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Generative Artificial Intelligence in Accounting Education: A Multi-Layer Conceptual Framework for Assessment Redesign and Responsible Use in Higher Education

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ABSTRACT

The generative artificial intelligence (GenAI) tools are now able to answer many of the accounting assessment questions, and this situation creates a serious challenge for the accounting education in the universities. On one side, the accounting graduates need to learn how to use the GenAI because the accounting profession is adopting the AI in the auditing, the reporting, and the analysis. On the other side, the uncontrolled use of the GenAI may weaken the learning of the students and the integrity of the assessments, and the recent evidence of 2025 and 2026 shows that the unguided use can improve the product of the students while weakening their learning. The objective of this paper is to develop a conceptual framework that guides the accounting departments in the integration of the GenAI in a responsible way. The paper follows a conceptual research design based on a structured integrative review of the literature on the GenAI in the higher education, the accounting education, the assessment, and the academic integrity. The proposed framework consists from three layers, which are the institutional policy layer, the curriculum and assessment layer, and the pedagogical practice layer, and it suggests five propositions that link these layers with the learning outcomes. The framework argues that the constructively aligned assessment redesign, the integration of the AI literacy within the accounting courses, the competence of the educators, and the self-regulated use of the students are the main conditions for the positive effect of the GenAI.

الكلمات الدالة:

تعليم المحاسبة؛ إعادة تصميم التقييم؛ الذكاء الاصطناعي التوليدي؛ النزاهة الأكاديمية؛ الثقافة بالذكاء الاصطناعي؛ التعليم العالي.

الملخص

أصبحت أدوات الذكاء الاصطناعي التوليدي قادرة حالياً على الإجابة عن العديد من أسئلة التقييم في مجال المحاسبة، مما يفرض تحدياً جدياً أمام تعليم المحاسبة في الجامعات. فمن ناحية، يحتاج خريجو المحاسبة إلى تعلم كيفية استخدام هذه الأدوات؛ نظراً لأن مهنة المحاسبة بدأت بالفعل في تبني الذكاء الاصطناعي في مجالات التدقيق وإعداد التقارير والتحليل. ومن ناحية أخرى، قد يؤدي الاستخدام غير المنضبط للذكاء الاصطناعي التوليدي إلى إضعاف عملية التعلم لدى الطلاب والمساس بنزاهة التقييمات؛ إذ تشير الأدلة الحديثة (المتعلقة بعامي 2025 و2026) إلى أن الاستخدام غير الموجه لهذه الأدوات قد يحسّن من جودة المخرجات التي يقدمها الطلاب، لكنه في الوقت ذاته يضعف من تعلمهم الفعلي. تهدف هذه الورقة البحثية إلى تطوير إطار مفاهيمي يوجه أقسام المحاسبة نحو دمج

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الذكاء الاصطناعي التوليدي بطريقة مسؤولة. وتعتمد الورقة منهجية بحثية مفاهيمية تستند إلى مراجعة تكاملية منظمة للأدبيات المتعلقة بالذكاء الاصطناعي التوليدي في سياقات التعليم العالي، وتعليم المحاسبة، والتقييم، والنزاهة الأكاديمية. يتكون الإطار المقترح من ثلاث طبقات: طبقة السياسات المؤسسية، وطبقة المناهج والتقييم، وطبقة الممارسات التربوية، ويطرح خمس فرضيات تربط هذه الطبقات بمخرجات التعلم. ويخلص الإطار إلى أن إعادة تصميم التقييمات وفق نهج المواءمة البنائية، ودمج مهارات التعامل مع الذكاء الاصطناعي ضمن مقررات المحاسبة، وضمان كفاءة المعلمين، وتعزيز الاستخدام الذاتي المنضبط من قِبل الطلاب؛ تُعد جميعها شروطاً أساسية لتحقيق أثر إيجابي لاستخدام الذكاء الاصطناعي التوليدي.

JEL Classification: M41; I23; O33.

1. Introduction

The accounting education is facing a new stage of change because of the rapid development of the generative artificial intelligence (GenAI). Since the public release of ChatGPT at the end of 2022, the students in the universities have an easy access to the tools that can write the essays, solve the problems, and explain the concepts in a few seconds (Kasneci et al., 2023; Rudolph et al., 2023). Moreover, the study of Wood et al. (2023), which included a large number of the accounting assessment questions from many universities, showed that ChatGPT was able to answer a significant part of these questions, although the performance of the students was still better than the performance of ChatGPT in average. In addition, a more recent study of Tharapos et al. (2025), which evaluated ChatGPT on 18 assessments across six courses of an undergraduate accounting program, found that ChatGPT is effective in the lower and the middle order tasks, but it is still limited in the higher order tasks. Accordingly, the accounting educators cannot ignore the GenAI anymore, and they need to reconsider the way in which they teach and assess the students.

The challenge of the GenAI in the accounting education has two sides. On the first side, the accounting profession is adopting the AI in a fast way, where the AI is used in the auditing, the data analysis, and the preparation of the reports (Kokina & Davenport, 2017; Moll & Yigitbasioglu, 2019). Therefore, the accounting graduates need to have the skills to use the AI tools and to evaluate their outputs in a critical way, and this is consistent with the International Education Standards that require the professional accountants to have the competencies in the information and communications technology (International Accounting Education Standards Board [IAESB], 2019). On the second side, the uncontrolled use of the GenAI by the students may lead to the academic misconduct, and it may also reduce the deep learning, because the students may depend on the GenAI to produce the answers without understanding the concepts (Cotton et al., 2024; Bearman et al., 2023). This concern is supported by the recent experimental evidence, where Bastani et al. (2025) found that the students who used an unrestricted GPT-4 tool performed better during the practice, but they performed worse than the other students when the tool was removed, and Fan et al. (2025) warned from a "metacognitive laziness" among the students who depend on ChatGPT. In other words, the accounting educators are in front of a dilemma between the preparation of the students for an AI-based profession and the protection of the learning and the integrity of the assessment.

The universities responded to the GenAI in different ways. Some universities banned the use of the GenAI in the assessments, while other universities allowed the use of the GenAI with the conditions, and other universities left the decision to the individual educators (Chan, 2023). Moreover, the international organizations, such as the UNESCO (2023), published the guidance for the use of the GenAI in the education and the research, and the Australian Tertiary Education Quality and Standards Agency published a guidance on the assessment reform in the age of the AI (Lodge et al., 2023). However, these guidelines are general, and they do not consider the specific nature of the accounting discipline, where the knowledge is technical, the professional judgement is central, and the assessments often depend on the calculations and the application of the standards. Previous studies on the GenAI in the higher education focused mainly on the opportunities and the risks in a general way (Kasneci et al., 2023; Rudolph et al., 2023), or on the acceptance of the GenAI by the students (Strzelecki, 2024). In the accounting education, the studies focused on the performance of the GenAI on the accounting questions (Wood et al., 2023), or on the technology in the

accounting curriculum in general (Kotb et al., 2019). Moreover, the studies that were published in 2025 and 2026 focused mainly on the perceptions of the accounting educators (Mcbride & Rose, 2026) and the accounting students (Tsiligkiris et al., 2026; Mahardika et al., 2026), and on the performance of ChatGPT in the specific accounting assessments (Tharapos et al., 2025). However, there is still a lack of a conceptual framework that explains how the accounting departments can integrate the GenAI in a systematic and a responsible way, and that connects the institutional policy, the curriculum, the assessment, and the pedagogy with the learning outcomes. Accordingly, the current paper aims to answer the following research questions: (1) What are the main layers of the decisions that the accounting departments need to make regarding the GenAI? (2) How are these layers expected to affect the learning outcomes of the accounting students? (3) What are the conditions that make the effect of the GenAI positive for the learning and for the integrity?

To answer these questions, the paper builds on the constructive alignment theory (Biggs, 1996), the technological pedagogical content knowledge (TPACK) framework (Mishra & Koehler, 2006), and the self-regulated learning theory (Zimmerman, 2002). The paper contributes to the literature by proposing a multi-layer framework that is specific to the accounting education, and by developing five propositions for the future testing. Moreover, the paper offers a practical guidance for the accounting educators, the heads of the departments, and the accreditation bodies. The rest of the paper is organized as follows. Section 2 reviews the literature, Section 3 explains the methodology, Section 4 presents the framework and the propositions, Section 5 discusses the implications, and Section 6 concludes the paper.

2. Literature Review

2.1 Generative AI in Higher Education

The use of the AI in the higher education started before the GenAI, and it included the intelligent tutoring systems, the adaptive learning systems, and the automated assessment (Zawacki-Richter et al., 2019; Kabudi et al., 2021). The systematic review of Zawacki-Richter et al. (2019) found that the research on the AI in the higher education was dominated by the computer science and the engineering perspectives, and it found also that there was a weak connection with the pedagogical theories and a lack of the critical reflection on the ethical issues. In addition, Kabudi et al. (2021) reviewed the AI-enabled adaptive learning systems, and they showed that these systems can personalize the learning according to the needs of each student, but there are still challenges in their implementation in the real classrooms.

With the arrival of the GenAI, the discussion became wider and more urgent. Kasneci et al. (2023) discussed the opportunities of the large language models for the education, such as the personalized feedback, the support of the writing, and the generation of the practice questions, and they discussed also the challenges, such as the bias, the over-reliance, and the copyright issues. Moreover, Rudolph et al. (2023) argued that the GenAI questions the value of the traditional assessments, such as the essays, and they suggested that the educators should redesign the assessments rather than trying to ban the GenAI. In the same direction, Dai et al. (2023) suggested that the GenAI should be considered as a student-driven innovation, which can support the learning if it is used in a suitable way. On the other hand, Bearman et al. (2023) reviewed the discourses of the AI in the higher education, and they found that the literature is often framed either by the imperative to change or by the fear of the loss of the control, and they called for a more critical and a more balanced discussion.

The recent empirical studies of 2025 gave a clearer picture about the effect of the GenAI on the learning itself, and not only on the performance in the tasks. Bastani et al. (2025) conducted a field experiment with about 1,000 high school students in the mathematics, and they found that the unrestricted access to GPT-4 improved the performance of the students during the practice, but when the access was removed, the students who used the unrestricted tool performed 17% lower than the students who never had the access. On the other hand, a tutor version of the same tool, which included the learning safeguards, reduced this negative effect to a large degree (Bastani et al., 2025). In the same direction, Fan et al. (2025) conducted a randomized experiment with 117 university students on a writing task, and they found that the students who used ChatGPT improved their essay scores more than the other groups, but there was no significant difference in the knowledge gain, the knowledge transfer, and the motivation, and the authors explained this result by the concept of the metacognitive laziness. Furthermore, Gerlich (2025) studied 666 participants, and the study

found that the frequent use of the AI tools is negatively correlated with the critical thinking, and that this relationship is mediated by the cognitive offloading. Based on the above, the recent evidence suggests that the GenAI can improve the product of the student while it may weaken the process of the learning, and therefore the design of the use is more important than the use itself.

2.2 AI and the Changing Accounting Profession

The accounting profession is changing because of the digital technologies. Kokina and Davenport (2017) explained that the AI and the automation are changing the auditing, where the AI can analyze the full population of the transactions instead of the samples, and it can identify the anomalies in a faster way. Moreover, Moll and Yigitbasioglu (2019) discussed the effect of the internet-related technologies, such as the cloud, the big data, the blockchain, and the AI, on the work of the accountants, and they suggested that the role of the accountants will move from the processing of the data to the interpretation and the advising. Accordingly, the accountants of the future need a combination of the technical accounting knowledge, the data skills, and the professional judgement.

In response to these changes, the professional bodies updated their education requirements. The International Accounting Education Standards Board revised the International Education Standards in 2019, and the revisions strengthened the requirements related to the information and communications technology and the professional skepticism (IAESB, 2019). Furthermore, Lawson et al. (2014) proposed an integrated competency-based framework for the accounting education, which focuses on the long-run careers of the students, and which includes the foundational competencies, the broad management competencies, and the accounting competencies. However, the study of Kotb et al. (2019) on the British and Irish accounting degrees showed that the integration of the information technology in the accounting curriculum was still limited and uneven between the universities. Hence, there is a gap between the needs of the profession and the content of the accounting programs, and the GenAI makes this gap more visible.

2.3 GenAI and the Accounting Assessments

The accounting assessments are traditionally based on the examinations, the problem-solving exercises, the case studies, and the written assignments. The study of Wood et al. (2023) is one of the most important studies in this field, where the researchers collected the assessment questions from many universities and compared the answers of ChatGPT with the answers of the students. The results showed that the students performed better than ChatGPT in average, but ChatGPT performed well in some types of the questions, such as the true/false and the multiple-choice questions, and it performed less well in the questions that require the calculations and the multi-step reasoning (Wood et al., 2023). It is worth mentioning that the GenAI models are improving continuously, and therefore it is expected that the gap between the GenAI and the students will become smaller in the future. More recently, Tharapos et al. (2025) evaluated ChatGPT on 18 assessments in six courses of an undergraduate accounting program by using the revised Bloom's taxonomy, and they found that ChatGPT is effective in the tasks of the lower and the middle order, such as the remembering and the applying, but it is less useful in the tasks of the higher order, such as the evaluating and the creating. Accordingly, Tharapos et al. (2025) suggested that ChatGPT is more suitable for the reinforcement of the foundational knowledge, and this finding gives a clear direction for the accounting educators regarding the type of the tasks that need the redesign.

This situation means that the assessments that depend on the reproduction of the knowledge are becoming less valid in the measurement of the learning of the students. In other words, if a student can submit a correct answer produced by the GenAI, the grade does not reflect the knowledge or the skills of the student. Therefore, the literature suggests that the assessments should be redesigned to focus on the higher-order skills, such as the analysis, the evaluation, and the creation, according to the revised taxonomy of Anderson and Krathwohl (2001), and to focus on the process of the learning and not only on the final product (Bearman & Luckin, 2020; Lodge et al., 2023).

2.4 Academic Integrity and Assessment Security

The academic integrity is a central value in the higher education, and the GenAI created new challenges for this value. Cotton et al. (2024) discussed the risks of the GenAI for the academic integrity, and they suggested several strategies to ensure the integrity, such as the clear policies, the design of the assessments that are difficult to complete by the GenAI, and the education of the students about the ethical use. Moreover, Dawson (2021) distinguished between the academic integrity, which is related to the values and the behavior

of the students, and the assessment security, which is related to the measures that make the cheating difficult and detectable. According to Dawson (2021), the both approaches are needed, because the education of the students alone is not sufficient to prevent the cheating, and the security measures alone may create an atmosphere of the distrust.

It should be noted that the AI detection tools are not a reliable solution for the problem. The literature showed that these tools may produce the false positive results, where an original work of the student is classified as an AI-generated work, and this may lead to the unfair accusations against the students (Cotton et al., 2024; Lodge et al., 2023). Therefore, the focus of the literature moved from the detection to the redesign of the assessments and to the development of the clear policies on the acceptable use of the GenAI (Chan, 2023; UNESCO, 2023). However, Corbin et al. (2025) argued that many of these policies, such as the "traffic light" systems that tell the students which level of the AI use is allowed in each task, depend only on the discursive rules that the students can ignore, and this creates what they called an "enforcement illusion". Accordingly, Corbin et al. (2025) suggested that the assessment should be changed in its structure, so that the validity of the assessment is built inside the task itself, and not only announced in the instructions. In addition, the study of Mahardika et al. (2026) on 260 first-year accounting students in Indonesia found that the academic integrity intentions of the students were the strongest predictor of the responsible use of the GenAI, which means that the values of the students are still important beside the structure of the assessment.

2.5 Recent Evidence from Accounting Education

The accounting education literature produced several new studies in 2025 and 2026, and these studies help to understand the views of the educators and the students in the accounting discipline specifically. Regarding the educators, Mcbride and Rose (2026) conducted a thematic analysis of the perceptions of the accounting educators in five countries, and they found that the educators are concerned about the academic integrity, but many of them also believe that the GenAI can enhance the learning and can be a reason for the redesign of the assessments. Regarding the students, Tsiligkiris et al. (2026) surveyed 523 accounting students in the United Kingdom, Australia, and Hungary, and they found that the students use the GenAI mainly for the research and the generation of the ideas, while only 24% of the students engaged with the institutional guidelines, and the concerns about the integrity and the over-reliance were still present.

It is worth mentioning that these recent studies confirm two important points for the current paper. The first point is that the existence of the institutional policy is not enough, because a large part of the students do not read or do not follow the guidelines (Tsiligkiris et al., 2026; Corbin et al., 2025). The second point is that the educators are not against the GenAI in principle, but they need a clear direction on how to integrate the GenAI in the teaching and the assessment (Mcbride & Rose, 2026). Hence, the recent evidence from the accounting education supports the need for a framework that connects the policy, the assessment, the curriculum, and the classroom practice together, and this is the aim of the current paper.

2.6 Theoretical Foundations

The current paper depends on three theoretical foundations. The first foundation is the constructive alignment theory of Biggs (1996), which explains that the learning outcomes, the teaching activities, and the assessment tasks should be aligned with each other, so that the students are guided to perform the activities that lead to the intended outcomes. In the context of the GenAI, the constructive alignment means that if the intended outcome is the professional judgement, the assessment should require the student to show this judgement in a way that cannot be replaced by the GenAI.

The second foundation is the TPACK framework of Mishra and Koehler (2006), which explains that the effective use of the technology in the teaching requires the integration of three types of the knowledge, which are the technological knowledge, the pedagogical knowledge, and the content knowledge. As for the accounting educators, the TPACK framework means that the educator needs to understand how the GenAI works, how to use it in the teaching, and how it is related to the accounting content, such as the standards and the professional judgement. The third foundation is the self-regulated learning theory, which explains that the effective learners plan, monitor, and evaluate their own learning (Zimmerman, 2002). In the context of the GenAI, the self-regulated learning is important because the student needs to decide when to use the GenAI, and how to evaluate its outputs, and how to avoid the over-reliance on it. In addition, the cognitive load theory suggests that the learning requires the mental effort in the processing of the information (Sweller,

1988), and therefore if the GenAI performs all the mental work instead of the student, the learning may not happen.

2.7 Research Gap

Based on the reviewed literature, the research gap can be summarized as follows. The general literature on the GenAI in the higher education provides useful insights, but it does not consider the specific nature of the accounting discipline. The accounting education literature recognized the importance of the technology, and it tested the performance of the GenAI on the accounting questions (Wood et al., 2023; Tharapos et al., 2025) and explored the perceptions of the educators and the students (Mcbride & Rose, 2026; Tsiligkiris et al., 2026), but it did not provide a comprehensive framework for the integration of the GenAI in the accounting programs. Moreover, the existing guidelines focus either on the policy level or on the assessment level, and they do not explain how the different levels interact with each other to affect the learning outcomes. Table 1 summarizes the literature streams and their limitations.

TABLE 1. SUMMARY OF THE LITERATURE STREAMS ON GENAI AND ACCOUNTING EDUCATION

Literature stream	Key insight	Representative sources	Limitation addressed
AI and GenAI in higher education	GenAI offers the personalization but threatens the traditional assessments	Zawacki-Richter et al. (2019); Kasneci et al. (2023); Rudolph et al. (2023)	Not specific to the accounting discipline
Changing accounting profession	AI shifts the accountants from processing to judgement	Kokina & Davenport (2017); Moll & Yigitbasioglu (2019)	Implications for the teaching are not detailed
Accounting curriculum and standards	Technology competencies are required but unevenly taught	Lawson et al. (2014); Kotb et al. (2019); IAESB (2019)	GenAI is not covered
GenAI and accounting assessment	ChatGPT answers many of the accounting questions, but is weaker in the higher-order tasks	Wood et al. (2023); Tharapos et al. (2025)	No framework for the redesign
Academic integrity	Detection is unreliable; discursive policies alone create an "enforcement illusion"	Dawson (2021); Cotton et al. (2024); Corbin et al. (2025)	Links to the learning outcomes are not modelled
GenAI and the learning process	Unguided use improves the product but may weaken the learning	Bastani et al. (2025); Fan et al. (2025); Gerlich (2025)	Not tested in the accounting courses
Accounting educators and students (2025–2026)	Educators see both risks and benefits; few students follow the guidelines	Mcbride & Rose (2026); Tsiligkiris et al. (2026); Mahardika et al. (2026)	Perceptions are not linked to a design framework

3. Methodology

The current paper adopts a conceptual research design. The conceptual papers aim to develop the new frameworks by integrating the existing theories and the existing evidence, and they do not depend on the collection of the empirical data (Gilson & Goldberg, 2015). According to Jaakkola (2020), there are several approaches to the conceptual papers, and the current paper follows the model building approach, where the aim is to identify the constructs and to explain the relationships between these constructs in a way that can be tested in the future (MacInnis, 2011). The framework was developed based on a structured integrative review of the literature. The integrative review was chosen because it allows the combination of the different types of the sources, such as the empirical studies, the theoretical papers, and the policy documents, in order to produce a new framework (Torraco, 2005; Snyder, 2019). This approach is suitable for the topic of the GenAI in the accounting education, because the topic is new and is developing in a fast way, and the relevant knowledge is distributed between the education literature, the accounting literature, and the technology literature.

The sources were identified from the academic databases, including Scopus, Web of Science, ERIC, and Google Scholar, and from the publications of the international and the professional organizations, such as the UNESCO and the International Accounting Education Standards Board. The search used combinations of keywords such as "generative AI", "ChatGPT", "large language models", "accounting education", "assessment", "academic integrity", "AI literacy", and "higher education". The search covered the publications until 2026, and a special attention was given to the studies published in 2025 and 2026, because the evidence on the GenAI is developing in a fast way and the earlier studies may not reflect the current capabilities of the tools. The sources were selected according to their relevance to the research questions, their theoretical contribution, and their quality, and the priority was given to the peer-reviewed journal articles and to the official guidance documents.

The analysis followed three steps. In the first step, the main themes were extracted from the selected sources, such as the policy responses, the assessment strategies, the competencies of the educators, and the behavior of the students. In the second step, these themes were organized into three layers according to the level of the decision, which are the institutional level, the curriculum and assessment level, and the classroom level. In the third step, the relationships between the layers and the learning outcomes were formulated as the propositions based on the theoretical foundations and the previous evidence. It should be noted that the propositions are the theoretical expectations and not the empirical results.

4. 4. Results

4.1 Overview of the Framework

The proposed framework is presented in Figure 1, and it consists from three layers. The first layer is the institutional policy layer, which includes the clear policy of the university or the faculty on the use of the GenAI and the rules of the disclosure. The second layer is the curriculum and assessment layer, which includes the constructively aligned assessment redesign and the integration of the AI literacy within the accounting courses. The third layer is the pedagogical practice layer, which includes the competence of the educators in the use of the GenAI and the self-regulated and critical use of the GenAI by the students. The three layers are expected to affect the learning outcomes, which include the professional judgement of the students, the AI-ready competencies, and the academic integrity.

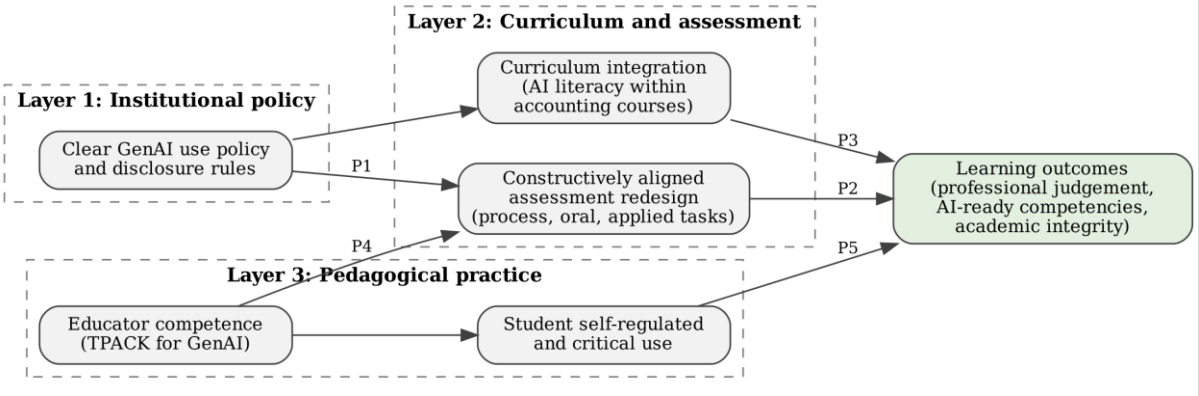


Fig. 1. The proposed multi-layer conceptual framework

4.2 Institutional Policy Layer

The institutional policy is the starting point for the responsible integration of the GenAI. When the policy is not clear, the educators apply different rules in their courses, and the students may be confused about what is allowed and what is not allowed, and this situation may lead to the unintentional misconduct (Chan, 2023).

Moreover, the policy that bans the GenAI completely is difficult to enforce, because the detection tools are not reliable, and this type of policy may prevent the students from learning the skills that the profession needs (Rudolph et al., 2023; Cotton et al., 2024). Therefore, the literature suggests that the policy should define the levels of the acceptable use, such as the use that is not allowed, the use that is allowed with the disclosure, and the use that is required as a part of the task, and the policy should require the students to disclose how they used the GenAI (UNESCO, 2023; Lodge et al., 2023). Accordingly, the clear policy is expected to support the redesign of the assessment and the integration of the AI literacy in the curriculum, because it gives the educators a clear reference and a legitimacy for their decisions. It should be noted, however, that the policy alone is not sufficient, because only 24% of the accounting students in the study of Tsiligkiris et al. (2026) engaged with the institutional guidelines, and Corbin et al. (2025) showed that the rules which are not built into the assessment structure are easy to ignore. For this reason, the framework places the policy as an enabler of the assessment redesign and the curriculum integration, and not as a direct cause of the learning outcomes. Hence, the following proposition is suggested:

> ***Proposition 1 (P1):*** *A clear institutional GenAI policy, which defines the levels of the acceptable use and the rules of the disclosure, is positively associated with the redesign of the assessments and with the integration of the AI literacy in the accounting curriculum.*

4.3 Assessment Redesign Layer

The assessment redesign is considered as the most important response to the GenAI in the literature (Rudolph et al., 2023; Lodge et al., 2023). According to the constructive alignment theory, the assessment should measure the intended learning outcomes (Biggs, 1996), and in the accounting education the intended learning outcomes include the application of the standards, the analysis of the cases, and the professional judgement (Lawson et al., 2014). Therefore, the assessments should be redesigned to include the tasks that require the students to show their reasoning, such as the oral examinations, the in-class problem solving, the reflective reports, and the case studies that are based on the local and the recent data that the GenAI may not know. In addition, some assessments can require the students to use the GenAI and then to evaluate and to correct its outputs, for example by asking the students to identify the errors in a GenAI answer on the revenue recognition or the lease accounting. This type of the assessment develops the professional skepticism of the students, which is a key competency for the accountants (IAESB, 2019; Bearman & Luckin, 2020). Moreover, the finding of Tharapos et al. (2025) that ChatGPT performs well in the lower and the middle order tasks, but less well in the higher order tasks, means that the accounting educators can use the revised Bloom's taxonomy as a practical guide to decide which assessments are more exposed to the GenAI and need the redesign first. In addition, the redesign should be structural, where the validity is built into the task, such as the supervised in-class components and the oral defence of the written work, rather than depending on the instructions only (Corbin et al., 2025). Accordingly, the following proposition is suggested:

> ***Proposition 2 (P2):*** *The constructively aligned assessment redesign, which focuses on the process, the reasoning, and the critical evaluation of the GenAI outputs, is positively associated with the professional judgement of the students and with the academic integrity.*

4.4 Curriculum Integration of AI Literacy

The integration of the AI literacy within the accounting courses means that the students learn about the GenAI as a part of the accounting content, and not as a separate course only. For example, in the auditing course the students can learn how the AI is used in the analysis of the transactions, and in the financial accounting course the students can learn how to verify the GenAI answers against the standards. This approach is consistent with the recommendation of the professional bodies to integrate the technology across the curriculum (IAESB, 2019), and it responds to the finding of Kotb et al. (2019) that the integration of the technology in the accounting degrees is limited. Moreover, the AI literacy includes the understanding of the limitations of the GenAI, such as the hallucination and the bias, and this understanding helps the students to use the GenAI in a responsible way (Kasneci et al., 2023; UNESCO, 2023). The need for this integration is clear also from the study of Tsiligkiris et al. (2026), where the accounting students used the GenAI mainly for the research and the generation of the ideas, and this shows that the students are already using the GenAI,

but they need the guidance to use it in the accounting tasks in a critical and a professional way. Therefore, the following proposition is suggested:

Proposition 3 (P3): *The integration of the AI literacy within the accounting courses is positively associated with the AI-ready competencies of the accounting graduates.*

4.5 Educator Competence

The educators are the main actors in the implementation of any change in the teaching. According to the TPACK framework, the educator needs to integrate the technological, the pedagogical, and the content knowledge in order to use the technology effectively (Mishra & Koehler, 2006). In the case of the GenAI, many accounting educators may not have enough experience with the GenAI tools, and they may feel uncertain about how to redesign their assessments or how to guide the students in the use of the GenAI. Moreover, the review of Zawacki-Richter et al. (2019) noted the weak role of the educators in the AI research in the higher education, which shows that the educators need more attention and more support. This is confirmed by the recent study of Mcbride and Rose (2026), where the accounting educators in five countries expressed both the concern about the integrity and the belief that the GenAI can enhance the learning, and this mixed position means that the educators are ready for the change if they receive the suitable support. Therefore, the competence of the educators is expected to affect the quality of the assessment redesign and the way in which the students use the GenAI, because the educators model the responsible use and provide the guidance to the students. Accordingly, the following proposition is suggested:

Proposition 4 (P4): *The competence of the accounting educators in the GenAI (TPACK for GenAI) is positively associated with the quality of the assessment redesign and with the self-regulated use of the GenAI by the students.*

4.6 Student Self-Regulated and Critical Use

The effect of the GenAI on the learning depends to a large degree on the way in which the students use it. If the students use the GenAI to receive the final answers without thinking, the students will not develop the understanding, and this is consistent with the cognitive load theory, which suggests that the learning requires the mental processing by the learner (Sweller, 1988). On the other hand, if the students use the GenAI as a tutor, to ask questions, to receive explanations, and to check their own answers, the GenAI may support the learning (Kasneci et al., 2023; Dai et al., 2023). The recent evidence gives a strong support for this distinction. Bastani et al. (2025) found that the unrestricted use of the GenAI harmed the learning when the tool was removed, while the guided tutor version reduced this harm, and Fan et al. (2025) found that the use of ChatGPT improved the essay scores without improving the knowledge gain or the transfer. Moreover, Gerlich (2025) found that the cognitive offloading mediates the negative relationship between the frequent use of the AI tools and the critical thinking. As for the integrity side, Mahardika et al. (2026) found that the integrity intentions of the accounting students were the strongest predictor of the responsible use of the GenAI. The self-regulated learning theory explains that the students who plan, monitor, and evaluate their learning are more able to use the resources in an effective way (Zimmerman, 2002). Moreover, the acceptance of the GenAI by the students depends on factors such as the performance expectancy and the habit (Strzelecki, 2024), and therefore the students may use the GenAI frequently even when the use is not beneficial for their learning. Hence, the following proposition is suggested:

Proposition 5 (P5): *The self-regulated and critical use of the GenAI by the accounting students is positively associated with the learning outcomes, including the professional judgement, the AI-ready competencies, and the academic integrity.*

Table 2 summarizes the propositions and the suggested approaches for their empirical testing.

TABLE 2. SUMMARY OF THE PROPOSITIONS AND THE SUGGESTED APPROACHES FOR FUTURE TESTING

Proposition	Relationship	Suggested measures	Suggested design

P1	Institutional policy → Assessment redesign and curriculum integration	Policy clarity index; proportion of the redesigned assessments	Document analysis; survey of the departments
P2	Assessment redesign → Professional judgement and integrity	Performance in the judgement-based tasks; integrity incidents	Quasi-experiment comparing the redesigned and the traditional courses
P3	AI literacy integration → AI-ready competencies	AI literacy test; employer evaluation of the graduates	Pre-post design; graduate tracer study
P4	Educator competence → Assessment redesign and student use	TPACK-GenAI scale; quality rating of the assessments	Survey of the educators; multilevel modelling
P5	Student self-regulated use → Learning outcomes	Self-regulated GenAI use scale; course grades; reflective logs	Survey; learning analytics; PLS-SEM

5. Discussion

The proposed framework has several theoretical implications. First, the framework applies the constructive alignment theory of Biggs (1996) to the era of the GenAI, and it argues that the alignment between the learning outcomes and the assessment is threatened when the assessment can be completed by the GenAI. In other words, the GenAI does not change the principle of the constructive alignment, but it changes the conditions of its application, and it requires the educators to design the assessments that measure the reasoning and the judgement of the students rather than the final answer only. This argument is consistent with the suggestions of Bearman and Luckin (2020) and Lodge et al. (2023) on the assessment of the human capabilities that the AI cannot replace, and it is consistent also with the argument of Corbin et al. (2025) that the changes in the assessment should be structural and not only discursive. Second, the framework extends the TPACK framework (Mishra & Koehler, 2006) to the context of the GenAI in the accounting education. The framework suggests that the TPACK of the accounting educators should include the knowledge of the GenAI capabilities and limitations in the accounting tasks, such as the application of the standards and the calculations. Moreover, the framework connects the TPACK of the educators with the self-regulated learning of the students, and this connection shows that the competence of the educators affects the learning not only through the design of the assessments, but also through the guidance and the modelling of the responsible use. Third, the framework contributes to the accounting education literature by moving from the evaluation of the GenAI performance on the accounting questions, as in Wood et al. (2023) and Tharapos et al. (2025), and from the description of the perceptions, as in Mcbride and Rose (2026) and Tsiligkiris et al. (2026), to a comprehensive framework for the action. The framework shows that the response to the GenAI should be made in multiple layers at the same time, and that a response in one layer only, such as a policy without an assessment redesign, may not achieve the desired outcomes. In addition, the framework integrates the professional requirements of the IAESB (2019) with the educational theories, and this integration is important for the accounting education as a professional education.

The framework provides several practical implications. For the university and the faculty management, the framework suggests that a clear and a flexible GenAI policy should be developed, and the policy should define the levels of the acceptable use and the rules of the disclosure, instead of the complete ban. Moreover, the management should support the educators by providing the training and the time that are needed for the redesign of the assessments, because the redesign requires an additional effort from the educators. For the accounting educators, the framework suggests that the assessments should be reviewed in order to identify the tasks that can be completed easily by the GenAI, and these tasks should be redesigned or complemented by the tasks that require the reasoning, the oral explanation, or the critical evaluation of the GenAI outputs. In addition, the educators can integrate the GenAI in the learning activities, for example by asking the students to compare the GenAI answer with the requirements of the IFRS, or to use the GenAI to generate the practice questions and then to verify the answers. Based on the evidence of Bastani et al. (2025), the educators should prefer the guided use of the GenAI, such as the tutor-style tools that give the hints instead of the full answers, over the unrestricted use, especially in the introductory accounting courses where the

students build the foundational knowledge. It is worth mentioning that the educators should avoid the dependence on the AI detection tools as the main evidence of the misconduct, because these tools may produce the false results (Cotton et al., 2024). For the accreditation bodies and the professional associations, the framework suggests that the accreditation standards should include the expectations regarding the AI literacy and the responsible use of the GenAI in the accounting programs. Furthermore, the professional bodies can support the universities by providing the case studies and the materials that show how the AI is used in the practice, and this support can reduce the gap between the education and the profession that was identified in the previous studies (Kotb et al., 2019; Moll & Yigitbasioglu, 2019).

The framework opens several directions for the future research. The future studies can test the propositions by using the surveys of the accounting educators and the students in different countries, and by using the structural equation modelling to test the relationships between the layers and the outcomes. Moreover, the quasi-experimental studies can compare the learning outcomes of the students in the courses with the redesigned assessments and the courses with the traditional assessments. In addition, the qualitative studies, such as the interviews with the educators and the focus groups with the students, are needed to understand how the students use the GenAI in the practice, and what are the challenges that the educators face in the redesign of the assessments. In addition, the field experiments similar to the study of Bastani et al. (2025) are needed in the accounting courses, in order to compare the effect of the guided and the unrestricted GenAI tools on the learning of the accounting concepts and on the professional judgement. Finally, the longitudinal studies can follow the graduates in the workplace to evaluate whether the integration of the AI literacy in the curriculum improves their readiness for the AI-based accounting profession.

6. Conclusion

The current paper developed a multi-layer conceptual framework for the responsible integration of the GenAI in the accounting education. Based on a structured integrative review of the literature and on the constructive alignment theory, the TPACK framework, and the self-regulated learning theory, the paper proposed that the integration of the GenAI should be made in three layers, which are the institutional policy layer, the curriculum and assessment layer, and the pedagogical practice layer. The paper proposed five propositions that explain how the clear policy, the assessment redesign, the integration of the AI literacy, the competence of the educators, and the self-regulated use of the students are expected to affect the learning outcomes of the accounting students. In other words, the paper argues that the GenAI can be an opportunity for the accounting education and not only a threat, but this depends on the coordinated response of the institutions, the educators, and the students. This conclusion is supported by the recent studies of 2025 and 2026, which showed that the policy alone is not followed by most of the students, and that the unguided use of the GenAI may weaken the learning, while the structural redesign of the assessment and the guided use can protect the learning and the integrity together. The paper has some limitations. First, the paper is conceptual, and the propositions need the empirical testing in the future. Second, the GenAI technology is developing in a very fast way, and some of the challenges and the solutions that were discussed in the paper may change with the development of the new tools. Third, the framework focuses on the undergraduate accounting education, and it may need some adaptation for the postgraduate programs or for the professional training. Despite these limitations, the paper provides a structured guidance for the accounting departments that are trying to respond to the GenAI, and it is hoped that the framework will support the development of the accounting graduates who are able to use the AI with a professional judgement and an ethical responsibility.

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