to replicate authentic thinking. As they state:

> *"I think all types of assessments probably need an update, with the focus shifting to assessing the process rather than the content."* (Educator 1, Survey, Table 4.3)

This perspective underscores a belief that authenticity lies in assessing reasoning, reflection, and problem-solving, rather than rote memorization or reproduction of existing knowledge. Educator 1's emphasis on process-driven assessments reflects a broader consensus among educators that AI challenges traditional assessment validity, particularly in tasks that rely on static responses. Educator 2 echoes this sentiment, highlighting that method-focused assessments in STEM subjects naturally uphold authenticity, while Educators 3 and 4 grapple with detection-based and restrictive strategies to address similar concerns. Across all perspectives, there is an outright acknowledgment that sustaining authenticity in AI-influenced environments requires a shift away from at-risk traditional assessment forms and toward assessments that engage students cognitively, making learning processes transparent and difficult for AI to replicate.

Educator 2 expresses similar confidence in STEM assessments, arguing that Math and Science tasks inherently uphold validity by requiring students to demonstrate problem-solving processes (See Table 4.3). They note that such assessments rely less on final products that AI can fabricate, though they acknowledge that AI's evolution may challenge even these assessment methods in the future. Additionally, they acknowledge the vulnerability of written components or final outputs, stating that they have moved away from these assessment types (See Table 4.4). Their confidence is balanced by a recognition that human oversight remains critical, as familiarity with students' capabilities helps identify inconsistencies in their work (See Table 4.16).

Conversely, Educator 3 views validity as precarious, acknowledging that while detection strategies provide some assurance, AI still enables students to bypass even well-designed assessments (See Table 4.3). They describe an ongoing struggle where assessments perceived as AI-resistant often prove vulnerable, exposing the limitations of current assessment strategies (See Table 4.13). As they note, reliance on detection measures is time-consuming and not always conclusive, making it difficult to definitively prove AI involvement. These frustrations expose a fragile sense of confidence in their current approach. While Educator 3 believes that recent modifications have improved validity, their experience suggests that reliance on detection tools alone may not be sufficient. Similarly, Educator 4 initially relied on restrictive platforms that prevent students from accessing AI tools during assessments, believing this ensured authenticity. However, they later recognized that technological restrictions alone cannot verify authorship, stating that:

> *"We need to try harder to adapt our assessments to make use of AI rather than just… preventing the use of it."* (Educator 4, Interview, Table 4.13)

Across all participating educators there is acknowledgement that current assessment practices may no longer be a valid or authentic measure of student learning. Other noticeable trends that emerged from this theme are:

Process over content: Educators 1 and 2 advocate for assessments that prioritise thought processes and reasoning, which they believe are more valid and authentic than tasks focusing solely on final answers. *Challenges with detection-based strategies:* Educators 3 and 4 recognise significant limitations in relying on AI-detection tools, as they struggle to prove authorship and maintain confidence in their assessments. *Continuous adaptation:* All educators highlight the need to reevaluate traditional practices and develop approaches that account for AI's evolving capabilities. This recognition reflects the ongoing challenge of designing assessments that remain credible and authentic as technological advancements continue to reshape the educational context.

Ultimately, this theme directly contributes to research objective 1 by demonstrating that educators perceive traditional, text-based assessments as particularly vulnerable to AI, with construct validity being the most compromised. While STEM educators find it easier to maintain validity through method-based tasks, language educators struggle with restrictive mandates that limit their ability to adapt assessments effectively. This theme also informs Research Objective 3, highlighting the need for alternative strategies that emphasize process-driven evaluation over static final-product assessments, especially in language subjects. These insights set the stage for Theme 3, which explores how educators are actively adapting assessments to uphold authenticity in AI-influenced learning environments.

5.1.3 Theme 3: Adaptation of assessments to counter AI use

This theme explores how educators are modifying their assessment strategies to maintain authenticity and validity in response to AI's growing presence. Educators highlight a shift away from traditional, recall-based assessments toward more process-oriented, individualized, and real-world tasks. These adaptations directly address Research Objective 2, demonstrating how educators adjust their assessment practices to preserve authenticity. They also contribute to Research Objective 3, offering practical strategies that could be refined or expanded to ensure valid student evaluation in AI-influenced environments.

Educator 1 exemplifies this theme by advocating for a fundamental shift in assessment design, emphasizing the importance of process-driven evaluation over traditional exams. They argue that assessments should focus on engagement, reflection, and real-world application, ensuring students actively construct knowledge rather than reproducing existing content. As they explain:

> *"Less exams and more process-focused assessments with real-world outcomes, i.e., students creating something useful to show their understanding rather than getting a high score in a timed test."* (Educator 1, Survey, Table 4.4)

This perspective underscores the belief that authentic learning should emphasize cognitive engagement, making it more challenging for AI to generate convincing responses. Educator 1's call for process-oriented assessments reflects a shared strategy among participants, particularly Educator 2, who similarly advocates for individualized, experience-based tasks that demand student reasoning. While Educator 3 leans more on restrictive measures, their effort to design highly specific prompts aligns with the broader goal of making AI-generated answers less

applicable through contextualization. Educator 4's evolving stance further reinforces this shift, recognizing that assessments must be adapted rather than AI simply being blocked. Across responses, the movement toward process-based, personalized assessments reflects a collective recognition that deep engagement, rather than surface-level responses, is the key adaptation to maintaining authenticity in AI-influenced education.

Similarly, Educator 2 designs individualized assessments to reduce AI's influence. They structure tasks so that each student's response is unique - based on personal data, experiences, or contextualized problem-solving - making AI-generated answers impractical. They cite an example from Math Literacy, where students measure objects in their own environments and apply calculations, ensuring distinct outputs. Additionally, for practical write-ups, they encourage students to summarize, restructure, and reference information, reinforcing personal engagement with the material - Table 4.4 provides details on these strategies.

Conversely, While Educator 3 prefers to control the environment in which the assessment takes place rather than fundamentally adapting the assessment itself there is mention of crafting highly specific, personal and contextual writing prompts to make AI-generated responses less applicable, aiming to retain the integrity of creative writing assessments (See Table 4.4). However, they acknowledge that no prompt is fully immune to AI-generated content, recognizing that students can still input even the most tailored prompts into AI tools.

Similarly, Educator 4 initially relied on restrictive platforms to prevent students from using AI during assessments as a means to ensure authenticity (See Table 4.5). However, during the interview, they have begun to recognize the limitations of this approach, the need for a more balanced strategy and outline an adaptation strategy (See Table 4.13). They now advocate for adaptive assessments that integrate AI in structured ways, balancing student agency, cognitive engagement, and technological realities. Instead of outright restriction, they emphasize guiding students toward responsible AI use and selecting assessment topics that minimize AI dependency by being level appropriate and encouraging traditional tools like dictionaries. This shift aligns with Educators 1 and 2, who favor process-driven tasks that expose student reasoning, showing that their evolving stance highlights a broader transition toward assessments that foster deeper engagement over purely detection-based strategies.

From the educators' perspectives, several key patterns emerge in their approaches to adapting assessments in response to AI's growing influence:

Process over content: Educators 1 and 2 emphasise assessments that showcase students' reasoning and problem-solving processes, ensuring deeper engagement while minimising AI misuse. *Emphasis on individualised tasks:* A shared focus across all the participating educators is the creation of unique, personalised tasks that draw on students' individual experiences, data, or contexts. *Challenges of restrictive strategies:* Educators 3 and 4 highlight the limitations of relying on restrictive platforms and technological controls to maintain authenticity; while these measures may mitigate AI misuse temporarily, they acknowledge that such strategies are not fool-proof. *Evolving perspectives on AI integration:* Educator 4's shift indicates growing

recognition that assessments should incorporate AI in structured ways rather than merely prohibiting it.

The educators' approaches to adapting assessments demonstrate a diverse range of strategies, from process-based and individualized tasks to restrictive measures and early steps toward constructive AI integration - directly contributing to Research Objective. It also informs Research Objective 3 by revealing where challenges remain - such as time constraints, subject-specific limitations, and the need for institutional support - that must be addressed for effective AI-adaptive assessment strategies. These insights set the stage for Theme 4, which explores the role of technological tools and institutional policies in supporting or constraining assessment adaptation.

5.1.4 Theme 4: Technological tools and institutional support

This theme explores educators' reliance on technological tools, such as detection and proctoring software, and institutional backing to maintain assessment integrity in the presence of AI. Across their responses, educators reveal a reliance on technological solutions to prevent AI misuse but also acknowledge the limitations of these tools and the necessity of continuous adaptation. By analyzing these technology and policy-driven responses, this theme contributes to Research Objective 2, examining how educators use technology and institutional policies to sustain authentic assessments. It also strongly informs Research Objective 3, underscoring the necessity of institutional-level decisions, professional development, and adaptable strategies to uphold authentic student evaluations in AI-influenced environments.

Although Educator 1's approach focuses on fundamental changes to the assessment itself, they also highlight the importance of access to effective AI detection but argue that technology alone is insufficient without broader systemic reforms. They advocate for a system-wide rejection of tasks that allow AI-generated answers to be celebrated, reinforcing the idea that policy and pedagogy must evolve alongside AI (See Table 4.5). Similarly, Educator 2 values detection tools for their efficiency, stating they can quickly flag AI-generated content, saving educators time and improving authentication processes. However, they stress that this cannot be used in isolation and institutional leaders must stay informed about AI advancements, ensuring policies and tools keep pace with evolving challenges (See Table 4.5).

Conversely, Educator 3 provides the most detailed account of how technological tools and institutional measures are employed to manage AI's impact on assessments in these contexts. Educator 3 employs a multi-layered approach, integrating AI detection software, document tracking, and restrictive platforms such as Exam.net to monitor student activity and prevent AI misuse. Their strategy prioritizes real-time supervision, with document version histories used to track changes and detect sudden text insertions that suggest AI involvement. They perceive AI detection as part of broader academic integrity enforcement, treating AI-generated responses similarly to plagiarism. Additionally, Educator 3 highlights the importance of institutional processes, advocating for standardized policies across schools while emphasizing the need for flexibility to accommodate AI's rapid evolution:

> *"A robust process followed by all teachers is needed, with the flexibility for this process to change/adapt as and when needed."* (Educator 3, Survey, Table 4.5)

This quote exemplifies the central tension in this theme - while educators rely on technological tools and detection strategies, they also recognize that AI's rapid evolution demands institutional flexibility and ongoing adaptation. Educator 3's call for a standardized yet adaptable approach reflects a broader need for institution-wide collaboration, aligning with Educator 1's advocacy for system-wide reforms and Educator 2's emphasis on administrative involvement. At the same time, it resonates with Educator 4's perspective, as they, too, acknowledge that restrictive tools alone cannot sustain long-term assessment integrity. Across responses, the reliance on technology as a frontline defense against AI is evident, yet so is the growing awareness that institutional guidance and continuous development must supplement technological solutions to ensure valid, authentic assessments.

Educator 4 employs similar restrictive strategies, relying on lockdown browsers that prevent students from accessing AI tools during exams. Their approach is rooted in controlling the testing environment rather than modifying assessment structures. However, they acknowledge that blocking AI is not a sustainable long-term solution, suggesting that educators must explore ways to integrate AI into assessments rather than solely restricting it. They emphasize institutional discussions as a necessary step toward developing effective AI management strategies, reinforcing the need for collaborative, school-wide efforts to maintain assessment integrity (See Table 4.5).

All participating educators acknowledge the role of technological tools and institutional support in the authentication of assessments. However, their reliance on them differs. From the educators' perspectives, several key patterns emerge regarding the role of technology and institutional backing in maintaining assessment integrity:

Reliance on technological tools: All participating educators highlight the use of detection tools to some extent. Educators 1 and 2 see detection tools as quick and efficient for identifying AI-generated content in certain types of tasks, while Educators 3 and 4 rely on more extensive processes involving layered tools and live monitoring to ensure authenticity (See Table 4.5).
Institutional policies and collaboration: Each educator stresses the importance of system-wide leadership. Educator 1 calls for assessment reforms, Educator 2 foregrounds the role of administrators, and Educator 3 advocates a standardised institutional process (see Table 4.5).
Continuous development: Because AI evolves rapidly, ongoing training and adaptable policies are essential; Educator 3 urges continuous upskilling, and Educator 4 supports iterative experimentation (see Table 4.12).

Ultimately, while detection apps and restrictive platforms are seen as valuable first-line defenses for some educators, their limitations underscore the need for more holistic system-wide strategies. This theme contributes to Research Objective 2 by demonstrating how technology-driven solutions act as adaptations to support assessment authenticity, but also reveals challenges in relying solely on these tools. It informs Research Objective 3 by emphasizing the need for institution-wide policies, professional development, and collaborative

discussions to create sustainable, AI-adaptive assessment frameworks. The findings highlight a broader institutional responsibility, setting the stage for discussions on future assessment models that integrate AI responsibly while preserving academic integrity.

5.2 Contextual factors shaping educator responses

The previous section explored thematic patterns in educators' responses to AI's influence on assessment. However, beyond individual strategies, broader contextual factors - particularly curriculum constraints and subject-specific influences - also shape how educators navigate assessment adaptation. These factors emerged primarily through interview discussions rather than survey responses, providing critical but complex insights that, if incorporated into the themes, would have distorted their coherence. Following the principles of Reflexive Thematic Analysis (Braun & Clarke, 2019), where themes are constructed based on meaningful patterns rather than attempting to force all data into rigid categories, these structural and disciplinary constraints are presented separately. By contextualizing these constraints, this section directly contributes to the study's aim of exploring assessment adaptation strategies that uphold authentic student evaluation in these contexts by demonstrating how systemic barriers shape adaptation feasibility and identifying the structural changes needed to ensure sustainable assessment practices.

Curriculum constraints and flexibility

During interviews, each educator noted how curriculum demands heavily influence their choices - both in using technological measures and in adapting assessments. They explained that mandated learning outcomes, rigid timelines, and large quantities of content can limit creativity in designing AI-resistant tasks, directly impacting the why behind research question 2 (how educators adapt). Educator 2 spoke of the "time factor" and the pressure to cover specific topics, which curtails the scope for lengthy, process-focused projects. Meanwhile, Educators 3 and 4, operating in language-based domains, discussed how certain essay requirements or grammar modules remain non-negotiable, compelling them to rely on restricted-browser exams or AI detection rather than fully revamping tasks (see Table 4.9).

However, despite these rigid frameworks, some educators highlighted pockets of flexibility. For instance, Educator 2 mentioned the possibility of introducing small-scale reflective elements, such as short learning journals or method explanations, that align with the existing syllabus yet still increase authenticity. However, these adaptations often remain incremental because large-scale changes - like eliminating standardized essays - might conflict with accreditation standards or institutional policies.

The tension between curriculum requirements and the need for authenticity further explains why educators vary in their reliance on AI detection versus task redesign. Educator 1, with somewhat more curricular freedom it seems, focuses on "less exams and more real-world outcomes." Conversely, Educator 3 revealed that while they believe in reflective practices, frequent mandatory tests limit their implementation (See Table 4.9). This highlights a fundamental barrier: even when teachers acknowledge the value of reflective or personalized tasks to reduce AI

misuse, they may lack the curricular leeway to introduce such measures extensively. Overall, curriculum constraints persist as a notable hurdle, affecting how much educators can adapt assessments in line with the realities of AI-augmented learning. While a few find ways to innovate within these structures, the majority point to institutional and policy-level reforms - such as adjusting mandatory assessment formats or pacing guides - as prerequisites for developing more robust, AI-resilient evaluations - directly contributing to what further strategies can be implemented (objective 3).

Subject-specific challenges

Most participants recognized that subject-specific factors significantly shape their responses to AI's impact on assessments, connecting directly to research objective 1 (educators' perceptions) and research objective 2 (strategies they adopt). In STEM-oriented contexts such as science, math, and geography, teachers (particularly Educators 1 and 2) find it more feasible to incorporate tasks that highlight process over final answers (see Tables 4.2, and 4.10). For instance, Educator 2, who primarily teaches Mathematics and Science, believes that maintaining authenticity is more manageable due to the unique nature of these subjects. Mathematics and Science inherently emphasize method and problem-solving processes, making them less susceptible to AI-generated content. Educator 2 indicated that assessing understanding through individual practical tasks, where students must apply unique values and methods, and tasks that focus on process over product limits the effectiveness of AI in automating responses. This focus on individual calculation and unique data gathering inherently requires students to engage deeply with the material, reducing the risk of academic dishonesty facilitated by AI tools.

By contrast, language-based subjects - taught by Educators 3 and 4 - are more vulnerable to AI misuse, as generative tools excel in crafting text or translations (see Table 4.10). This vulnerability often prompts these educators to rely on restrictive platforms that disable outside tabs or detection tools scanning for AI's linguistic patterns. Educator 4, for example, pointed out the difficulty of discerning authentic student writing from advanced AI outputs, while Educator 3 expressed frustration at never being fully certain whether an essay was authored by a student or a language model. This reliance on technological restrictions demonstrates how subjects heavily tied to writing and translation face unique pressures to preserve authenticity. Interestingly, these subject distinctions help explain why Educators 3 and 4 (language) remain more inclined toward preventing AI use rather than adapting tasks, and why Educators 1 and 2 (social science, math, and science) are quicker to pivot toward more process-driven or reflective methods. Although all participants acknowledge the need for adaptation, the practical hurdles differ substantially between numeric/problem-solving disciplines, where individual computations or data sets are paramount, and textual disciplines, where AI can seamlessly generate polished responses. Consequently, the subject-specific dimension shapes each educator's perceived risk, reliance on detection, and openness to deeper assessment redesign.

Ultimately, educators' ability to adapt assessments in response to AI is not solely determined by individual preference but is deeply shaped by external constraints. These findings highlight a critical tension: while educators recognize the need for assessment adaptation, their ability to

fully implement changes is restricted by systemic barriers. This underscores the necessity of institutional and policy-level reforms, such as more flexible assessment models, updated accreditation standards, and professional development to support AI-adaptive assessment strategies.

5.3 Conclusion

Educators' responses reveal a nuanced landscape where perceptions of AI's role in assessments vary significantly. Some, notably Educators 1 and 2, advocate for integrating AI as a learning aid by redesigning tasks to emphasize process, reflection, and individualized problem-solving. In contrast, Educators 3 and 4, particularly in language-based subjects, favor strict technological restrictions - using locked browsers and AI detection - to safeguard authenticity. Both approaches, however, are constrained by rigid curricula and institutional policies that limit the extent of meaningful adaptation. This central divide highlights an ongoing tension: while some educators see AI as an opportunity to enrich assessment design through ethical integration and innovative task reconfiguration, others view it as a threat to critical thinking and originality that must be controlled. The interplay of these perspectives underscores the complexity of aligning assessment practices with evolving AI capabilities, subject-specific demands, and existing curricular frameworks.

These insights set the stage for the subsequent discussion chapter, where findings will be examined in relation to established literature, theoretical frameworks, and the study's research objectives. This next phase will delve deeper into how these emerging themes both challenge and enrich our understanding of assessment authenticity in an AI-driven educational landscape.

CHAPTER 6: DISCUSSION

6.0 Introduction

The previous chapters presented the empirical findings - detailing and descriptively analyzing educators' perspectives on AI's impact on assessment authenticity, the challenges of maintaining validity, and diverse adaptive strategies. It revealed that traditional, output-focused assessments, especially in language subjects, no longer reliably capture genuine student understanding, with responses shaped by subject, curriculum, and institutional factors. This chapter moves beyond description, aiming to critically interpret these themes through established theoretical frameworks and relevant literature. It links the empirical insights to the study's research objectives by exploring how educators perceive and adapt assessment practices to sustain authenticity in AI-influenced environments, and it discusses the broader implications of these adaptations for future strategies.

To provide a structured entry point into the discussion, this introduction offers a brief recap of the key empirical findings from data. These findings, drawn from educator perspectives, revealed complex and sometimes conflicting attitudes toward AI in assessments, challenges in maintaining assessment validity, and approaches to assessment adaptation or restriction. The interconnected nature of these emergent themes is visually represented in the concept maps below, which aim to serve as a visual summary of the relationships between core findings from data and their relevance to the study's objectives:

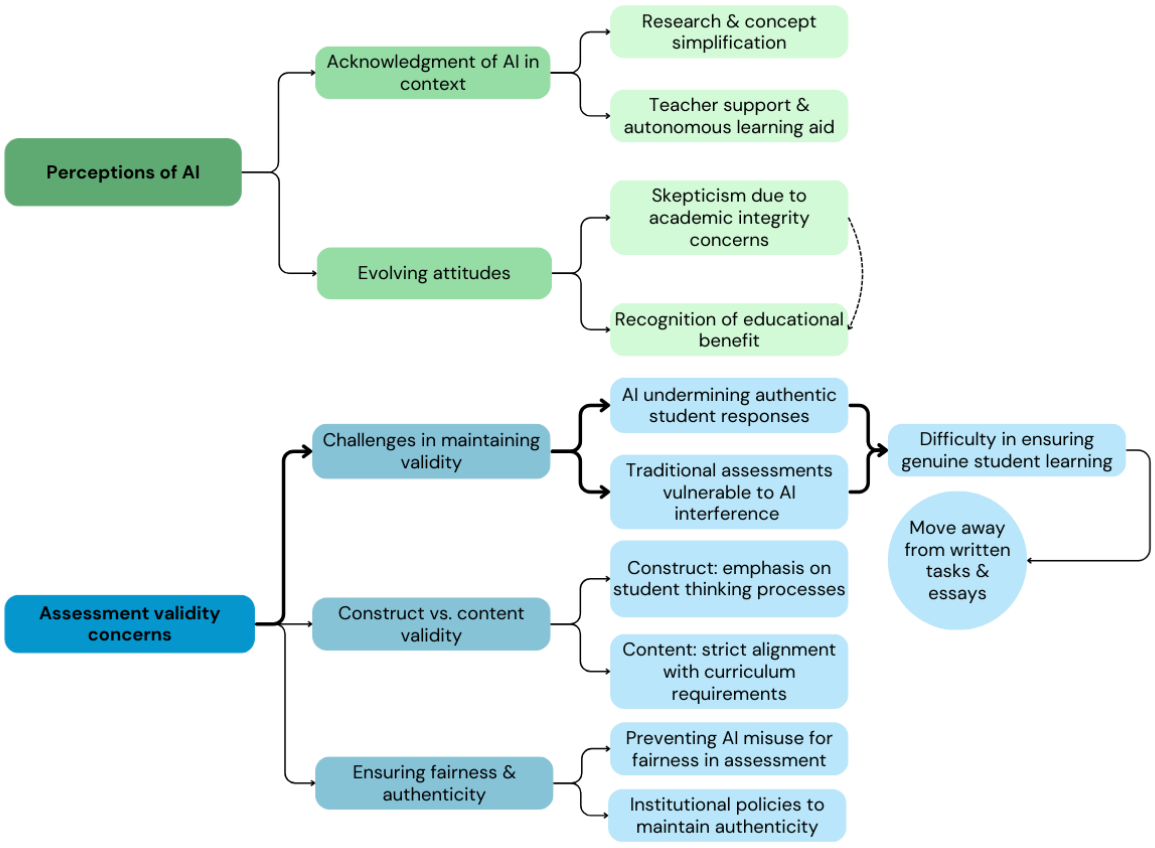

Figure 6.1 Core empirical findings. Figure summarizing how evolving attitudes toward AI influence concerns about academic integrity, fairness, and authenticity. It highlights two major tensions: (1) maintaining validity as traditional assessments become vulnerable to AI interference, and (2) ensuring assessments remain fair and meaningful in an AI-driven landscape. Bolded connections denote aspects most pertinent to the study's research objectives.

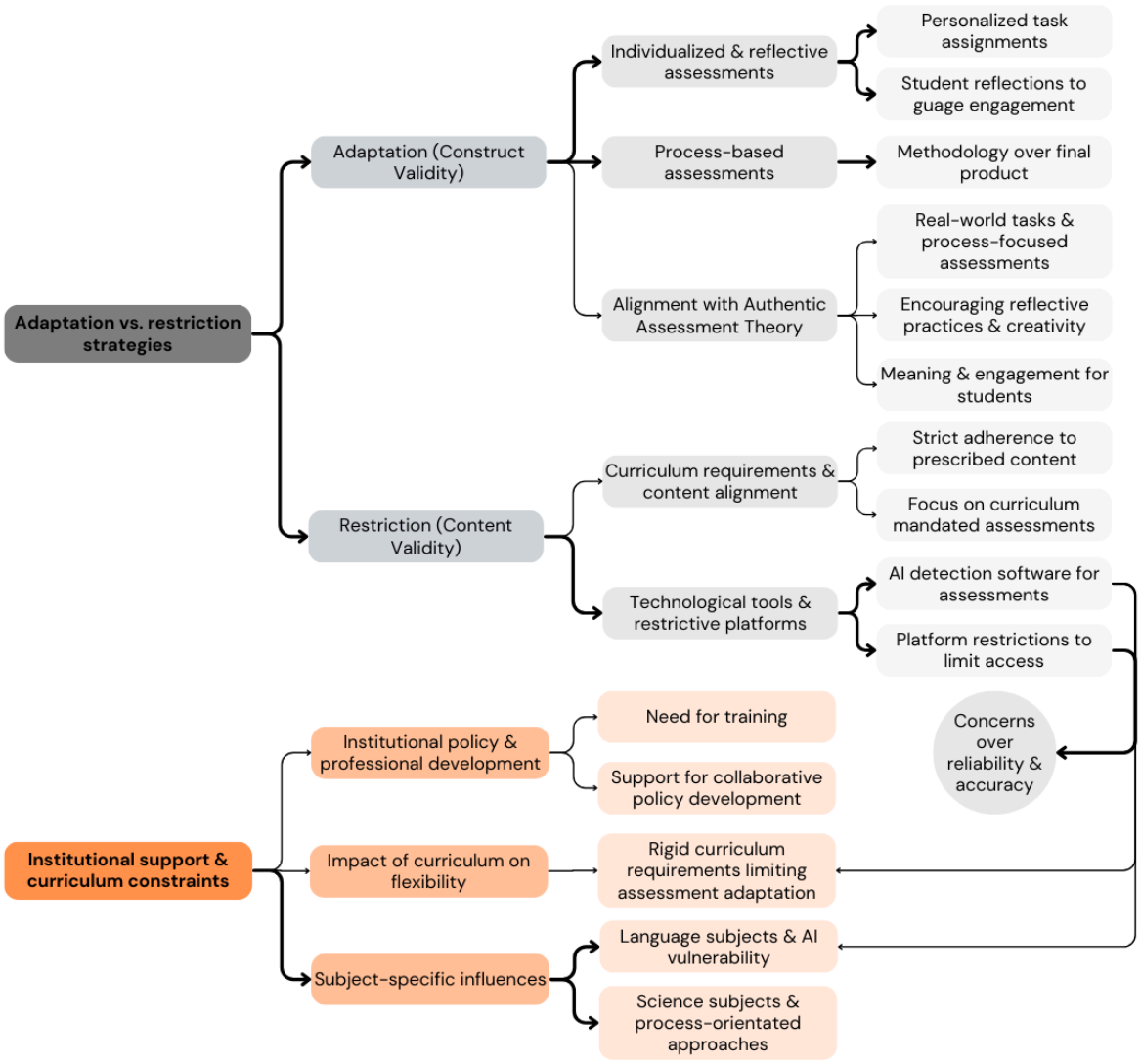

Figure 6.2 Core empirical findings cont. Figure illustrating the divergent approaches among educators - some favoring construct-valid, process-based and reflective strategies, while others rely on restrictive measures like AI detection and platform limitations to uphold content validity. It also highlights the impact of institutional support, curriculum constraints, and subject-specific factors, with bolded connections indicating key elements relevant to the research objectives.

6.1 Thematic discussion of findings

This discussion synthesizes and interprets the key themes presented and analyzed in preceding Chapter 4 and 5 by relating them to relevant literature and highlighting the emerging implications and complexities that emerge in relation to the research objectives. Unlike the previous thematic analysis - which focused on describing and deepening empirical findings - this section aims to critically examine, validate and challenge these themes, highlighting areas of

alignment, contradiction, and practical complexity. In doing so, it aims to lay the groundwork for the final synthesis, directly addressing how online assessment practices can be adapted to uphold authentic student evaluations in the age of AI.

6.1.1 Educators' perceptions of AI in online assessment

In this first theme, the discussion builds on the thematic analysis and centers on how the participating educators perceive and respond to AI technologies in online educational contexts, particularly as these perceptions influence (and are influenced by) the evolving demands of maintaining authenticity in assessment. Educators' views range from seeing AI as a beneficial tool for research and learning to regarding it as a threat to validity when assessments rely on easily replicable outputs. This dual influence mirrors the broader literature, which emphasizes AI's transformative potential alongside serious concerns about authenticity (Winkler & Sollner, 2018; Zawacki-Richter, Marin, Bond & Gouverneur, 2019).

The previous chapter illustrated that while some educators appreciate AI's capacity to simplify complex concepts and support research, they also warn against overreliance that may foster superficial engagement. Others have evolved from initial skepticism - particularly in contexts like Math and Science - to a more measured acceptance that promotes method-driven assessments, reflecting literature on the role of professional reflection, digital literacy, and teacher agency in lowering resistance to technological tools, in this case AI, and subsequently implementing a more nuanced approach to maintaining assessment authenticity (Shi, Ding & Choi, 2024; Frutos et al., 2024). It was noteworthy that educators who favored integration (notably Educator 1) also worried about authenticity and lazy approaches, but sought to address it pedagogically (teaching the value of genuine learning), rather than technologically (blocking AI outright). This approach underscores a deeper commitment to teaching ethical and reflective practice, beyond the purely technical dimension of controlling AI.

In contrast, a segment of educators (Educator's 3 and 4) maintain a prohibitive stance, relying on detection tools and restricted platforms despite acknowledging the limitations of such measures. This approach, echoed in discussions by Ifelebuegu (2023) and Elkhatat et al. (2023), underscores the tension between preserving traditional assessment integrity and the risk of stifling creative integration and needed adaptations. Notably, one case (Educator 4) showed a dramatic shift—from viewing AI as an outright threat, particularly in language subjects, to adopting an "AI-as-aid" framework, which aligns with recent work by Perkins et al. (2024) and related studies that show how exposure to positive, well-structured AI activities can reshape educators' attitudes, improve language learning and offer opportunities for knowledge sharing (Kim, Cha & Kim, 2021; Roe, Perkins & Tregubova, 2024).

Collectively, these perspectives reveal a continuum of responses influenced by subject context and pedagogical considerations. STEM educators often see AI as manageable and even valuable through process-based assessments that naturally limit misuse, whereas language educators, whose assessments depend on subjective, text-based responses, see AI as a direct threat and tend to favor stricter oversight (Chan et al., 2025; Smolansky et al., 2023).

Given these patterns, several practical considerations emerge:

Responses to AI challenges must be tailored: Varying perceptions indicate that responses cannot be uniform. In language-based subjects, strategies such as reflective practices, oral defenses, and iterative writing tasks can mitigate AI's risks (Perkins et al., 2024; Kizilcec et al., 2024), whereas in STEM, assessments that emphasise step-by-step reasoning reduce reliance on AI. *Importance of professional development:* Evolving educator attitudes highlight the need for AI-literacy training and adaptive assessment strategies to help teachers shift from restrictive to integrative approaches.

Overall, educators' perceptions of AI reconfigure core assumptions about teaching, learning, and assessment authenticity. This tension - between adaptation and control - shapes not only how educators perceive AI but also how they navigate the challenge of ensuring that assessments remain valid and accurately measure student learning. Theme 2 will then examine how these perceptions translate into concerns over assessment validity in an AI-prevalent environment.

6.1.2 Validity and authenticity of online assessment in an AI era

In this second theme, the aim is to explore how participating educators perceive the credibility of their assessments in the context of AI's growing influence on online education. Educators express varying degrees of confidence in traditional, content-heavy assessments - with many now questioning their ability to reliably capture genuine student learning. Whereas process-based tasks are increasingly valued for engaging deeper cognitive skills, there is widespread concern that traditional assessments no longer distinguish authentic student output from AI-generated content. This insight underpins the research objective of exploring how online educators perceive and adapt their assessment strategies to ensure authenticity in an AI-influenced learning environment.

A central insight from the data is that assessments reliant on rote recall, a final product, as well traditional written formats, are increasingly viewed as inadequate. The literature supports this view and a shift toward process-focused assessments, which emphasize how students arrive at answers rather than merely producing final products (Ifelebuegu, 2023; Kadel et al., n.d; Mills et al., 2023). In math and science contexts, for example, assessments that require students to demonstrate their thought process are seen as inherently more robust by educators, although there is caution that even these tasks may eventually be challenged by evolving AI capabilities (Chan et al., 2025; Kizilcec et al., 2024).

In contrast, detection-based strategies offer some assurance, with Educator 3 and 4 believing that their assessments are valid when the correct platforms are used, but are fraught with limitations. Educators have noted that while these measures can flag potential AI involvement, they are often insufficient, time-intensive, and vulnerable to circumvention. The literature echoes these concerns, warning that purely restrictive tactics risk sparking an arms race with increasingly sophisticated AI tools (Perkins et al., 2024; Elkhatat et al., 2023; Weber-Wulff et al., 2023). Moreover, secure assessment platforms may limit unauthorized tool use, yet they do not

guarantee long-term validity if AI capabilities continue to outpace these restrictions (Tuah & Naing, 2021).

Unexpectedly, some educators acknowledged the limitations of even process-based tasks (Educator 2), admitting that evolving AI might eventually replicate step-by-step reasoning. This underscores the need for continuous adaptation and agility in assessment design (Vargas et al., 2024). Moreover, the shift in perspective from Educator 4 - from strict reliance on detection to considering the integration of AI into assessment tasks - suggests that long-term solutions will likely involve a blended approach that combines reflective practices with adaptive technological measures. It was also notable that educators who advocate for teaching the importance of "genuine learning" (Educator 1 and 2), rather than merely punishing AI misuse, appear less frustrated with potential misconduct, perhaps because they approach AI's presence as a pedagogical challenge rather than a purely technological one.

Several practical considerations emerge from these complexities:

Emphasising higher-order thinking skills: Multi-step explanations, personal reflections, or context-specific examples can reduce the risk of superficial, AI-generated outputs. This approach applies across disciplines, including the humanities and languages, where reflective journals and iterative drafts help reinforce authentic authorship (Yung et al., 2024; Kadel et al., n.d.). *Balancing detection and human oversight:* Detection tools may serve as an initial red flag but should be supplemented by teacher-led follow-ups—such as mini-interviews or oral defenses—to verify student understanding (Kadel et al., n.d.). This approach preserves educator agency and prevents over-reliance on detection systems; however, the capacity to "know your students," though powerful in terms of detecting AI misuse, is harder to scale in large online cohorts (Heil and Ifenthaler, 2023).

Ultimately, educators' perceptions of assessment validity and authenticity signal a critical need for adaptive practices that move beyond recall, purely text based methods and unreliable detection strategies. As traditional assessments struggle to safeguard authenticity in an AI-prevalent environment, continuous adaptation and innovative approaches - integrating both human oversight and evolving AI literacy - are essential for ensuring credible evaluations of student learning. This realization naturally leads to the next theme, which examines how educators are adapting their assessments in response to these challenges.

6.1.3 Adapting online assessments to AI's influence

Building on the recognition that current assessment methods may fail to ensure authenticity, this theme focuses on the operational adaptations educators are implementing—or considering—to create tasks that genuinely reflect student understanding despite sophisticated AI capabilities. Here, the emphasis shifts from diagnosing the problem to outlining concrete, innovative strategies for redesigning assessments.

A recurring motif in the data is the need to move beyond traditional, content-based tasks that AI can easily replicate. Educators advocate for assessments that require students to engage in

critical thinking, reflection, process, context and application to the real-world. For instance, tasks designed to elicit multi-step explanations, personalized reflections, or context-specific examples expose unique cognitive pathways and reduce the likelihood that AI-generated responses will suffice. This approach is supported by literature emphasizing that HOTS tasks are inherently more challenging for AI to replicate (Kadel et al., n.d.; Ifelebuegu, 2023; Rahman et al., 2022).

In practice, educators in the science domain stress “method over final answer” by incorporating tasks that demand demonstration of procedural reasoning - thus naturally limiting AI’s effectiveness. In writing-intensive or language-based subjects, the use of reflective journals, iterative drafts, and individualized data collection further discourages generic AI outputs. Such personalized assessments, as noted by Nasab (2015) and Smolansky et al. (2023), require students to apply knowledge to distinctive, real-life contexts rather than regurgitating standardized information. In addition, there is a notable shift toward constructive AI integration from both data and literature—designing assessments where AI is used as a tool within the assessment rather than solely being blocked. For example, students may be tasked with working with AI to generate initial drafts and then critique or refine these outputs. This strategy not only mitigates AI misuse but also fosters critical digital literacy, ethical engagement with technology and mirrors real-world contexts (Perkins et al., 2024; Lang, 2024).

From these insights, several practical considerations stand out:

Prioritising cognitive processes: Assessments that require step-by-step reasoning or reflective commentary are less susceptible to superficial, AI-generated responses. *Embedding personal context:* Tasks that draw on students’ unique experiences and local data make it more difficult for generic AI solutions to suffice. *Gradual AI integration:* Rather than imposing outright prohibitions, incorporating AI under guided conditions can transform it from a potential threat into a pedagogical asset.

Overall, this theme highlights that sustainable assessment practices will likely combine authentic, individualized, process-focused design with carefully managed AI usage. By adapting assessments in these ways, educators can better capture genuine student learning while navigating the evolving challenges posed by AI. The next theme will then explore the broader technological, institutional, and structural factors that further shape these adaptation strategies.

6.1.4 The role of technology and institutional support in assessment adaptation

In this fourth theme, the discussion focuses on how educators utilize technological tools and institutional support to maintain assessment authenticity in response to AI. While technology is widely seen as valuable for detecting or limiting AI misuse, its true effectiveness depends on broader institutional strategies, clear policy frameworks, and ongoing professional development.

Educators’ approaches vary: those in language-based subjects—where AI-generated content is a significant threat due to the inherent nature of their assessments—tend to favor restrictive measures, such as secure browsers, AI detection tools, and multi-layered monitoring (e.g.,

Google Docs version histories). In contrast, others emphasize the need for collaborative institutional dialogue and system-wide reforms. For instance, while Educator 1 views AI detection as useful only when paired with "system-wide rejection" of AI-susceptible tasks, Educator 2 stresses that technology serves as a time-saving aid but ultimately relies on strong leadership and clear policies (Tuah & Naing, 2021; Perkins et al., 2024).

Regardless, across all participating educators, technology is acknowledged as a tool for maintaining assessment authenticity, but Educators 3 and 4 rely on it as their primary and operational means of adaptation, highlighting an overarching and conceptual pattern across initial negative perceptions of AI, the influence of subject matter (inherent susceptibility of language assessments) and curriculum mandates, and the strategies chosen to maintain assessment authenticity. Notably, Educator 3 conflates AI use with traditional plagiarism, reinforcing their perception of AI as a direct threat to academic integrity rather than a potential learning tool. This aligns with literature highlighting how educator perceptions shape whether AI is integrated constructively or met with punitive measures (Frutos et al., 2024; Unal & Unal, 2024).

However, a critical insight is that technology alone is insufficient. Continuous teacher training in AI literacy is essential, as educators must "be in the world of AI" to understand its evolving capabilities and limitations (Kizilcec et al., 2024; Smolansky et al., 2023). Moreover, establishing standardized institutional frameworks can help balance detection with the flexibility required for these diverse teaching contexts (Mills et al., 2023). This balance is particularly crucial given the tension between institutional standardization and individual teacher autonomy, as noted by educators who insist that effective AI management ultimately "comes down to you, as the educator." This contradiction highlights the balance institutions must strike between structured policies and allowing educators the flexibility to adapt AI-responsive assessments to their specific contexts.

The practical implications that emerge from these patterns are threefold:

Policy clarity: Clearly delineating acceptable versus unacceptable AI use, specifying detection tools and limits, and outlining enforcement measures is essential for standardisation and fairness when institutions rely on restrictive measures (Anita, 2024; Perkins et al., 2024; Elkhatat et al., 2023). *Collaborative practices:* Regular staff workshops and working groups can keep teachers informed about new AI tools, detection methods, and evolving policies, thereby preventing inconsistent or isolated practices across the institution. Encouraging knowledge-sharing among faculty fosters a more cohesive, proactive stance rather than reactive enforcement, which in turn helps maintain the authenticity of assessment practices (Mills et al., 2023). *Constructive use of technology:* A key missed opportunity in AI-adaptive assessment is the potential to reframe ostensibly restrictive strategies—such as checking Google Docs version histories—as formative tools that support authentic learning rather than serving only punitive functions. While Educator 3 currently uses version histories to detect AI use, research underscores draft checking for its value in process-based, reflective, and iterative assessment approaches. Leveraging these tools constructively could therefore align restrictive measures

with authentic-assessment principles, reinforcing learning rather than cultivating a reactive, enforcement-driven culture toward AI in education.

Overall, the interplay between technology, institutional support, and individual educator agency is complex. While immediate technological solutions offer short-term fixes, their long-term success depends on integrated policies, ongoing professional development, and a shared institutional vision of proactivity rather than reactivity.

6.2 Interpreting findings through the conceptual framework

Across data and literature, a common goal emerges: ensuring assessments measure genuine learning while remaining fair and aligned with what intends to be measured. However, educators' strategies reveal inherent trade-offs between validity dimensions, authenticity principles, and contextual realities. This section interprets, evaluates, and synthesizes the study's findings through the established conceptual framework (2.1 - 2.2). By applying these theoretical lenses, this section aims to examine how educators' assessment adaptation strategies align with or diverge from established principles of valid, authentic, and contextually appropriate evaluation in AI-influenced online learning environments, offering an evaluation of their strategies and perceptions. The purpose is to evaluate the effectiveness of these strategies in upholding authentic student evaluation (Research aim), analyze how educators perceive and respond to challenges of assessment authenticity (Objective 1), and identify the strengths, limitations, and gaps in their adaptation approaches (Objectives 2 and 3). Thus continuing the foundation for addressing the research questions in the subsequent Section 7.1.

6.2.1 Validity Theory application

Across data and literature, generative AI is widely seen to challenge the validity of assessments—raising concerns about whether tasks truly measure student understanding, align with intended content, and ensure fairness. Educators' adaptations vary in addressing construct, content, and consequential validity, highlighting tensions between accurate measurement, curricular alignment, and equitable outcomes.

Construct Validity: Is real understanding still being measured?

Both data and literature agree that construct validity, the degree to which assessments capture what they intend to measure - genuine student understanding - is significantly undermined by AI. Traditional, output-based tasks (e.g., essays, short-answer responses) are particularly vulnerable to polished AI-generated outputs that mimic student work (Zhai et al., 2024; Heil & Ifenthaler, 2023), often masking superficial cognitive processes (Xia et al., 2024; Ifelebuegu, 2023; Kadel et al., n.d). Educators note that while some rely on detection to flag inauthentic work, many advocate for process-focused assessments that require iterative reasoning and personalized problem-solving—approaches that, as seen in science contexts better capture the learner's thought process (Kadel et al., n.d; Ifelebuegu, 2023; Charles Sturt University, 2024). That is, by requiring students to demonstrate their thought process, these assessments shift

what they intend to measure from final answers to capturing cognitive reasoning, emphasizing the learning process over the end product, making it difficult for AI to replicate and thereby upholding construct validity. However, while STEM educators are able to make these adjustments more readily, educators working in language subjects face structural constraints that limit such flexibility (Kizilcec et al., 2024) - a tension explored further under content validity.

Content Validity: Do tasks still reflect the intended curriculum?

Content validity concerns whether assessments align with prescribed learning objectives. While educators acknowledge the importance of ensuring tasks remain aligned with prescribed content, the adaptations made to preserve construct validity can sometimes strain this alignment. In language subjects, for example, educators (e.g., Educators 3 and 4) rely on restrictive measures to preserve traditional, text-centric tasks, ensuring content conformity even if deeper cognitive engagement is compromised (Kadel et al., n.d; Elkhatat et al., 2023; Perkins et al., 2024). Their reasoning is straightforward: if they shift too drastically toward process or alternative outputs, they risk straying from the official requirements that explicitly call for textual demonstration of language proficiency. Thus, detection tools and platform restrictions become their primary adaptation mechanism against AI influence, allowing them to remain within the set curriculum's boundaries.

However, upholding content validity does not translate to upholding construct validity - ensuring the test aligns with the content it intends to does not translate to that same test measuring the cognitive skills or abilities it intends to in this context. As seen unanimously through literature and data, restriction and detection is not foolproof or sustainable method for upholding authenticity of assessments - it is temporary fix to ensure that the methods at risk (output based tasks, essays, etc) remain valid and aligned with the content they intent to measure without deeper adaptation (Kadel et al, n.d; Elkhatat et al., 2023; Perkins et al., 2024). In contrast, STEM educators experience fewer content validity challenges, as their process-based tasks naturally align with both content and construct requirements, underscoring a dilemma between strict adherence to curricular forms and the need for authentic evaluation. Thus, while content validity aims to ensure coverage of prescribed material, it can paradoxically undermine construct validity when rigid formats encourage superficial responses over cognitive engagement.

Consequential Validity: Are tasks fair and equitable amid AI disparities?

Consequential validity examines the fairness and equity of assessments in an AI-influenced landscape. Science domain educator 1 and 2 design tasks that inherently limit AI manipulation through process, supporting a more equitable assessment environment (Kadel et al., n.d; Ifelebuegu, 2023). For language educators (Educators 3 and 4), concerns around fairness are even more pronounced. While they prioritize aligning assessments with mandated content, they are also acutely aware that AI can easily replicate the required text-based outputs, thereby threatening the authenticity of student work. To mitigate this risk, they rely heavily on restrictive measures - such as lockdown browsers and AI detection tools - to ensure that no student gains an unfair advantage through AI-generated responses (Solomon, 2024; Akanni, 2024; Anita, 2024).

However, these strategies can have unintended consequences for this dimension of validity, such as false positives and ethical concerns, potentially disadvantaging some students while inadvertently ignoring AI's potential as a supportive tool (Elkhatat et al., 2023; Perkins et al., 2024; Tenakwah et al., 2023). As a result, although educators aim to reinforce fairness through strict control measures, literature highlights a persistent tension between maintaining superficially impartial testing conditions and genuinely upholding consequential validity in an evolving, AI-influenced educational landscape (Tenakwah et al., 2023; Perkins et al., 2024; Elkhatat et al., 2023). Additionally, all Educators stress the importance of clear, standardized institutional policies to ensure consistency in enforcement and to uphold fair, equitable outcomes reflecting the necessity for institutional-level adaptations that uphold consequential validity by ensuring equitable expectations and consistent application of assessment standards across the educational setting (Chan, 2023; Strielkowski et al., 2024; Roe et al., 2024).

6.2.2 Authentic Assessment application

There is broad agreement in both data and literature that authentic assessment principles are essential for ensuring assessments remain valid and credible in AI-influenced environments. Educators demonstrate varied alignment with these principles—ranging from process-driven tasks to more restrictive measures—reflecting differences in subject context and adaptation strategies. This subsection examines how adaptations foster (or fail to foster) process-oriented learning, real-world relevance, reflection, and creativity, while also identifying gaps for potential improvement.

How do educators' adaptations align with authentic assessment principles?

A process-focused approach, as seen with Educator 1 and 2, is central to authentic assessment, emphasizing the demonstration of students' thought processes rather than merely evaluating final outputs identified as particularly vulnerable. Beyond process-driven design, real-world application and contextualized learning further align these educators' strategies with authentic assessment. That is, Educator 1's direct prioritization of tasks with *"real-world outcomes"* and Educator 2's focus on context involving unique data collection or contextualized problem-solving help situate knowledge in meaningful settings (Wiggins, 1990). Furthermore, even those who rely on restrictive measures (Educators 3 and 4) incorporate elements of personalization and contextualization, such as specific writing prompts, informal oral defenses or tasks tailored to student skill level. These adaptations intend to foster originality, creativity and engagement and ensure students' responses are unique to their lived experiences (Ifelebuegu, 2023; Heil & Ifenthaler, 2023; Kadel et al., n.d) and remain authentic. This reflects an effort to promote practical skills and creativity - core tenets of authentic assessment - even if the underlying assessment format remains traditional.

Where do strategies fail to align with authentic assessment?

Restrictive and detection-based strategies—like AI bans, secure browsers, and other compliance measures—while common responses to AI's influence in literature and through data, fundamentally misalign with the principles of authentic assessment. Authentic assessment

emphasizes higher-order thinking, real-world application, reflection, and student agency (Wiggins, 1990; Darling-Hammond & Adamson, 2010) - qualities that restriction-based approaches fail to cultivate (Perkins et al., 2024; Lang, 2024). Ultimately, these measures may prevent immediate AI use but do not encourage students to document their process or engage in iterative revisions, leaving assessments susceptible to superficial outputs (Kadel et al., n.d; Ifelebuegu, 2023). Consequently, consensus across data and literature underscores that while restriction may mitigate immediate concerns and uphold authenticity to some extent in contexts that rely on traditional assessment forms (Akanni, 2024; Solomon, 2024), it is a short-term solution that fails to ensure authentic student evaluation (Elkhatat et al., 2023; Perkins et al., 2024).

What authentic strategies are missing?

While participating educators incorporated elements of authentic assessment, several key strategies were absent. Notably, collaborative and oral assessments—such as group projects, discussions, and presentations—were not referenced, despite their effectiveness in maintaining authenticity and mitigating AI reliance (Charles Sturt University, 2024; Ogunleye et al., 2024; Hauff & Nilsson, 2022). While Educator 4 mentioned informal oral defenses, structured oral assessments remain underutilized, particularly in language-based subjects where AI-generated responses are difficult to detect. Similarly, multimodal assessments—such as video submissions, audio reflections, and portfolios—were absent, despite literature highlighting their role in fostering engagement and reducing reliance on AI generated content (Kadel et al., n.d; Messick, 1994; Vargas et al., 2024).

Explicit reflective assessment elements—such as journals, learning logs, or peer reviews—were also overlooked. Educator 1 mentioned reflection in engaging with others' ideas, but structured reflection requiring students to track their thought process over time was missing. For language-based subjects, reflection could complement restrictive measures by requiring students to justify their writing choices and critique AI suggestions (Yung et al., 2024). Finally, while AI integration is recognized in literature as a sustainable approach to fostering critical thinking and real-world application (Perkins et al., 2024; Lang, 2024), educators' responses lacked concrete strategies for structured AI use. Although Educators 1, 2, and 4 acknowledged AI's potential, its practical implementation in assessments remains limited. These omissions—collaborative learning, multimodal assessment, structured reflection, and AI integration—represent unrealized opportunities to strengthen authentic student evaluation in AI-influenced online contexts.

6.2.3 Situated Cognition application

Across data and literature, there is consensus that context—including institutional policies, subject norms, curriculum mandates, and digital environments—profoundly shapes how educators adapt assessments in AI-prevalent settings. Educators consistently noted that their adaptations are influenced not only by pedagogical choices but also by broader systemic realities. This subsection interprets how these contextual factors explain variations in adaptation strategies and lays the foundation for further strategies that uphold authentic student evaluation.

Do assessments reflect the context of learning?

Situated Cognition Theory posits that learning is inseparable from its context—shaped by tools, interactions, and the environment. In online schooling, where learning is digital and AI-embedded, most assessments remain traditional, particularly in language subjects with mandated essay formats. This creates a disconnect between how students actually learn in these digitally rich environments (often with AI as an everyday tool) and how they are assessed (Vargas et al., 2024; Lang, 2024). Thus, when students use AI while learning but are then assessed in AI-prohibited environments, assessments fail to reflect the true context of knowledge construction. Learners constantly engage with digital artifacts, information sources, and AI, making it impractical - and pedagogically unsound - to remove AI entirely from the learning and subsequent assessment process (Lang, 2024). Without structured scaffolding that integrates AI—such as through critique-based activities—students resort to unsupervised use, which undermines authentic evaluation. Conversely, assessments that incorporate AI constructively can better mirror real-world learning environments and support authentic, situated assessment types (Perkins et al., 2024; Lang, 2024).

Do assessments foster meaningful interactions?

Meaningful social and environmental interactions are central to Situated Cognition that posits that knowledge is constructed through social negotiation and interaction with both peers and tools in the environment (Brown et al., 1989). Although some educators reference one-on-one meetings or stress “knowing your students,” these interactions typically serve to police assessments rather than foster genuine collaboration. By not leveraging collaborative assignments - or structured engagements with AI - educators miss an avenue for reinforcing genuine student input and restricting AI’s capacity to produce prepackaged solutions. This shortfall suggests that, although some educators do hold small meetings to verify authenticity, the broader potential of “meaningful interactions” in an AI context is underutilized.

How does subject and curriculum influence educator adaptations?

Subject-specific factors and curriculum constraints strongly influence adaptation strategies, as seen through both data and literature. Language educators, dealing with text-heavy tasks easily replicated by AI, often feel “locked into” standardized formats and rely on restrictive measures, whereas STEM educators benefit from naturally process-driven tasks that allow more flexibility (Chan et al., 2025; Kizilcec et al., 2024). Rigid curricula—especially within inflexible national frameworks that have not been updated for digital learning environments—limit opportunities to adopt collaborative or innovative tasks, underscoring the role of institutions in supporting teacher agency and fostering authentic, process-focused formative assessments (Mills et al., 2023). That is, even when summative assessments are mandated, schools can implement security measures aligned with authenticity principles to maintain assessment integrity, and more importantly, institutions can encourage the design of authentic, process-focused formative assessments that offer teachers valuable pedagogical insights while still complying with curricular frameworks.

Ultimately, these context-driven choices underscore an important and emergent contextual pattern from data: educator adaptations are shaped by the intersection of their perceptions of AI, subject-specific susceptibility, and curriculum flexibility. Negative perceptions combined with more rigid curricula and highly AI-susceptible subjects (e.g., language - Educators 3 and 4) reinforce restrictive approaches, while positive perceptions paired with flexible curricula (e.g., STEM - Educators 1 and 2) facilitate authentic, adaptive strategies. Understanding these contextual factors is essential for proposing further strategies that uphold authentic student evaluation in AI-influenced online environments.

6.3 Conclusion

This chapter critically analyzed the study's findings, interpreting educators' perceptions, assessment validity concerns, adaptation strategies, and institutional influences through literature and the lenses of Validity Theory, Authentic Assessment, and Situated Cognition. The discussion highlighted that while educators recognize the threat AI poses to assessment authenticity, their responses diverge between adaptation (process-driven tasks, reflection, AI integration) and restriction (detection tools, secure platforms, and policy enforcement). The effectiveness of these strategies is shaped by subject-specific factors, curriculum constraints, and institutional policies, with STEM educators more inclined toward adaptive strategies and language educators favoring restrictive approaches. Despite varied perspectives, both data and literature emphasize that sustainable solutions require moving beyond traditional assessment forms policed by purely restrictive measures toward AI-literate, contextually relevant, and process-focused assessment adaptations.

Ultimately, these insights contribute to a deeper understanding of how educators navigate assessment authenticity in AI-influenced online learning. The discussion has explored educators' perceptions of authenticity, the strategies they employ to maintain validity, and the potential for further adaptation, offering a nuanced response to the study's overarching focus on assessment adaptation in this evolving landscape. The final chapter now synthesizes these findings, explicitly addressing each research question and concluding the study by outlining key contributions and implications, as well as offering a personal reflection and acknowledging the limitations of study.

CHAPTER 7: CONCLUSION

7.0 Introduction

This final chapter consolidates the study's key findings and their implications, offering a synthesized response to the research aim and objectives. Having explored how online educators perceive the authenticity of assessments in AI-influenced environments, how they are adapting their strategies, and what further measures can enhance authentic student evaluation, this chapter provides a structured conclusion that distills these insights.

Section 7.1 synthesizes findings in direct relation to the study's three research questions, systematically summarizing key insights, interpretations, and their implications through

structured tables. Section 7.2 acknowledges the study's limitations, addressing contextual constraints, research scope, and interpretive considerations while reinforcing the study's value. Finally, section 7.3 integrates concluding remarks with a personal reflection on AI's role in knowledge construction and demonstration, offering broader insights into the necessity of assessment reform in digital education. This chapter ultimately reinforces the study's core argument: authentic assessment adaptation in AI-influenced education requires moving beyond restriction and toward structured, pedagogically sound redesign.

7.1 Synthesis of findings

While educators' approaches to assessment adaptation vary, a key pattern emerges: upholding authentic student evaluation in AI-influenced environments necessitates moving beyond traditional assessment models. By systematically addressing each research question through the tables below—integrating empirical data, literature, and theoretical perspectives—the aim here is to provide a final synthesis of the study's central aim: exploring assessment adaptation strategies that uphold authentic student evaluation in online learning environments influenced by generative AI.

The table below summarizes key insights, interpretations, and implications for authentic student evaluation, addressing **research question 1: How do educators perceive the authenticity of assessments in AI-influenced online learning environments?**

Table 7.1 Synthesis of Educator perceptions

Key insight	Interpretation	Implications for authentic student evaluation
Consensus on authenticity being at risk	Unanimous agreement (data + literature) that AI threatens authenticity of online assessments.	Maintaining authenticity requires intentional adaptation to ensure they measure genuine learning and reflect the context of online learning.
	Traditional assessments (text-based, output-focused) are the most at risk - convincingly mimic student responses, undermining construct validity.	Traditional assessments must be reconsidered in favor of more process-driven tasks.
Divergent perceptions of AI (Threat vs. Tool)	Threat: Language educators → emphasize restriction and detection. Tool: STEM educators → explore process-driven adaptation. Inevitable: Educator 4 (initial prohibition → later recognition of AI's role).	Perceptions directly shape adaptation strategies (restrictive vs. adaptive). Need for professional development to shift perceptions and clear guiding policies.

Subject and curriculum constraints shape perceptions and responses	Language educators face heightened concerns (text-heavy assessments are easy for AI to replicate). STEM educators perceive AI as less of a threat due to inherent process-driven assessments.	Subject matter dictates how AI is perceived and addressed - some subjects are at greater susceptibility.
	Rigid curriculum mandates limit flexibility for adaptation (especially in language subjects).	Language assessments require institutional support to integrate multimodal and oral defense measures that better safeguard authenticity.
	Institutional guidance is lacking, leaving educators to navigate AI's role independently. Inconsistent responses across educators due to lack of structured adaptation frameworks.	Lack of AI literacy training leads to inconsistent adaptation strategies. Institutions need clear policies on AI integration and structured adaptation frameworks.
Tension between restrictive vs. adaptive approaches	All educators acknowledge restriction alone is insufficient to preserve authenticity.	Restriction provides short-term solutions but does not sustain authenticity long-term. Institutions must support adaptation rather than relying solely on detection/control strategies. Need for continuous adaptation.
	Focus on process-based assessments but expressed concern about AI evolving to handle even process-driven tasks.	

This table highlights educators' unanimous recognition that AI threatens assessment authenticity, particularly for traditional, text-based formats. Perceptions of AI as either a threat or a tool shape adaptation strategies, with language educators favoring restriction and STEM educators leaning toward process-driven approaches. Subject-specific challenges and rigid curriculum mandates further constrain adaptation, particularly in language subjects. The lack of institutional support and clear policy direction leads to inconsistent adaptation efforts. While restrictive measures dominate, educators broadly acknowledge that long-term solutions require adaptation beyond detection and control.

The table below synthesizes findings for **research question 2: How are online educators adapting assessment strategies to uphold authentic student evaluation in response to generative AI use?**

Table 7.2 Synthesis of Educator adaptations

Key insight	**Interpretation**	**Implications for authentic student evaluation**

Shifting from product to process	Shifts focus from final products to multi-step reasoning, iterative work, thought processes and reasoning - reducing AI's ability to generate convincing responses.	More AI-resilient but remains underutilized in language-based assessments, where assessments still rely on final written outputs. Authentic evaluation is improved only where cognitive engagement is explicitly assessed.
	More prevalent in STEM, where assessments naturally require procedural steps.	Institutional rethinking of validity: AI requires a paradigm shift in what is considered valid assessment - task authenticity must take priority over output authenticity.
Personalization and contextualization	Incorporates real-world data, personal experiences, and unique inputs, requiring students to collect real-world data or engage with personally relevant tasks, making AI-generated responses impractical. Encourages higher-order thinking and student engagement, preventing generic AI-generated outputs.	Strengthens authenticity by making assessments more relevant, applied, and personally meaningful, but standardized assessments in some subjects (language) limits broad application. Personalization cannot replace broader assessment validity measures alone.
Real-world applications	Refers to tasks with real-world outcomes, such as structured AI use, presentations, portfolios, etc. Although Strongly recommended in AI-era assessment literature, remains underutilized.	Disjointed approach weakens authenticity - assessments should mirror real-world digital engagement to remain credible. Ignoring AI's role forces students to use it uncritically, rather than guiding them toward structured, ethical AI use.
Restrictive and detection measures	Restriction and detection (e.g., lockdown browsers, AI detection tools) serve as security measures to authenticity in contexts that primarily rely on vulnerable traditional assessment forms.	Short-term solution - controls AI misuse in some contexts but does not ensure authentic student evaluation and produces fairness concerns. Works where adaptation is constrained, but is not sustainable or foolproof, as AI continues to evolve.
	High scalable, practical solution for resource constrained contexts that maintains content validity by ensuring tasks remain within prescribed requirements.	
Attempts at AI integration	Some educators recognize AI's role as a learning scaffold but AI integration remains largely	Represents a missed opportunity for fostering authentic engagement with tasks. Structured AI use could

	unexplored in current adaptation practices. Recognized as valuable, but educators lack structured approaches for incorporating AI. There are no clear AI focused reflection tasks, critique-based activities, or structured AI as collaborator strategies in place.	enhance authentic learning and assessment by mirroring real-world applications, but educators remain cautious, slowing its integration. Represents a need for training.
Structural and institutional barriers to adaptation	Rigid curriculum structures, particularly in language-based subjects, prevent educators from adapting assessments freely. Standardized testing requirements limit the application of authentic, process-driven strategies - compounded by lack of guidance and training.	Creates uneven adaptation across subjects. Some educators can modify tasks freely, while others must rely on restrictions creating a consequential validity concern.
		Beyond individual adaptation: Institution-wide collaboration, establishing communities of practice for AI-adaptive assessment design enables structured, consistent, and scalable adaptation strategies.

Table illustrating that educators employ a mix of process-driven assessments, personalization, real-world outcomes, and restrictive measures to maintain authenticity, though adaptations remain uneven across disciplines. Subjects at less perceived risk (STEM) more easily integrate process-focused strategies, while language educators rely on restrictions to meet curriculum mandates, often at the expense of authentic student evaluation. Attempts to integrate AI as a learning tool remain underdeveloped, revealing missed opportunities for structured AI engagement. Institutional limitations create disparities in adaptation, reinforcing the need for system-wide support and clearer adaptation frameworks.

The table below presents findings related to **research question 3: What further strategies can be implemented to adapt assessment methods for authentic student evaluation in AI-influenced environments?**

Table 7.3 Synthesis of further adaptation strategies

Key insight	**Interpretation**	**Implication for authentic student evaluation**
Expanding process-oriented strategies to all disciplines	Process-driven assessments (iterative writing, multi-step reasoning) enhance authenticity but are underutilized in text-heavy disciplines like language.	Authenticity is enhanced when assessments evaluate cognitive engagement over final outputs. Mandated formats limit flexibility (e.g essays), but formative

	Assessments remain product-focused, leaving gaps in construct validity.	assessments can embed process-based strategies. Reflective journals, iterative submissions, or scaffolded drafting offer security measures - not all reflections need to be graded but can provide additional evidence if authenticity is questioned.
Embedding AI as a structured learning tool	AI is acknowledged as a useful tool, but structured integration into assessment is missing. Without clear guidelines, students engage with AI uncritically or in unauthorized ways.	Embedding AI into assessments (e.g., critique-based tasks, AI-assisted brainstorming, AI literacy training) intentionally rather than restricting it can promote ethical engagement and mirror real-world applications. AI-based drafting models (e.g., allowing AI use but requiring iterative revisions) encourage transparent, meaningful engagement.
Reframing restriction as scaffolded security	Restrictive measures (e.g., Google Docs history tracking) are widely acknowledged but applied punitively rather than pedagogically. These tools could be leveraged to scaffold iterative engagement rather than simply detect AI use.	AI use can be permitted within structured, trackable revision histories. AI use is allowed, but drafts must show evidence of student engagement, modifications and refinements over time, offering a blend of security and process assessment, reinforcing authenticity.
		A blended security approach: detection + structured reflection (journals, learning logs, annotated drafts) fosters transparent cognitive engagement. Institutions could frame metacognitive reflection as a security measure, reinforcing authenticity without excessive reliance on restriction. Transparent AI use policies clarify acceptable AI engagement.
Oral assessments and collaboration as a primary adaptation strategy	Heavy reliance on text-based assessments increases AI vulnerability. Literature consistently supports oral assessments (e.g., presentations, structured interviews, oral defenses) as effective security	Educators could pair mandated assessment forms with structured oral assessments (e.g., oral defenses, presentations, interview-style discussions, debate) to enhance authenticity. For high risk subjects, pairing written work

	measures while reinforcing authenticity and learner agency. These are underutilized across educators.	with verbal explanation increases validity while acting as a security mechanism. AI generated text cannot replicate live dialogue and negotiation of ideas.
Expanding multimodal and alternative assessments	Video-based responses, recorded explanations, digital portfolios, and multimodal projects allow students to demonstrate cognitive engagement as well as reflect and adjust in ways AI cannot fully replicate, yet this remains underutilized.	Educators could incorporate video/audio reflections and digital portfolios. For vulnerable subjects, assessments can combine text-based outputs with a reflective multimodal portfolio or a presentation component to reinforce authenticity and reflect the digital nature of learning.
Institutional policy and professional development to support adaptation	Educators lack AI adaptive assessment training, leading to inconsistent adaptation strategies across subjects and institutions - compounded by inflexible and unprepared curriculum. Institutional guidance is fragmented.	Institutions must provide AI-focused professional development and establish system-wide policies for AI integration. Collaborative frameworks and professional learning communities enable structured, scalable adaptation strategies.

Table illustrating further strategies that extend beyond current adaptation efforts, emphasizing sustainable, AI-resilient approaches to authentic student evaluation. Process-driven approaches must extend to more AI-susceptible subjects, ensuring broader application of authenticity-focused assessments. Restriction-based strategies, while necessary in constrained contexts, can be reframed through structured drafting, reflection, and scaffolded AI use - serving as security measures that reinforce authenticity rather than solely policing misconduct. Underutilized but highly effective strategies, including oral assessments, collaborative tasks, and multimodal formats, provide practical solutions for mitigating AI misuse while fostering meaningful engagement. For these adaptations to be scalable and consistently applied, institutional policy, targeted training, and structured professional learning frameworks are essential.

In conclusion, across all findings, educators widely perceive the authenticity of their assessments as compromised, with traditional recall-based, output-focused, and text-heavy tasks being the most vulnerable to AI-generated responses. To counter this, adaptation strategies increasingly emphasize process-driven, individualized, and contextualized assessments, particularly in STEM subjects where procedural reasoning is naturally embedded. However, reliance on restrictive measures remains prevalent, particularly in language-based assessments constrained by rigid curricular mandates, highlighting the need for a shift in approach. Rather than viewing restriction as the primary safeguard, AI must be integrated into assessments in structured ways that promote ethical engagement, critical thinking, and real-world application. To uphold authentic student evaluation in AI-influenced online education,

assessment strategies must evolve beyond traditional formats and better reflect the digital, interactive, and process-oriented nature of online learning.

7.2 Limitations

While this study aims to provide rich, qualitative insights into how online educators perceive and adapt assessment strategies in response to AI, several limitations that may affect the applicability and validity of the findings must be acknowledged (Creswell & Plano Clark, 2018). These limitations stem from the study's case study design, contextual constraints, educator biases, the broader use of literature, and the interpretive nature of the study (Rosenman, Tennekoon & Hill, 2011). Given the qualitative and interpretivist nature of this study, these limitations do not undermine its value but rather define its boundaries, highlighting areas for further exploration.

Case study design and sample size: As a single case study in one fully online South African school, findings are highly context-specific and may not be generalizable to broader online or blended learning settings. The small sample size allowed for in-depth qualitative exploration but captures only a limited range of experiences, reflecting a localized institutional reality rather than a universally applicable AI-adaptive assessment model.

Contextual constraints: Educators in this South African online school operate under a national curriculum that has not been updated for digital or AI-driven learning, potentially limiting assessment adaptation. Formal AI training is minimal, requiring educators to develop AI-responsive strategies without formal support. Compared to online schools in more developed or flexible global contexts, the adaptations observed here may reflect more constrained approaches rather than the full potential of AI-integrated assessment.

Educator bias: With AI's recent emergence as such a disruptive force in education, educators' attitudes remain newly formed and fluid—some view AI as a threat to academic integrity and professional security, while others see its potential for transformation. These biases are still forming and directly contribute to how AI is perceived and responses to, meaning the data captures a specific moment in time rather than long-term, stable perspectives (Creswell & Plano Clark, 2018). As AI literacy, policies, and training improve and there is more opportunity for structured reflection, perceptions and adaptation strategies may shift, requiring ongoing research to track these developments.

Research positionality: As a frequent AI user who believes in AI's transformative potential, my own pedagogical stance inevitably shaped how I interpreted and engaged with the data. While the study aimed to represent both adaptive and restrictive assessment strategies fairly, there is an inherent interpretive bias that leans toward favoring integration over restriction. This perspective influenced my interpretation, as adaptation strategies that aligned with process-driven and AI-inclusive approaches were analyzed more favorably than purely restrictive measures.

Use of literature beyond context: There is a global lack of research on AI's role in fully online K-12 school assessments, but in South Africa specifically, literature on AI-adaptive assessment strategies in online learning is particularly scarce. As a result, this study drew on research from various educational contexts—including higher education, blended learning, and broader AI-integrated assessment research—to provide a conceptual and theoretical foundation. While these environments share similar challenges, such as concerns over academic integrity, process-focused assessment, and institutional AI policies, their institutional structures and digital capabilities differ. This means that some of the literature used to interpret findings comes from contexts where AI adoption is more advanced, potentially limiting the direct applicability of certain recommendations to South African online schools.

Despite these limitations, this study aims to provide a critical and timely contribution to discussions on AI-adaptive assessment strategies. While it is a small-scale case study, its findings offer valuable insights into how institutional constraints, curriculum mandates, and educator perspectives shape AI-adaptive assessment strategies. The use of literature beyond the South African context, though a potential limitation, strengthens the study's theoretical foundation and highlights gaps in local research, offering a starting point for further studies in this area. Additionally, while subjective experience and bias are inherent to interpretivist and qualitative research, it was mitigated through a structured, rigorous analytical approach that remained grounded in empirical data, literature, and theoretical interpretation. Ultimately, rather than aiming for broad generalizability, this study aims to provide rich, context-specific insights that lay the groundwork for further research on AI-adaptive assessment in varied online education contexts. Future research could build on these insights by exploring how AI-adaptive assessment strategies evolve over time and across varied educational contexts, particularly as AI literacy, policies, and institutional support structures develop. For future research, expanding the scope beyond this case study to a broader institutional and geographical context would provide a deeper understanding of how educators navigate AI's challenges and opportunities in diverse online learning environments.

7.3 Final thoughts and reflections

This study ultimately aimed to provide timely insights into AI's impact on online assessments, offering a qualitative perspective on how educators perceive and respond to the challenges of maintaining authenticity in digital learning environments. By examining educator experiences and adaptation strategies, it adds depth to ongoing discussions on AI's role in education and assessment, moving beyond theoretical concerns to highlight practical, institution-level implications.

A key finding of this study is that traditional, output-based assessments are no longer valid or authentic measures of student understanding. In response, educators are shifting toward process-driven, individualized, and contextualized assessments (Ifelebuegu, 2023; Kadel et al., n.d), but adaptation remains uneven across subjects. While process-based approaches are emerging as an effective strategy for reducing AI-generated responses, they remain underutilized in disciplines that rely heavily on text-based outputs (Kizilcec et al., 2024).

Restrictive strategies, while prevalent in maintaining traditional assessment forms, are not a sustainable solution for ensuring authentic student evaluation (Perkins et al., 2024; Elkhatat et al., 2023). AI-responsive assessment adaptation must move beyond reactive restriction toward structured integration, supported by institutional guidance and pedagogically sound policies.

Restrictive strategies not only fail to provide long-term assessment security but also create a disconnect between how students construct knowledge in deeply digital AI-enhanced settings and how they are required to demonstrate it in assessments (Vargas et al., 2024). Outright AI bans deny students the opportunity to engage with the very tools that are reshaping knowledge creation, failing to prepare them for real-world digital literacy (Perkins et al., 2024; Lang, 2024). Thus, the core challenge posed by AI to assessment integrity is not the use of AI by students but rather the fundamental incompatibility between current assessment designs and the capabilities of AI tools (Xia et al., 2024). Assessments must evolve, not only to maintain their authenticity and uphold fairness but also to ensure that they continue serving their fundamental role in guiding instruction, accreditation, and equitable educational outcomes. If they fail to adapt, they risk becoming ineffective measures of student learning.

Beyond individual adaptation efforts, system-wide policy and guidance are essential. While curriculum reform is the most comprehensive solution, it is an unlikely short-term fix. A more immediate need is for institutional policies that provide structured, research-informed guidance on AI-adaptive assessment strategies. Without clear direction, educators remain uncertain about how to approach AI integration, resulting in inconsistent and often ineffective assessment adaptations (Mills et al., 2023). Additionally, AI specific training must become a central component of professional development in these contexts. Educators require structured training to understand AI's evolving capabilities and limitations, enabling them to design assessments that integrate AI constructively rather than treating it solely as a threat.

Throughout the creation of this study, AI was an indispensable collaborator—enhancing ideation, accelerating access to information, and facilitating conceptual refinement. The ability to independently check conceptual understanding is invaluable. It functioned as both a learning tool and a critical thought partner, pushing deeper engagement with the material. AI fosters critical thinking, but it also introduces a degree of cognitive complacency. The ability to generate responses instantly can discourage deep engagement, yet when used effectively, AI supports iterative learning by encouraging constant evaluation, prompting, and refinement. Engaging with AI throughout this research process revealed more about personal competencies, limitations, and approaches to learning than any prior experience. It highlighted inefficiencies in thinking, helped refine articulation, and reinforced the importance of critical questioning in knowledge creation. At the same time, it is easy to understand the resistance to AI's role in assessment. Those who have spent years mastering traditional knowledge demonstration processes may see this shift as a dilution of intellectual rigor. This shift can feel unsettling, particularly for educators and institutions that rely on established practices of knowledge production and demonstration. However, resistance does not change the reality that AI is now embedded in knowledge creation. Instead of attempting to ban or restrict it, institutions and educators must embrace AI's presence and rethink assessment practices accordingly.

Ultimately, this study concludes that authentic assessment adaptation in AI-influenced education is not about restriction but about redesign. Future assessment models must prioritize process over product, critical engagement over compliance, and structured adaptation over reactive enforcement to ensure that assessments remain meaningful, credible, and aligned with digital learning realities. AI has transformed how learners in digital environments work with knowledge, but it has also reinforced the importance of assessment reform. Banning AI in assessments is not a solution; instead, we must reconsider how we assess knowledge and ensure that students can engage with the tools of their environment in a way that reflects authentic learning. The knowledge landscape has shifted—if we fail to update assessment models, we not only risk invalidating the ways in which knowledge is constructed, demonstrated, and valued, but risk falling behind in a rapidly evolving educational landscape.

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Appendices

Appendices

Appendix A: Ethics certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG | WSoE Wits School of Education

SCHOOL OF EDUCATION ETHICS COMMITTEE

CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER:** 2024ECE025M
PROJECT TITLE	Exploring assessment adaptation strategies in online learning environments for accurate student evaluation in the age of generative AI
INVESTIGATOR	**CAYLA DU TOIT**
SCHOOL/DEPARTMENT OF INVESTIGATOR	WSoE
DATE CONSIDERED	10 June 2024
DECISION OF THE COMMITTEE	Approved unconditionally
RISK LEVEL	No Risk
EXPIRY DATE	Date of submission of the Research Report
ISSUE DATE OF CERTIFICATE	15 July 2024
CHAIRPERSON	Dr. Lawan Abdulhamid

cc: Dr. Nokulunga Ndlovu

DECLARATION OF INVESTIGATOR

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am are authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

Cayladt. **Signature** **Date** 15/07/2024

Appendix B: Survey responses

Survey responses from participating Educators 1, 2, 3 and 4 respectively:

Participant information & consent

Have you read & understood the participation & consent information and agree to take part in the survey?

Copy chart

4 responses



Yes, I understand and agree.

Participant role & experience

1. Please describe your current role within the online school environment. What subjects or courses do you oversee or teach?

4 responses

I am the English Subject Specialist for Grades 4 to 6. I create course content according to the curriculum, teach masterclasses to learners, and set and mark assessments for the term.

Geography Gr 10-12

I am an Afrikaans Subject Specialist. My role is to teach Afrikaans lessons, develop Afrikaans content and set all assessments for Afrikaans.

FET Physical Science and Math Literacy teacher and content developer

2. How many years of experience do you have in online teaching/ education?

4 responses

- 2.5
- 12
- 2 years.
- 11 years (3 years online)

Understanding & exposure to AI in education

3. In what ways do you or your students currently use AI technologies in your educational activities, if at all?

4 responses

- I use Grammarly to assist with sentence construction, punctuation etc. in my own work. Students are not allowed to use this when working on an assessment. Other than that my learners do not (or are not allowed to) use AI technologies to assist with their work tasks.
- teacher - planning lessons, first step in research
students - first steps when researching, studying, asking AI to explain difficult concept in simple terms.
- Learners make use of AI for their assessments in Afrikaans. Learners struggle with writing and speaking the language, therefore, they make use of AI to write their tasks and Google Translate to translate their tasks from English to Afrikaans. Teachers make use of AI to detect whether learners have made us of AI for their tasks.
- The subjects I teach do noy require much use of AI as I try to provide as much authentic material for them to use to limit them from relying on AI responses. In some cases such as practical write ups where the opportunity to use AI generated answers is greater, learners are encourages to summarise and rephrase or structure information using referencing techniques.

Perceptions of assessment validity

4. How do you perceive the validity and authenticity of online assessments in the era of AI tools? Do you believe traditional methods still hold up, or are changes needed?

4 responses

Changes are needed, and have been made. However, we are continuously learning what assessments need to change or be adapted to suit the online environment. One big change is that most assessments are submitted as typed documents, which is of course a replacement of the traditional writing by hand. This actually makes it easier to use AI/plagiarise, however, at present, I feel the assessments are valid and authentic. We have processes in place to detect whether AI was used to generate/assist student work.

I think all types of assessments probably needs an update, with the focus shifting to assessing the process rather than the content. Therefore there is a need to move away from tasks that just require students to re-present the ideas of others and rather focusing on reflecting on what Ive learned through the process of exploring other thinkers ideas.

I do believe that online assessments are valid and authentic to a certain extent when making use of the correct assessment platform online.

It depends on the subject. With regards to Math and Science it is easier to maintain validity and authentication of online assessments as the outcome is largely based on learner understanding and method rather than the answer.

5. What specific features or characteristics do you believe make an assessment format resistant to manipulation by generative AI tools?

4 responses

Topics for creative writing must be chosen carefully to decrease the chances of using generative AI tools. Further, students submit using Google Docs, which has a built-in AI/plagiarism checker. Additionally, upon suspecting plagiarism/use of AI teachers can check a document's version history. This shows us how long a child spent on the assessment and shows minute-by-minute changes, so when a learner copies and pastes a big chunk of text from elsewhere, we can track this change and do further investigations.

See answer above. Questions should be asked in such a way that it exposes the learners way of thinking, in this way AI generated answer are spotted more easily.

The ability to allow learners not to copy and paste on their assessments or to have multiple tabs open when completing an assessment.

When designing an assessment the questions should be structured in a way such that the learner would need to understand the method to answer. Also there are apps which can pick up on AI generated answers and are flagged for the teacher.

6. What challenges have you faced in ensuring the integrity of assessments in online environments where students have access to AI tools?

4 responses

Sometimes, even after following the process (checking version history, Google plagiarism checker, and as a final resort running the text through Winston AI), it is still impossible to prove that a learner used generative AI for their work. A couple of times, I have had to "let it go" and mark the task without pursuing my suspicion with the learner or parents. As a teacher who wants learners to learn from their work and grow in the best possible way, this is very difficult to do. Letting them get away with it (if they did use AI dishonestly) feels dissatisfying for me as an educator, and worrying for the learner's future.

Lazy students are always going to try short cuts, teaching them the importance of learning rather than just getting good grades can overcome some of the challenges that AI presents.

Learners copy and paste from AI tools and the challenge would be trying to identify and prove whether the work submitted is truly the work of the learner.

It is very easy to spot when learners have used AI in practical write ups or projects as the words used would not normally be used by the learners.

Strategies & adaptations

7. What strategies or modifications have you implemented or considered to adapt assessment practices in response to the use of AI by students?

4 responses

For comprehension and language assessments, learners write it on a platform called Exam.net. You can changed settings on this platform to kick a student out of an assessment if another tab is opened to the student goes off the page during the writing time. They need a code to be allowed back in again and the teacher can provide this at their discretion. While writing on this platform, students are also in a Google meeting, a live session monitored by the teacher. In other words, they are writing 'live' and being monitored via video and restricted via the exam.net platform. We will be doing this for the creative writing task during exams this year too.

See answer 5+6 (Also using AI detection software if in doubt)

We have made use of assessment platforms which restricts learners from opening other tabs or clicking on other screens that make use of AI tools. This means that the learner is only able to have the assessment tab open.

I try to design my assessments in a unique way that focuses on learner knowledge and the individual task at hand and is task specific which makes it more difficult to have AI generated response. Example if doing a practical the results can differ from what would be expected and learners will be assessment on their own results and explanations for the results instead of expected responses.

8. Can you share examples of successful or unsuccessful attempts to integrate new assessment methods aimed at countering AI influence?

4 responses

The above is an example of a successful attempt to integrate new assessments aimed at countering AI influence. In a previous online teaching post I was in, there were many unsuccessful attempts. The plagiarism process and checks in place were not as robust as they are in my current role. External markers marked many assessments and had a much lower vested interest in a learner's true academic journey. Many instances of plagiarism went unchecked because external markers were not paid when giving a 0 and flagging a task for plagiarism. In some cases, the use of generative AI in tasks was only flagged by the actual subject teacher when she/he was moderating, which was a very small percentage of the cohort.

not at this moment

Assessing on a Google Document: allows learners the opportunity to make use of AI tools for their assessments.

Successful: Designing tasks where results are based on individual findings and is not generic. For example, in Math Literacy I would do a measurement task where in a live lesson learners would measure the dimensions of their work table and calculate the cost of making a table cloth. The answers are unique to each student and AI cannot assist.

Unsuccessful: Giving a written task as part of a project. Learners are lead to use AI and it does become

9. What kind of support or resources do you think are necessary to implement these improvements effectively in the educational system?

4 responses

Teachers need careful training by an expert, whether that expert is someone employed at the online school or an outsider. A paid-for generative AI detector is necessary. A robust process followed by all teachers is needed, with the flexibility for this process to change/adapt as and when needed. Learners need to be trained too, and given reminders as they progress. Schools need to invest in outside help, by attending talks, reading the latest research, and participating in offered training.

Access to effective AI detection software and a system wide rejection of tasks that allows AI produced answered to be celebrated.

An AI tool that is specifically used to detect the use of AI in Afrikaans.

There are a lot of resources available, I think it is useful to have apps that can quickly and efficiently identify when majority of a task is AI generated or sourced. These apps save the educator a lot of time and allows for authentication of assessments.

Reflections on future directions

10. How do you envision the future of assessment in online education given the rapid development of AI technologies?

4 responses

As alluded to previously, online schools/teachers need to be highly adaptable and continuously learning with the growth and development of AI technologies in order to keep the authenticity and validity of assessments intact. I believe the future of assessment in online education will become more tricky, but not impossible.

Less Exams and more process focused assessments with real world outcomes, ie students creating something useful to show their understanding rather than getting a high score in a timed test.

That we integrate the use of AI tools in our assessments in a positive way. This can help ensure that we teach learners the correct way to use AI rather than copy and pasting from AI.

I think educators have their work cut out them, however just as quickly as AI technologies are being improved there are also measures being adapted to counteract the negative use of AI in assessments. It is about balance. AI technologies are not all bad but use of these technologies needs to be monitored in the educational sector.

11. What roles should educators, administrators, and policymakers play to ensure the fairness and authenticity of assessments as AI becomes more pervasive in education?

4 responses

Robust policies should be in place with strict protocols in place to ensure learners face the consequences when they use AI dishonestly. The first time it is detected for a particular learner, there should be a serious consequence in place, so that the tone is set for their future and discourages them from doing it again. Further, educators, administrators, and policymakers should continue to read latest research, attend talks/conferences/training. They should also invest in experimenting with generative AI tools in order to better understand and familiarize themselves the output of these tools.

Embrace AI's usefulness in doing research that can be used to create some unique.

Having critical discussion around AI and finding the best solutions and methods to detect AI and prevent the use of AI especially for formal assessments.

Educators need to know their students, if you understand how your students responds, speaks and answers questions then you will be able to identify when your student has used AI in their work.

Administrators and policymakers need to constantly be up to date with new AI technologies and available apps to counteract negative use of AI.

Appendix C: Interview transcripts

Educator 2

[Speaker 2]
My phone. I am recording this interview, but purely for data collection purposes. I just need to transcribe it to go in my report.

Your participant identities will be anonymized using pseudonyms. So I'm not going to use any personal identifying details. I'm not going to name you.

I'm not going to name the institution. All of those details will be excluded from what I publish. The data collected to this recording, I'm going to keep on my laptop behind a password for a maximum of one year.

As soon as I've submitted, all of it will be deleted. Okay. Do you have any questions for me before we begin about my research objectives, the interview?

[Speaker 1]
I think I'm good. I think I did read your thesis and it was very interesting.

[Speaker 2]
Oh, I'm so glad. You're probably the only one ever. So thank you for that.

[Speaker 1]
I think it's a new, it's a new aspect.

[Speaker 2]
It is a new, it is, it is a new aspect. And I think it's quite prevalent. I also teach online.

So based on personal experience as well is where it kind of derives from. Okay.

So to begin, the first question I have for you is, could you talk more about your personal views on AI and education? Has your opinion changed over time and what specific experiences or events have shaped how you feel about AI's role in learning and assessments? So here I'm asking, how did you feel about AI in the beginning compared to now and what events have kind of changed your perception or shaped how you feel?

[Speaker 1]
And I think AI as a whole, it's a very broad topic. There's different dimensions to it and different areas where it could be helpful. And where it can be a bit tricky, like, especially like I do maths and science.

So in my subjects, it's not that tricky because like you can't, like everything is different. Every question is different. So maybe in a practical aspect, science will be a bit, like if you're doing a practical report, they can use AI to try and motivate the answers and stuff.

But in terms of AI as an information source, I think that's very, very nice. It's accessible to kids. And I think in the online space, especially you have to be open to it to some point because it does affect the way you teach.

It does affect the way you show your or share your information. So yeah, I feel like initially I was a bit sceptical. I was a bit wary about it because you hear all these negative things about AI.

But once I got more into it and I realised that there's a lot of benefits to using AI as well in education.

[Speaker 2]
Okay. Have you noticed, question two is, **have you noticed any trends or changes in how students use AI in terms of assessments over time? So are they using it as a tool?**

How did they use it in the beginning compared to now? Are all learners using it? Are only some of them using it?

Stuff like that.

[Speaker 1]
Yeah, I think initially, again, students are students, like they always want to try to get the easy way out. So I think initially, especially I think, like I said, I do science mainly. So they try to use it as a source of getting answers and to help them to just tick off assessments as completed.

But then they realise that it depends obviously on the subject that you're teaching where AI can be more detrimental to the learning aspects and to how successfully learners can do assessments. But in subjects like what I'm doing, I think they've learned over time to use it as a tool.

[Speaker 2]
Okay, rather than an escape.

[Speaker 1]
Yeah, try to help them out there or structure the answers instead of just copy and paste, so to say.

[Speaker 2]
Okay. Okay. So they've become almost, I can't say more competent, but they've learned to use it more as a tool, sorry, I'm stuttering, more as a tool than as an escape out.

They've seen the benefits over time.

[Speaker 1]
They've seen the benefits over it, yeah.

[Speaker 2]
Okay. Number three is **how do you personally gauge whether an assessment is still valid or authentic, especially when AI might be involved?** So here I'm looking for your decision making process or your reasoning behind when you look at an assessment, how do you personally look at this and go, okay, this will work in terms of AI susceptibility or no, this is not going to work?

[Speaker 1]
I think when I'm doing an assessment or setting up a task for the kids, I always look at ways where they have to have a personal experience and their assessment is structured in a way that each student's answers can be different. Obviously in a test situation, that's a bit different because everyone's writing the same test, but like if I'm doing a practical with them, then it's based on their results and no one can have identical results because there's so many external factors. So the way I design it is that each result would have its own personal experience in the explanations or maybe the home environments are different.

So it will have certain aspects of their environment that will affect the outcome of the results. So I try to give them a task where it's not going to be, they're not going to be able to go onto the internet and just like Google search it and come up with the generic response or results. So it has to be based on their own stuff.

And then I also film it. I also make like when kids are doing my practical stuff, I make them film themselves. So then I can see that they're actually doing it and they haven't just like copied someone else's work or you like researched it online.

[Speaker 2]
Okay. Are you concerned anyway? I mean, I understand how you've adapted it.

Are you concerned? I mean, AI is perfectly capable of doing all those calculations. If they do the results and give them to AI, is that something that concerns you or you're quite comfortable in how you've adapted it?

[Speaker 1]
I think like, um, you know, okay, again, I'm going to go, I hope it's fine that I specify my subjects that I've experienced.

[Speaker 2]
It's going in the report. I also teach math and science. You're my only math and science teacher.

[Speaker 1]
Okay. So yeah, so I feel like kids battle more with how to adapt the calculation and how to look at the method than actually getting a proper answer. So sometimes like even on the internet, there are many different ways of doing it, uh, like the certain calculation and stuff.

So I think it does make it a bit more difficult, but there's always that chance with AI. There's always a chance that children can, can get behind the, the, you know, no matter what you try to put in there, the method, the measures they pass, they can get behind it. So yes, there's, there will always be that, um, nagging, nagging feeling and just behind, I think every teacher, uh, that a child could possibly drop the system and go beyond, you know, bypass certain, uh, things that you put in place and still be able to use AI to get your answers.

[Speaker 2]
Okay. **No, well that answers question four as well for me, unless there's anything you want to add in your view, how do the assessment methods you currently use? So your**

adapted strategies stand up to the challenges posed by AI, but I think you've answered that one.

Okay. Number five is, **can you walk me through how your assessment strategies have evolved over time in response to AI? So what factors or events specifically have led you or examples have led you to adopt certain strategies over others?**

So here it's, how did this start? When did you notice the issue? How did you originally start to adapt?

Did that work and what events, um, or scenarios kind of influenced these changes over time?

[Speaker 1]
Yeah, I think when you're online, um, especially, even if you're just a normal teacher, I think what's happened is with the use of AI, it's also given a lot of information for teachers. So it's so much easier for teachers to go online. Like before you have to do everything yourself.

Now you can just go and type in what you're looking for and you get it, you get like assessments, you get tasks with the memos as well. So I think initially this was a very win-win situation for me where I said, Oh, it's a, it's a lot of, um, it's so easy to get, it's easily accessible for me as a teacher to get this information, to give it to my kids as a task. And I also got the memo already made.

I just go over the memo to make sure it's, you know, all in the right aspects and stuff. And then also it's like cut down my time factor by like, so amazingly because assessments take quite a while to set, but then I have to also realize that, you know, I just as easily as I found it, the kids can find it as easily. Um, so that's when I started adapting my tasks to, to let them do their own stuff.

And it's very different. Like, um, I was like, would I be a bit more, um, free to do your own tasks and stuff that that's one of the things about that. So I didn't choose things that they were using in like a normal department school.

I was using different tasks and I've, I've actually, uh, did my practicals in a way that, um, it's different. Like you won't just be able to go on the internet and research it. They may be able to research the theory behind it, but the actual results they can't copy and paste because each child is unique.

So like, for example, a reaction rate example, a practical, I asked them to get calcivita tablets and then time it, like time it with the whole tablet, time it with the concentration, you know? So I made them do specific things for their tasks in order for them to, to make it a bit unique.

[Speaker 2]
Okay. It also sounds like you are kind of trying to peak student engagement when you're trying to make it so contextual that you can very easily identify then if they haven't related it to, to their own lives. Okay.

Um, question six, **are there any other strategies you've considered, but not implemented and what has prevented their adoption?** So is there any things you've considered? Maybe you don't have the time, the resources, and I hear, I just want you to think about your curriculum as well.

I mean, is there anything, cause I know you follow CAPS and IEB. Is there any specific things that the curriculum will just not allow you to do in terms of adapting assessment?

[Speaker 1]
I think it's always a time factor. Um, and like, besides the time factor in terms of how much of curriculum we have to teach in a given time, there's also your timetable at any learning institute, um, where you, you only see the kids maybe twice a week. And then it's, it's always a battle.

Like you want, like, especially in a thing like science, you want to get them involved practically because it helps to enhance their learning for the theory part of it. But can you afford to, to miss a whole lesson where you need to teach them that calculations or how the theory parts of the graph, or can you afford to miss that lesson in order to take a whole lesson to do a practical with them? So I think that is one of the things, it's just a time factor thing of a curriculum.

I think there's so much more we can do, um, in terms, especially in the online space, but it's just a time factor that hinders, um, all this different strategies to be used.

[Speaker 2]
Okay. If you had all that time, can you give me an example or two of what you would like in terms of assessment, what you would like to implement? You said practicals, which absolutely, is there any other kind of assessment strategy you would love if you had all the time in the world?

[Speaker 1]
I think even like quizzes or a spot test within the lesson, like they just come into the lesson and after I've done the masterclasses and done the content of it, they must be able to learn in the lesson. So they should be able to give me the answers for that spot test in the, during the time.

[Speaker 2]
I get you. That's also the nature of online learning though. There's a lot of self-study as well.

Yeah. Okay. Let me move on.

You mentioned the use of AI detection. You only mentioned it once or twice. In your experience, do you believe AI detection is an effective way to ensure authenticity?

Why or why not?

[Speaker 1]
Yeah, I think it's very important to have AI detection because I, like I know there's some programs that I will mention, and again, for my subject, it's not that readily used in the sense that because it's not so much of AI used, I'm thinking more of like theory subjects. I

think it's an excellent way because they have a thing where you scan and you copy and paste a child's work and then you can detect whether it's human motivated or AI generated. So I think that's like very, very important in learning as a whole.

In my personal experience, I haven't had much of AI detection. I mean, you would get children that might try to copy each other's answers, but not necessarily AI detection. But yes, that's just human copying.

Yeah. AI detection, I haven't really, like I said, in my subjects, I haven't really come across a lot of generic answers that I would suspect that.

[Speaker 2]
I get you. It's copy pasted from AI.

[Speaker 1]
Yeah.

[Speaker 2]
Okay. Your focus seems to be on adapting. There are two groups of educators that are coming through, and I do think it actually might be subject specific, as you say.

Your focus seems to be on adapting the assessment themselves. There's been like this contextual change. AI has come in.

That is a contextual change**. So you are adapting the assessments themselves to reflect this change and be more authentic. What factors influenced your decision, or why have you chosen to focus on adapting the assessments themselves rather than using tools like AI detection?**

[Speaker 1]
Well, I think this is a bit of a tricky one. It's not that I'm not like for AI detection tools. It's just that I felt like maybe it's a bit of my old teaching ways coming, kicking in where you have to do things like you know yourself.

I just enjoy coming up with ideas. I feel like it helps me as a teacher grow, where I'm thinking of new ways to get the kids engaged and get them to think about science as something exciting, because I like to develop the critical thinking. I think in a way of me trying to authenticate the assessments and try to make it unique.

It's helping me to also think critically. So I just feel like I like to do it myself because it helps me to develop.

[Speaker 2]
I get you. It's this kind of balance. Okay.

Okay. Question nine. You're focused.

You often, **because you've spoken about individualized tasks and you also speak about process focused tasks, because you're focusing more on the process, the tasks that focus on the method learners use to get to the answer rather than the answer itself. Why do**

you believe this makes the assessments more authentic or a better gauge of understanding in terms of AI use?

[Speaker 1]
I think again, it comes to critical thinking, because I mean, like in maths or science is always like, you know, there is an answer to something. But what's more important is how you got to the answer. So by them showing the method in it, it shows that they've understood the concepts they understand, especially in science stuff.

It's not so straightforward where you just take your information and put it into an equation. There's some questions where you have to go a step further and extract the information. You may have to do a little calculation before you use it into the actual main calculations.

I think it's also linking to the critical thinking skills of learners. There's so much information out there. They can go and Google search and, you know, put in like those type of calculations into it and they will show them answers.

And like certain places where I've typed in, like I can type a whole question and comes up with the whole answer. And I think also ChatGPT does that quite nicely as well in certain cases. And I've found out recently that they've also improved their technology even more to give more of an explanation for their answers.

So I just feel like, yeah, I think maybe I am a bit old fashioned again in the sense that I like to develop the learners' critical thinking skills. And I think methods and how they get to the answer helps the child to understand the concepts a bit better.

[Speaker 2]
You've mentioned critical thinking. Also, when you focus on process, I mean, I want to call it reflective. One of the themes I see coming through is almost using reflection as a way to make it less susceptible.

Would you call it slightly reflective? I mean, if you had to describe your approach.

[Speaker 1]
I think so, because I mean, they would have to have gone back to what they learned previously and then grasp the information from there to see how they can adapt it to the question. So, yes, I would say it's kind of bordering on reflective thinking and reflective learning.

[Speaker 2]
It also, I mean, this whole approach, it's a reflective approach and a process focused approach dictates that you need to know your learners. And I know in an online setting, it's quite a small, you have small classes. I mean, do you think there are, if we had bigger class sizes, would this approach work?

[Speaker 1]
I think there's definitely the risk of the more learners you have, you have to adapt your teaching ways to the type of learners you're getting, because then you're actually widening the uniqueness of the learning abilities within the classroom. So, even in a small classroom,

remember, in a small classroom, there could be one that gets it and one that doesn't. There's just two learners there.

So, I think in every class situation, irrespective, while it does increase the risk of this, but in any class, like even now in my classes, I see there's some that are getting, the first time there's some, I have to adapt my ways to another way to get it through to them. So, yeah, I think there's always that risk that maybe this reflective way or the strategies I'm using may not be the best for every learner, but I think that's part of being a teacher. You just have to then look at that learner and just adapt to it in a way that they can understand what you're doing.

[Speaker 2]
Yes, okay. **Then my last question is, are there other groups of educators relying more heavily on technological tools and restrictive platforms to monitor student work and restrict access to AI rather than adapting the assessment? What do you think are the potential benefits or limitations of an approach like this in comparison to what you have done?**

[Speaker 1]
So, you mean like using certain platforms like to...

[Speaker 2]
Like exam, one of the examples I got was exam.net, they can't open other tabs. Another example I got was Google Docs version history or running it through AI detection software or a combination of all of those.

[Speaker 1]
I like exam.net. So, yeah, I think it's a very nice way of doing it. We do our tests and stuff through that because the kids are locked out.

But then again, there's always that risk. You can't prevent everything from happening. There's always...

A child sometimes can always find a way to go around it. But I think that's one of the platforms we use that has been really successful. And it does...

The kids are in a fixed point where they're restricted with time and they're stressed out because they need to focus on the exam. They have no opportunity. Like we watch them in a live meeting.

That's how we invigilate for them. And like you can see, they focus on their screen at all times because they have a very short time limit to complete the task. And once they submit, then they're out of it.

They also don't get a chance to like have the paper with them. So, everything is done within the session and it's done. They just submit and we have this with them.

The Google portal as well, I think it's quite nice. I do use that as well. But it's a bit more difficult with like tasks that they take home and like for a practical task, for example, because in that way, like firstly, we do some science kits.

So, like when they do certain practicals for me, I have to make sure that everything is safe, like there's nothing there that they could hurt themselves with those kids. But I have to also make sure that I'm taking responsibility to monitor them and then I do that in a live session. I can't have that like them doing on a different app on an online space.

So, it's done in a live session and then they submit their report in exam.net.

[Speaker 2]
Mai, I just want to move, just highlight this limitations. Are you at all concerned? I mean, because AI detection software is not pro.

I mean, is there any sort of institutional policy or how do you feel about, I mean, now let's say a learner is suspected in Winston AI says they've used AI, right? And that may not be the case. Do you see that as a limitation?

Is there any kind of thought process behind that?

[Speaker 1]
I think that with everything AI, the human factor is missing. There's such a skills that humans have that an AI program may not have. And I think that's where this comes in.

Like if there are children that speak on a higher level, there are children that can hit every single word and explain themselves perfectly. In that case, I think it comes down to you knowing your students. In the sense that like if it's a child that's poor in literacy and then that comes up with this fantastic essay using words that they don't normally speak.

And I think that's where your human part comes in where you can say, no, something is a bit off and I'm leaning to go with the Winston AI detection system. But then again, like I think also there's a part that I mean lots of chances of it matching like word for word that was something on the internet. And then there's also things like a definition which will match word for word on the internet.

So I think there's a lot of things that you as a human need to just be more aware of and then you make the final call.

[Speaker 2]
Okay, so definitely a large amount of educator to educator judgment.

[Speaker 1]
Yeah.

[Speaker 2]
Okay. Okay, well, that is the last question I have for you. I don't have any more.

Do you have any questions for me?

[Speaker 1]
I just think that this is a very like interesting topic. Like I said, I'm still learning about it. Maybe in a couple years time if you re-interview me.

Perspective of AI but for now, I think I'm still like old school. I like to do things myself. I think that it can be used like I use simulations and stuff to also show the kids things.

I also like that part of it. But I think there's a lot of things that has to be done like on a one-on-one basis with the kids. So yeah.

End.

Educator 3

[Speaker 2]
Okay, so my name is Cayla, I don't want to take much of your time, so I'll just dive right in, just give me a moment.

[Speaker 1]
Okay, I'm just going to share my screen.

[Speaker 2]
Okay, so good morning. You have quite a lot of background noise.

[Speaker 1]
I do, I'm sorry.

[Speaker 2]
No problem.

[Speaker 1]
I'm at a coffee shop.

[Speaker 2]
Okay, it's okay, we'll just move through it. It is lovely to meet you.

My name is Cayla. Just a couple of ethical considerations before we start. I am recording this interview.

It is recorded purely for data collection. I need to transcribe it. Your identity will be completely anonymized.

You are Educator 3. The data collected is confidential, and I will store it for a maximum of one year. I mean, it's on my laptop, and then it will be deleted as soon as I've submitted.

And all personal identifying details will be excluded. I mean, your institution won't be named. You won't be named.

It is purely anonymous. It is just for my report. And before we begin, do you have any questions for me?

No. Okay. Sorry, let me just move that to my second screen.

Okay, so the first question I have is, could you talk more about your personal views on AI and education? How has your opinion changed over time, and what specific experiences or events have shaped how you feel about this? So here I'm asking, basically, how did you feel about AI in the beginning compared to now?

And were there any specific events or experiences that then changed your perception or shaped how you feel, let's say, in the last two, three years?

[Speaker 1]

So initially, I would say it was this big unknown and something to be concerned about. But because I didn't know much about it, I didn't really understand the full possibilities that it had for good and for bad, in education specifically. And then over time, that changed to seeing how it could negatively impact children's creativity and critical thinking because of just being able to rely on AI to get an answer or a task done.

And I would say that the specific experiences that have shaped that has been market work and seeing very clearly this is a completely different ability level compared to other work the child has submitted. And seeing previous work, knowing that they are capable of working hard to produce what they need to, maybe it's not an A score, but they are capable of being stretched and stimulated, and yet rely on AI. It's very sad because I wonder what's behind that, the pressure of receiving certain marks.

Is that pressure on the family? Is that on themselves? So that could be part of it, or it also could be just whatever's available will be used.

And so it encourages laziness in a way. I think it's not as easy as just saying every child uses AI is lazy. I think it's very multilayered, and so it can be worrying in that sense.

I think there are good things, positive potential, where you can use it in a good way to teach children to be curious and to investigate, to question, and not to take things at face value. But you've got to work at using it in that way.

[Speaker 2]
Absolutely. Okay, thank you very much. **And then moving on to question two is, have you noticed any trends or changes in how students use AI in terms of assessments?**

So do they ever use it as a tool? How did they use it in the beginning compared to now? And is there any, let's say, difference between how students are using it?

[Speaker 1]
I think students have become sharper in being able to or trying to use it in an undetectable way. Okay, yeah, yes. Yeah.

So maybe at the beginning it was very simple because there weren't many tools available. But now you can tell a GPT with a letter, for example, that it has produced, that it's too long, decrease the word count to this much. You can then respond and say, decrease the reading level to a grade seven reading.

[Speaker 2]
So you would say their competency has definitely increased over time?

[Speaker 1]
Yeah.

[Speaker 2]
Okay. Yeah, definitely. Okay.

Let me just move on to a new slide. **Okay. How do you personally gauge whether an assessment is still valid or authentic, especially when AI use might be involved?**

So here I just want to walk through your decision-making process and reasoning behind deciding when you design an assessment or look at an assessment, summative or formative, how do you personally decide, okay, this is going to work or this is not going to work in terms of AI use and keeping it authentic?

[Speaker 1]
So I think that's quite tricky because we've designed assessments before where we feel it's very hard to use AI to get an answer, and then we find that they are still able to use it. And so some of it comes from experiencing those issues in the past and then changing the assessment for future as a result. Or discussing amongst colleagues what is too easy to use AI with and what is more difficult to use it with.

So it definitely requires trial and error perhaps. Trial and error and openness in discussion. It can't only be up to one person.

[Speaker 2]
Okay, now I get you, with you. **Okay. In your view, how do assessment methods you currently use, so these are your adaptive strategies or otherwise, stand up to the challenges posed by generative AI?**

So here I think, do you think how you have adapted your assessment works and will it continue to work? And why is that?

[Speaker 1]
Yes, I think it stands up fairly well because the teachers or I decide and set the assessments and I also mark the majority of them. And then I also see those same children in lessons. And for that reason, I think it works well because I have a better sense of what they are capable of.

And so when I do mark something that seems suspicious, it is easier to pick up because I'm a lot more involved. In a previous position, it was different.

[Speaker 2]
I remember that, you did mention that. I then have to ask you if you, because now what you're saying is quite resource intensive, but it works because you are personally involved with the learners, yes? If you then suspect AI use, what do you do?

Is it a straight zero? Are you using your judgment?

[Speaker 1]
So no, it's not a straight zero. We do do a lot of investigation because sometimes there are learners who you initially suspect of using AI and they haven't. So we do have to do a lot.

So firstly, you look at the original history of the document. If a whole chunk appears in a minute, that's part of the evidence. Then we also look at how long they've spent on it.

What's the time investment? So for example, I suspected AI in one learner and she'd only spent 15 minutes on the document. But I spoke to her mum, and her mum explained that

she uses Word, and does her work all on there to have a personal level of hope and then puts everything across.

Looking at all her other work, it's not possible to use AI. You can see that her standard was very high and her vocab was very good. So then I could put that onto it.

So there's some history, then we can run it through a Winston AI app. But that's not set proof.

[Speaker 2]
No, no.

[Speaker 1]
We can't take that. We can't take that as the only evidence. Another thing we can do is actually run a prompt through ChatGPT and see what comes through.

What's happened recently, actually, we did that at a chunk of text came out very, very similar to what a learner submitted. So unfortunately, it's very time consuming to go through that process.

[Speaker 2]
No, again, resource intensive, I guess.

[Speaker 1]
Yeah. But depending on the learner's age and how many infringements, they have a chance to redo it. That's the first infringement.

Second time, they get zero straight away. And third time, it's a disability hearing. So it's quite a strict process, but I think that's best.

Okay, thank you. You want to nip it in the bud now rather than proceed to high grades, university level, where consequences are huge.

[Speaker 2]
Okay, so then just a last quick question here on this view. If it is, I mean, what you're trying to do here is limit the use of AI as much as possible. If it is caught that the student did use AI, what is the process then?

I mean, how do you decide what marks to give and what marks not to give?

[Speaker 1]
Well, if we know for certain that they did do it, we follow that procedure. They must redo it. Yes.

If they do it again, then it's zero straight away.

[Speaker 2]
Okay.

[Speaker 1]

Yeah, so it's not half marks because, you know, you can mark some of it. It's just zero.

[Speaker 2]
Okay, it's just a zero.

[Speaker 1]
Yeah. Okay.

[Speaker 2]
Question five is then, can you walk me through how your assessment strategies have evolved over time in response to AI? What factors or events have led you to adopt certain strategies over others? But you have kind of answered this one for me, so I think I'm going to move on unless you have anything to add.

No, I don't think so. Are there other strategies you've considered but not implemented? What has prevented their adoption?

So here I'm asking, are there things you have thought about but maybe don't have the time, the resources, the institutional qualities to be able to enact?

[Speaker 1]
So something I like the idea of is for creative writing, they do it in a live session. So they already do that for their comprehension and language, for example, or a maths test, whatever it is. They have a Google Meet open and they have an application called exam.meet open. And it's very hard to, you can't open any other tabs during that time. It will kick you out of the exam and your video is on the whole time. So I really like that.

I think it's a true reflection of a child's capabilities. So I would really love to see that being done for creative writing as well because at the moment creative writing is done as a separate assignment in your own time and you submit it. But that is actually where a lot of the AI can be used.

So we haven't done that and I think it's purely the timetabling issues.

[Speaker 2]
Yeah, resources.

[Speaker 1]
Yeah, yeah.

[Speaker 2]
Okay.

[Speaker 1]
Definitely.

[Speaker 2]
Let me just move to my next slide. **Okay, now these are your specific answers. You also mentioned that creative writing must be chosen carefully to decrease the chances of using generative AI tools.**

Can you explain this further? How are you deciding that some topics are less susceptible than others?

[Speaker 1]
Yeah, so, you know, if you do a Google search for descriptive essay topics, for example, there's a good chance that you shouldn't use the most common ones that come up.

[Speaker 2]
Yes.

[Speaker 1]
Or you shouldn't and come up with your own that you haven't read. Maybe you were inspired by something that you read, but it needs to be something that you haven't taken verbatim or some sites that you had a great idea. But, again, that's not foolproof.

You know, I could come up with a completely original topic, but you can still feed it into the chat GPT or whatever tool and get an answer. It's making it very specific, though, as specific as you can without compromising the style of the assessment.

[Speaker 2]
Okay, and stuff like, because what you're kind of describing there is you're making it very individualized, you're making it very contextual, and you're making it very, you're trying to elicit student engagement. Would you say that's correct? Yes.

Okay, so you're trying to almost pique interest in a way that they can relate directly to their lives, and that is how you're gauging authenticity.

[Speaker 1]
Yes, make it interesting and fun for them, so their assessment is not just about marks. Yeah.

[Speaker 2]
Okay. Yeah. Let me move to my next one.

Okay, so your main adaptation strategy seems to be on the use of technological tools to restrict access to AI use, or that is how you're mainly kind of trying to adapt assessment outside of choosing creative topics carefully. But you also mentioned these tools failing you, and you have before now in this interview. Can you explain further your experience with these tools?

Are there any other challenges you haven't mentioned that you've encountered in using these tools?

[Speaker 1]
Yes, so one learner that I suspected of using something that created her whole text ran it through Winston and said it was 100% AI, but actually what had happened is the learner used gravity to help with sentence construction, et cetera, and so she had come up with a story and the characters and the plots. You know, it was all her idea, but she had used a tool to help her with grammar, which is not allowed, but is a much better or easier conversation to have with the learner.

[Speaker 2]
Yes, copy-pasting.

[Speaker 1]
Gravity versus, yes, copy-pasting. And then, you know, these tools are constantly evolving, and I think that's one of the challenges that these, you know, the Winston failing us or any other things that we use not being foolproof because the generative AI that we use or that children use is constantly adapting and learning, and so it's quite hard to keep up.

[Speaker 2]
Okay, now that moves too easily to my question nine. Do you believe using these tools to ensure authenticity will continue to be effective over time as AI tools evolve?

[Speaker 1]
Yes, so I think we know the short answer. We will have to continuously be upskilling and developing and being in the world of AI so that we understand it and that we can use it well and that we can detect it well.

[Speaker 2]
I get you. I get you. Okay.

Thank you very much. Let me move to my next slide. **Could you explain what factors led you or why you have chosen to focus more on technological solutions rather than adapting the assessments themselves?**

So here you also mentioned something I want you to think about when you answer this. Is it maybe subject-specific? I mean, why have you focused on the tools rather than adapting the assessment when you said choosing creative writing carefully?

[Speaker 1]
Yeah, so this is, I think, subject-specific, and our limitation is curriculum.

[Speaker 2]
Okay.

[Speaker 1]
We are dictated or, what's the word, we have to do assessments every term for their box, and, you know, the school I work for is a lot more flexible and does things, I feel, in a way that can really help learners get the most out of the CAPS curriculum, but we are still limited to the assessments that we must do. Okay.

[Speaker 2]
That's interesting. So because you are following that strict of a curriculum or a curriculum that, let's say, is maybe slightly behind, you are then limited in exactly how you can be adapting assessment and what you have decided on is then the technological tool.

[Speaker 1]
Yeah.

[Speaker 2]
Okay. Yeah. **Okay, question 11, which is our last question, is others are focusing on trying to adapt the assessments themselves so that it's less susceptible to AI use and more a measure of student learning.**

What do you think are the potential benefits or limitations of an approach like this in comparison to what you have done? The CAPS curriculum point is a very interesting one. I'm going to note that.

[Speaker 1]
Yeah, so I think it's excellent if you can adapt the assessment itself. I think that's first and foremost. If you're still able to assess the skills required and you've adapted it in a way that it's less susceptible, that would be the best.

So I do think that would be the most beneficial because if somebody can just get an answer generated by AI, then what are they learning at school when they're being assessed in a way that would be fairly easy to just get an answer? So the benefits of doing it this way is that you're really testing and stretching and developing a student's skills in their current context and in the world that they currently live in. Yeah, so that is very important.

I think maybe some limitations are that you could miss something out because you're afraid that AI could reuse them, so you leave it out, for example. And there are just some things that you do need to assess that can't be adapted. They must be there, which is why I think doing the video call, doing creative lab, routing lab, would be a happy medium between these two approaches.

[Speaker 2]
Have you considered the collective approaches? Because one of the themes I've been seeing coming out is people seriously, in terms of, what can I say, adapting the assessment itself is making it very reflective. So you're assessing almost how the learner feels and not what they know.

And again, this is a CAPS issue.

[Speaker 1]
Yeah, as you're saying, it sounds wonderful, but yes, it is a CAHPS issue. But having said that, you could use that approach if we took it out of the data round or something, which creates a more personal, topical approach, which you could still run through AI, but making it more reflexive, which I think would help. Yeah, it's a good idea.

[Speaker 2]
Okay, well, that is pretty much the last question I have for you. Do you have any questions for me? Otherwise, I will let you go.

[Speaker 1]
I'm just curious about you. You're doing a Master's, right?

[Speaker 2]
I'm doing a Master's, yes, an M.Ed. in Educational Technology.

[Speaker 1]
Fantastic. You're in the right field.

[Speaker 1]
Okay, well, fantastic. That's great. All the best.

[Speaker 2]
Thank you for participating. I can't explain to you how difficult it is to get people to participate.

Yes, but I think we should be good. I think we should be good. Great.

Well, thank you so much for participating, and thank you for all your perspectives.

[Speaker 1]
Thank you, and thanks for what you suggested as well.

End.

Educator 4

[Speaker 2]
Okay, so I'm going to record the interview. This is purely for data collection purposes, it's just because I need to transcribe the data. When I publish, you'll be anonymized, so any identifying details will be completely excluded from what I publish as well as your institution.

People will not know you are Educator 4, is your pseudonym. Yeah, the data collected, I'll keep for a maximum of one year, it's going to be on my laptop, it's going to be and after that it gets deleted as soon as I publish, essentially as soon as I pass. Okay, and then just before I start, do you have, sorry I just moved, just before I start, do you have any questions for me about the interview, about the data, about my report?

Okay, so the **first question I have for you is, could you talk more about your personal views on AI in education? Has your opinion changed over time and what specific experience have shaped how you feel about AI's role in learning and assessment?**

So here I'm asking, how did you feel about AI in the beginning compared to now and whether any specific events that changed your perception or shaped how you feel over the course of kind of AI's introduction?

[Speaker 1]
Okay, so firstly I would say that I was very against AI because again as a teacher, you and specifically being an Afrikaans teacher, but now it's another tool that learners can use to manipulate their assessments and then as I was going through LinkedIn and you read articles on how AI can actually be used positively in education and I thought okay, not too bad, so how can I try and incorporate this in my course that I'm building for learners? So I think for me that is what maybe changed it and I also know here's another subject specialist is also very keen on AI and she made it, she also made me feel like it's not a scary tool but it's actually a very helpful tool that can be very positive and yeah, very positive towards learners learning in education.

[Speaker 2]
Okay and specifically, can you relate that to assessment specifically? In Afrikaans, not. I know, I know it's a tough one.

Okay, no problem, no problem. Okay, so have you, **question two would be, have you noticed any trends or changes in how your learners and how students use AI in terms of assessment over time?** So again, do they use it as a tool?

How did they use it in the beginning compared to now? Are all learners using it or only some using it?

[Speaker 1]
So in my subject space, we haven't really noticed any use of AI.

[Speaker 2]
Okay.

[Speaker 1]
However, we did find, would Google Translate be seen as an AI?

[Speaker 2]
They have now, they've now integrated and when I publish, I will just put a note there, they've now integrated Gemini and Google Translate is now integrated with that Gemini AI. So I would call it an AI technology but I have to go and define that.

[Speaker 1]
Okay, so then if we're going to use that like that, then learners would use Google Translate more than actually AI because sometimes we would, in order to check whether learners wrote their essays, for example, themselves, we would see, okay, was this generated by AI? We'd use Winston, so we'd first translate the Afrikaans essay to English and then we'd put it into Winston AI to see. But that really came up, so they would just basically write the essay in English and then translate it to Google Translate.

But otherwise, for Afrikaans, not really the use of AI.

[Speaker 2]
Okay, and as a tool, I mean, okay, with you, got you. Moving on.

[Speaker 1]
And I think the reason is for that is because we did look into an AI tool to help learners with Afrikaans in general, but then it would be too much work for them because again, they'd revert back to Google Translate because it's easier for them. They know it well, so.

[Speaker 2]
Okay, but you would definitely say that in terms of Google Translate and the generation of these essays, that is definitely a problem that you have seen. Yes, definitely. **Okay, number three would be, how do you personally gauge whether an assessment is still valid or authentic, especially when AI use might be involved?**

So here I'm asking, walk me through the decision-making process and reasoning behind how you look at something and decide, okay, this assessment is valid or no, this assessment is not going to work at all in terms of AI use.

[Speaker 1]
Okay, so what we do is we will read through it and then I'll maybe meet with my colleague and say, do you think maybe this language use is a bit broad for maybe a grade 7 first additional language learner? And then we've also decided to maybe meet with a learner and ask them about the piece that they've written and based on that, we will say, okay, maybe not your own work. And then we will physically ask him, did you possibly make use of an AI tool or Google Translate?

And that's usually where they come clean and say, okay, I did, I'm sorry.

[Speaker 2]
And when you meet with the learner, because that's a kind of a collaborative almost strategy or that's what I'm going to call it. When you meet with a learner to ask them to kind

of gauge whether they created that or whether it was AI generated, what are you asking and how are you deciding?

[Speaker 1]
Okay. So what we ask is that we ask them, okay, can you maybe tell me about the story that you've written? Because now we also realize that with our frequent, it's easy to see whether they actually recall what they've written.

And most of the time they say, I wrote it too long ago, I can't remember anymore, even though it's on the screen. And then as the learner will speak, and then we ask them about like, maybe where did you get the idea for this? Okay.

Can you maybe tell me what this word means and what other way could you have possibly written that sentence? And then based on the learner's answer, they said, no, I just, you know, I just wrote it because that's how I felt. And then you say, okay, but that's how you felt now.

Do you feel like you could possibly change it if you had to write it tomorrow or if we give you another opportunity to write? And then you can see if the ideas flow or if it's just...

[Speaker 2]
No, I get you, if it's completely disjointed. Okay. And do you ever try, in terms of contextual, it's like when you pick topics to give them, I mean, I know sometimes you have to be following a curriculum, but when you pick topics to give them, do you put any consideration into the topics you are choosing in terms of AI use?

[Speaker 1]
Not in terms of AI use, but we, because it's first an additional language, and we often have learners who's doing Afrikaans for the first time, maybe in grade eight to grade nine. What we tend to do is we try to find topics that would be easy for learners to possibly get the vocabulary needed by using a dictionary rather than an extensive tool like AI.

[Speaker 2]
Okay.

[Speaker 1]
So we also try to, like, kind of to avoid the use of it.

[Speaker 2]
No, I get you, I get you. You're almost avoiding, you're trying to use topics that they would have, you're trying to provide authentic material, so that they don't have to rely on AI tools. Okay, so number **four would be, in your view, how do the assessment methods you currently use, so after everything you've told me now, these are your adapted strategies, do they stand up to the challenges posed by generative AI?**

Would you say that your assessment methods are currently standing up to AI? Do you think they work? Will they continue to work?

Why?

[Speaker 1]
Well, now we've recently implemented an additional, what's it, the Chrome extension, so that Chrome extension can also pick up when learners have faced large amounts of work to a Google Doc. So we're going to try this one out for, we implemented it, no, we've downloaded this year, so for next year we're going to see how it works, but usually we would, for example, our creative writing, we would make use of a Google Doc that allows learners to write, and usually the cases they copy and paste from Google Translate, so we moved that away to using our exam platform, exam.net, that doesn't allow learners to open any other tab besides the exam tab, and so if the moment they open another tab or click somewhere else on a different screen, they're going to be kicked out. Sure, I'm with you, yes.

As to why, so we, this is the first time that we're going to try this out this term, and we're hoping that it will work, because learners are only allowed to be kicked out twice, or no, thrice, and then the exam ends.

[Speaker 2]
And then that's, yeah, I get you, then there's punishment or repercussions from that point on. Yeah. Okay.

[Speaker 1]
Yeah, but I think we, we, it's trial and error, we see, we see, we see something that's not working, we're going to try something else, but I do think that it, at some stage, is just going to be very difficult to just continue to move away from.

[Speaker 2]
No, these tools are evolving all the time, there's only so much adaptation you can, you can make before there has to be a big change. Yeah. **Okay, number five is, can you walk me through how your assessment strategies, I think you have answered this one sufficiently, but if you want to add anything, please do, can you walk me through how your assessment strategies have evolved over time in response to AI?**

What factors or events have led you to adopt certain strategies over others? So how did this start? When did you notice the issue?

And how did you originally start to adapt? What events were there that influenced this kind of change?

[Speaker 1]
So I think I noticed it was when I started, and I marked my first script, and then you immediately just, you see it, and then we had to, there wasn't a solution at the time, and then after a while, we had to see, and we'd have to do some research as to what we can do, and that's how we got to the exam.net platform. Also, in terms of, we also used to do our, what's the word for it, our language tests on Google Form, but again, they could have the display tabs open, so then we have to move those assessments to exam.net as well, and that seems to have worked, but now we just need to check that creative writing.

[Speaker 2]

No, okay, I'm with you. Fingers crossed. **Are there any strategies you've considered but not implemented?**

What has prevented their adoption? So are there any strategies you think might work, but maybe you don't have time, or the resources, especially in terms of formative assessments? I know curriculum plays a role here, perhaps.

[Speaker 1]
Yeah, definitely with curriculum, but another thing that we are looking at is the use of, because we use Google Classroom as our platform to upload all our formal assessments, so instead of using a Google Doc that I spoke about earlier, we're thinking of giving learners a Kami link, and the Kami link will, you can change the settings, the features control on how learners can edit it, edit that document, so instead of having a copy and paste function, it's just a function where they have to physically type out, but again, the thing is, that doesn't mean that the learners don't have an additional tab open and get the resources, copying and writing.

[Speaker 2]
Oh, even, sorry to interrupt you, even an additional device, I'm thinking, I mean, the amount of learners I've come across with multiple screens, I mean, here I have three screens, and what I can tell you about exam.net is it doesn't apply to your second screen.

[Speaker 1]
I know, so it's just, it's insane, because like, every time you feel like, oh, I have a solution, I mean, like, oh, wait, there's a cell phone, there's an iPad. Yes, you know, sometimes what I found out is mom and dad sitting next to the learner as well, and then we're helping out.

[Speaker 2]
Yeah, no, I understand, I understand the issue. Okay, **number seven is, you also mentioned that you envision integrating AI into assessment, you say that you want to integrate or you see AI being integrated into a positive way, and you want to teach learners the correct way to use AI in the future. Can you explain this further?**

How do you perceive the correct way? And how do you perceive AI being integrated into assessments in a positive way?

[Speaker 1]
I think for me, using AI in a positive way would mean that learners can learn from AI, and not just simply take what AI gives them and use it. So one thing that I've noticed, or one platform that we, AI platform that we looked into for Afrikaans, but obviously, we said no to because of Google Translate, is the fact that you will type a question like how to write a narrative essay, and then it will give you the format of how to write the elements and characteristics of a narrative essay, instead of just saying, write a narrative essay about my topic, okay, but whichever topic, and then I didn't do that, but it guided the learners, and it allowed learners to also ask follow up questions. So I really like that as AI as a learning experience, rather than just...

[Speaker 2]
Yes, as a tool.

[Speaker 1]
Yes, your answer to the question. I think it's tough.

[Speaker 2]
Yeah, I'll continue.

[Speaker 1]
No, please. Sorry. And what I also like about that one is that the AI tool would actually ask the learner a question.

What's your take? Do you think that this would be a good introduction? How would you change it?

I like that it's collaborative. And it also gives it, I think like it ignites that, you know, creative juices. Yes, I like that idea.

For me, that would be positive. And I'd like to incorporate that maybe as a preparation in like in a course or a lesson. You can use that kind of tool in preparation for the lesson that's going to take place on how to write a narrative essay, for example.

Just, you know, yeah.

[Speaker 2]
The AI tools are powerful, especially the ones designed for education. The issue I'm coming into, though, with this is that assessment has to mimic the context. So it's very difficult to now let learners use it as a tool, as this incredible, powerful tool, and then assessments, they can have no access to it.

Then there's a contextual issue. Yes. What do you think about that?

Do you see what I mean? I mean, if you're using it as a tool in your teaching and learning, then assessment has to mimic that context. Otherwise, you have a completely disjointed assessment practice.

Do you get what I'm saying?

[Speaker 1]
Yeah, that's a tough one.

[Speaker 2]
It's complicated. It is complicated. What would your suggestion be?

Like, what do you think? No, well, let me get to the end of this interview, and then I will tell you what I'm going to push forward.

[Speaker 1]
I have honestly no idea.

[Speaker 2]

No, I can tell you what's coming through, but I don't. I can't answer the questions first. So I have the raw data, and then I'll tell you what's been coming through in terms of research and what I think.

Okay. So number eight is your main adaptation seems to be that there are two groups of educators coming through. The one group is focusing more on restriction and the prevention of AI use.

Okay. **So your main adaptation strategy seems to be on the use of technological tools to restrict access, but you also mentioned these tools failing you. Can you explain further your experience with these tools?**

Are there any other challenges or limitations you've encountered in using these tools? Yes.

[Speaker 1]
So one limitation in terms of these tools failing is because it's not usually updated or the information that is providing learners with, or even teachers who make use of AI, it's not updated. For example, they will say that you can use direct speech in a narrative essay, and in Afrikaans it's not something that we want because it complicates it. The essay for the learner gets confusing.

So the fact that it's not usually information or the curriculum is not updated, that's one of the challenges and limitations. And also the fact that it just gives learners, it's not always something that learners can learn from. But I think that's not necessarily the tool.

[Speaker 2]
That's maybe just how learners perceive it. And detection tools. I mean, do you believe that when you say you use Winston AI and your Google Doc version and, and, and, I mean, do you believe that these tools are correct?

Do you trust these tools enough to be able to consequently punish learners from the tools?

[Speaker 1]
To a certain extent, because it does, what we've noticed also with our, on Google Doc, you have that originality report. It also picks up common phrases that is used. So I think that when we actually look for plagiarism and find ways, or when we suspect that something, a learner has used Google Translate or AI, we also need to look at the learner and say, what do I know about this learner?

Does this learner, you know, have the necessary vocabulary or is this just like a common phrase used in the language? So I think in terms of where the tools kind of fail you is that maybe it just, it can also put you in a very difficult situation because now you have to have this uncomfortable conversation with a learner and saying that it's been picked up as plagiarism, where sometimes it's just the case that you wrote a really brilliant essay.

[Speaker 2]
Yes, yes.

[Speaker 1]
And we know what you're talking about.

[Speaker 2]
And are using the available tools perhaps.

[Speaker 1]
Exactly. And not just copy and pasting as is. I think that would be, that would be it.

Like it picks up things that it's not necessarily.

[Speaker 2]
I get you trustworthy. Yeah. **Do you believe using these tools to ensure authenticity will continue to be effective over time as AI tools evolve?**

You have kind of answered this one. Do you have anything to add? No.

Okay. Let me move to the next one. **Could you explain what factors led you or why you have chosen to focus more on technological solutions?**

So these are the tools you're using to restrict access rather than adapting the assessments themselves. And was this choice subject-specific is something you can think about when answering.

[Speaker 1]
I think it's subject-specific because with Afrikaans we need to keep it, you know, plain, simple, because we don't want to confuse learners even more. And it's also sometimes it's difficult in terms of tools in general, technological tools. We are very limited for Afrikaans.

So if we are going to include Afrikaans AI tool in our assessments, they possibly just not one that we can use. So, and also the curriculum just doesn't allow it. Yeah.

You need an essay. You're just going to give us an essay as much as we'd like to evolve in the online space. We also very limited in what we can do in terms of it.

[Speaker 2]
Okay. And the curriculum you're following it is as far as I know, is following IEB or GDE. It is a national curriculum you are following.

Okay. And the last question I have for you is others are focusing on trying to, you have sort of answered it, but maybe add a little more if you'd like. Others are focusing on trying to adapt the assessments themselves.

So instead of focusing on restricting the use to AI tools, they're trying to adapt the assessments themselves to be less vulnerable. So that is less susceptible to AI use and more a measure of student learning. **What do you think are the potential benefits or limitations of an approach like this in comparison to what you have done?**

What do you think could be the issues, the benefits or the issues with adapting the assessment itself instead of preventing the use of AI?

[Speaker 1]

I think it would make our admin less, but I do think that it's also a very good, I think it's a way of making, how do I say this in English? I think how to make it more relevant and also being able just to make learners feel that, you know, AI is a tool that I can learn from and not something that we dislike in education. I think that incorporating that could also be very important.

And I think we need to try harder to adapt our assessments to make use of AI rather than just, you know, preventing the use of it. Because I mean, like you said, it's involving craze all the time.

[Speaker 2]
No, it involves, I mean, think about two years ago when it came, because I am a heavy AI user. It's been now my focus of research. I use it for nearly everything and every single week it evolves.

[Speaker 1]
It's insane. So I think because it evolves so quickly, our preventative measures is not going to be able to necessarily keep up. So I think, I just think that it's going to be better.

I just come up with it, you know, that, you know, you expect it to adapt and make use of it in our assessments still.

[Speaker 2]
Okay. I don't think you answered your question. No, no, it's fine.

It's also, it's just watching you think this is just raw data. That's all that I really need. That is the end of this interview.

Do you have any other questions for me? Are you asking me what I think?

[Speaker 1]
Yes.

End.

Appendix D: Participant consent forms

Images showing the Google Forms information-and-consent screen that preceded all survey items. Participants could only continue after selecting, “Yes, I understand and agree”, indicating recorded consent from Educators 1 - 4 respectively, with their names removed for anonymity.

Participant information & consent

By ticketing "Yes, I understand and agree." in the question below you are acknowledging that you understand and agree to the following items:

- The research study was explained to me. I understand what the study is about.
- I understand that my participation is this study is voluntary.
- I agree that my responses to this survey and interview may be downloaded and stored behind password protected measures.
- I agree that direct quotations from my survey and interview responses may be used by the researcher in their research report.
- I agree and understand that my participation will remain anonymous (my name and all identifying data will not be used by the researcher in their research report).

Ethical considerations to note:

How will this data be stored?

Your responses will be downloaded and stored securely behind password-protected measures. The data will be retained for a maximum of 1 year, after which it will be deleted.

Why do you need my name if my participation is anonymous?

The data will be anonymized, meaning all names and identifying features will be completely removed for the research report. I am asking for your full name purely for the purpose of potentially reaching out to you for a follow-up interview. Virtual interviews with those who have significant experience or particularly insightful answers is part of the data collection process.

Have you read & understood the participation & consent information and agree to take part in the study? *

(●) Yes, I understand and agree.

Full name *

Educator 1

Participant information & consent

By ticketing "Yes, I understand and agree." in the question below you are acknowledging that you understand and agree to the following items:

- The research study was explained to me. I understand what the study is about.
- I understand that my participation is this study is voluntary.
- I agree that my responses to this survey and interview may be downloaded and stored behind password protected measures.
- I agree that direct quotations from my survey and interview responses may be used by the researcher in their research report.
- I agree and understand that my participation will remain anonymous (my name and all identifying data will not be used by the researcher in their research report).

Ethical considerations to note:

How will this data be stored?

Your responses will be downloaded and stored securely behind password-protected measures. The data will be retained for a maximum of 1 year, after which it will be deleted.

Why do you need my name if my participation is anonymous?

The data will be anonymized, meaning all names and identifying features will be completely removed for the research report. I am asking for your full name purely for the purpose of potentially reaching out to you for a follow-up interview. Virtual interviews with those who have significant experience or particularly insightful answers is part of the data collection process.

Have you read & understood the participation & consent information and agree to take part in the study? *

(●) Yes, I understand and agree.

Full name *

Educator 2

Participant information & consent

By ticketing "Yes, I understand and agree." in the question below you are acknowledging that you understand and agree to the following items:

- The research study was explained to me. I understand what the study is about.
- I understand that my participation is this study is voluntary.
- I agree that my responses to this survey and interview may be downloaded and stored behind password protected measures.
- I agree that direct quotations from my survey and interview responses may be used by the researcher in their research report.
- I agree and understand that my participation will remain anonymous (my name and all identifying data will not be used by the researcher in their research report).

Ethical considerations to note:

How will this data be stored?

Your responses will be downloaded and stored securely behind password-protected measures. The data will be retained for a maximum of 1 year, after which it will be deleted.

Why do you need my name if my participation is anonymous?

The data will be anonymized, meaning all names and identifying features will be completely removed for the research report. I am asking for your full name purely for the purpose of potentially reaching out to you for a follow-up interview. Virtual interviews with those who have significant experience or particularly insightful answers is part of the data collection process.

Have you read & understood the participation & consent information and agree to take part in the study? *

(●) Yes, I understand and agree.

Full name *

Educator 3

Participant information & consent

By ticketing "Yes, I understand and agree." in the question below you are acknowledging that you understand and agree to the following items:

- The research study was explained to me. I understand what the study is about.
- I understand that my participation is this study is voluntary.
- I agree that my responses to this survey and interview may be downloaded and stored behind password protected measures.
- I agree that direct quotations from my survey and interview responses may be used by the researcher in their research report.
- I agree and understand that my participation will remain anonymous (my name and all identifying data will not be used by the researcher in their research report).

Ethical considerations to note:

How will this data be stored?

Your responses will be downloaded and stored securely behind password-protected measures. The data will be retained for a maximum of 1 year, after which it will be deleted.

Why do you need my name if my participation is anonymous?

The data will be anonymized, meaning all names and identifying features will be completely removed for the research report. I am asking for your full name purely for the purpose of potentially reaching out to you for a follow-up interview. Virtual interviews with those who have significant experience or particularly insightful answers is part of the data collection process.

Have you read & understood the participation & consent information and agree to take part in the study? *

(●) Yes, I understand and agree.

Full name *

Educator 4