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The Changing Landscape Of Introductory Accounting: A Literature Review In The Era Of Artificial Intelligence And Digitalization

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Abstract

Artificial intelligence, automation, cloud accounting, and data analytics are reshaping accounting practice and creating new expectations for introductory accounting education. This study aimed to synthesize recent evidence on how digitalization is changing accounting practices, curriculum priorities, student competencies, learning processes, and the relationship between technological capability and foundational accounting knowledge. A qualitative structured narrative literature review was conducted using scholarly publications from 2021 to 2025. The study population comprised relevant academic publications, from which 15 core peer-reviewed studies were purposively selected. A structured literature review and data extraction matrix served as the research instrument, while data were analyzed through qualitative thematic synthesis and descriptive comparison using deductive and inductive coding. The analysis identified five overlapping themes: curriculum and learning redesign, artificial intelligence adoption and technology readiness, digital competence and implementation conditions, transformation of professional accounting practice, and the continuing importance of critical thinking, ethics, and professional judgment. The findings showed that introductory accounting is shifting from predominantly procedure-centered instruction toward conceptually grounded, digitally augmented learning. This transition requires technology to complement rather than replace foundational accounting reasoning and professional judgment.

Keywords: Accounting Education, Artificial Intelligence, Digital Transformation, Introductory Accounting, Technology Integration

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INTRODUCTION

The accounting discipline is undergoing a structural transformation as artificial intelligence, cloud computing, data analytics, automation, and other digital technologies become increasingly embedded in organizational financial processes. Activities traditionally associated with accounting, such as transaction recording, classification, reconciliation, reporting, and selected assurance procedures, are progressively supported or automated by digital systems, shifting accountants' responsibilities from routine data processing toward interpretation, analysis, professional judgment, and decision support. Empirical evidence illustrates the magnitude of this transformation. Fedyk et al. (2022), for example, found that investment in artificial intelligence within audit firms was associated with improvements in audit quality and efficiency, demonstrating that AI is moving beyond experimentation toward operational use within the profession. Similarly, Jackson et al. (2023) showed that technological change has altered the competencies expected of accounting graduates and early career accountants, particularly by increasing the importance of technology related knowledge alongside conventional accounting expertise. The expansion of cloud based accounting further illustrates this transition, as organizations increasingly adopt systems that provide real time access to financial information and integrate accounting processes with broader digital business operations (Hamzah et al., 2023). Consequently, introductory accounting can no longer be viewed exclusively as the study of manual bookkeeping procedures and the mechanical preparation of financial statements. It increasingly serves as the first stage at which learners must understand both the enduring logic of accounting and the technological environment through which accounting information is now generated, processed, analyzed, and communicated.

The transformation is particularly significant for accounting education because technological change is occurring simultaneously in professional practice and in the learning environment itself. Recent evidence from Indonesia illustrates that accounting educators are already experimenting with artificial intelligence applications in teaching. Fachrurrozie et al. (2025), based on responses from 230 accounting educators, found growing use of AI related applications in accounting classes, with tools such as Canva and ChatGPT becoming part of educators' instructional practices. At the student level, however, technological exposure does not automatically translate into equivalent digital competence. Research involving accounting students in Indonesia identified continuing differences in digital competence despite the broader growth of the digital economy, suggesting that technology access, educational background, and other social conditions

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may influence students' preparedness for digitally transformed accounting education (Weli et al., 2024). Similar concerns are evident internationally. Abdo-Salloum and Al-Mousawi (2025), in a study of 528 accounting students across seven Lebanese universities, found that technology readiness and perceptions of usefulness and ease of use were important in shaping willingness to adopt AI within accounting curricula, while information literacy also played a significant role. These developments create a critical challenge for introductory accounting courses. Students must still acquire fundamental principles such as the accounting equation, double entry logic, recognition and measurement, adjusting entries, and financial statement preparation, but they must increasingly learn these foundations in an environment where software, automation, and AI can perform many procedural tasks that previously constituted a substantial portion of introductory accounting instruction.

Existing scholarship has already recognized the need to align accounting education with technological developments, although research has approached the issue from different directions. Polimeni and Burke (2021) demonstrated how emerging accounting technologies and analytics could be incorporated into undergraduate accounting curricula to provide students with knowledge and capabilities that are more consistent with contemporary professional practice. Moore and Felo (2022) similarly observed that accounting education is evolving in response to technologies such as data analytics, artificial intelligence, blockchain, and cloud computing, while their analysis of accounting programs highlighted the growing importance of analytics related competencies within accounting curricula. Beyond curriculum content, research has also examined technology as a mechanism for creating more authentic learning environments. Sidorova et al. (2024), for instance, showed that digitally supported simulation activities in management accounting could connect university learning with professional practice and strengthen students' perceptions of their technical, intellectual, organizational, and interpersonal preparedness. Collectively, these studies indicate that digital transformation is not simply introducing additional software into accounting courses. Rather, it is gradually changing what accounting students are expected to know, how they practice accounting tasks, and how universities conceptualize professional readiness. Nevertheless, much of this literature addresses accounting education at the curriculum or program level, advanced accounting subjects, analytics, or specialized technological interventions. The implications for introductory accounting as the foundational point at which students first develop their conceptual understanding of accounting remain comparatively less integrated within this discussion.

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At the same time, the literature reveals important tensions regarding how digitalization and artificial intelligence should be incorporated into accounting education. Technology can enhance accessibility, simulation, data processing, personalized support, and exposure to professional practice, but successful digitalization cannot be assumed merely because technological tools are available. Arfaoui and Kammoun (2023) found that the digitalization of accounting education could be constrained by insufficient technological resources, inadequate digital skills among students and instructors, and reduced interaction in technology mediated learning environments. More fundamentally, the emergence of generative AI raises questions about the intellectual purpose of accounting education. Ballantine et al. (2024) argue that AI represents both a threat and an opportunity for the accounting academy because excessive reliance on technological outputs may reinforce a narrowly technical conception of accounting unless educators simultaneously strengthen critical thinking, human judgment, social awareness, and reflective learning. Student readiness also remains uneven. Although Abdo-Salloum and Al-Mousawi (2025) reported generally positive attitudes toward AI adoption, their findings show that readiness depends on multiple technological and informational capabilities rather than simple familiarity with digital devices. Thus, introducing AI into introductory accounting without reconsidering learning objectives may merely automate traditional exercises instead of improving accounting understanding. The educational challenge is therefore to determine which foundational accounting competencies should remain centered on human reasoning, which procedural activities can productively be supported by technology, and which new competencies students require to critically evaluate technology generated accounting information.

Taken together, prior studies reveal a fragmented knowledge base. One stream concentrates on technology adoption in professional accounting practice and shows that AI and cloud systems can improve efficiency, information processing, and organizational capabilities (Fedyk et al., 2022; Hamzah et al., 2023). A second stream focuses on curriculum modernization and the technology related capabilities expected from accounting graduates (Jackson et al., 2023; Moore & Felo, 2022). A third examines specific educational technologies, digital competence, or educators' willingness to incorporate AI into accounting classrooms (Fachrurrozie et al., 2025; Weli et al., 2024). Although these streams collectively demonstrate substantial changes in the accounting ecosystem, they provide less consolidated understanding of what these developments mean specifically for introductory accounting. This gap is important because introductory

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accounting establishes the conceptual architecture through which students interpret subsequent topics in financial accounting, managerial accounting, auditing, and accounting information systems. If introductory instruction remains predominantly organized around repetitive manual procedures while contemporary accounting practice increasingly relies on automated and intelligent systems, a disconnect may emerge between foundational education and the environment students will encounter in advanced study and professional practice. Conversely, excessive emphasis on technological tools at the introductory stage may weaken conceptual understanding if students learn to generate answers without understanding the accounting reasoning underlying them. The central problem, therefore, is not simply whether artificial intelligence and digital technologies should be introduced into introductory accounting, but how the fundamental purpose, content, competencies, and pedagogical orientation of introductory accounting should evolve in response to them.

Against this background, this study aims to review and synthesize recent literature on the changing landscape of introductory accounting in the era of artificial intelligence and digitalization, with particular attention to changes in accounting practices, curriculum expectations, student competencies, learning processes, and the evolving relationship between technological capability and fundamental accounting knowledge. The study is timely because the growing presence of AI in accounting classrooms and professional environments requires educators to reconsider not only how introductory accounting is delivered, but also what students should ultimately be able to understand and perform after completing the course (Ballantine et al., 2024; Abdo-Salloum & Al-Mousawi, 2025). The novelty of this review lies in positioning introductory accounting itself as the analytical focus rather than treating digitalization solely as an issue of technology adoption, advanced analytics, or general accounting curriculum reform. By integrating evidence from professional digital transformation, accounting education, AI adoption, digital competence, and technology supported pedagogy, this study proposes a more coherent interpretation of how foundational accounting education is moving from procedure centered learning toward a model that combines conceptual understanding, digital literacy, analytical reasoning, critical evaluation of AI generated outputs, and professional judgment. In theoretical terms, the review contributes by connecting technological transformation with the evolving educational role of introductory accounting. In practical terms, it can provide a foundation for educators and curriculum developers seeking to integrate AI and digital tools without

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compromising the conceptual foundations on which higher level accounting competence depends (Sidorova et al., 2024; Polimeni & Burke, 2021).

METHOD

This study employed a qualitative approach using a structured narrative literature review to examine the changing landscape of introductory accounting in the era of artificial intelligence and digitalization. A qualitative approach was considered appropriate because the study sought to interpret, compare, and synthesize conceptual and empirical findings across heterogeneous studies rather than estimate a single statistical effect or test a causal hypothesis. In methodological terms, qualitative inquiry enables researchers to examine meanings, patterns, relationships, and contextual variations within a body of evidence, while literature-based inquiry allows existing knowledge to be reorganized into a coherent conceptual explanation (Emzir, 2021; Sugiyono, 2022; Sudaryono, 2021). More specifically, the narrative review design was selected because it provides sufficient flexibility to integrate empirical studies, conceptual discussions, curriculum research, and critical perspectives that differ substantially in design, samples, settings, and analytical approaches (Juntunen & Lehenkari, 2021; Sukhera, 2022). This design is particularly suitable for the present study because research on accounting digitalization is dispersed across several interconnected streams, including emerging accounting technologies, professional transformation, accounting curricula, digital competencies, artificial intelligence adoption, and technology-supported learning. Prior studies have separately examined the integration of emerging technologies into accounting curricula (Polimeni & Burke, 2021), technology and analytics in accounting education (Moore & Felo, 2022), and the critical implications of generative AI for the accounting academy (Ballantine et al., 2024). The present review therefore synthesizes these streams around introductory accounting as the central analytical context rather than treating artificial intelligence or digitalization as isolated technological phenomena.

The population of the study consisted of scholarly publications addressing artificial intelligence, digitalization, digital technology, automation, cloud accounting, accounting education, accounting curricula, digital competencies, and technology-related transformation in the accounting profession and learning environment. The publication period was restricted to 2021 to 2025 to maintain contemporary relevance and capture the rapid development of AI and digital technologies during the most recent phase of accounting transformation. Google Scholar served as the primary literature

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discovery database because of its broad coverage of interdisciplinary scholarly publications, while publisher pages and DOI records were used to verify bibliographic information. Purposive sampling was applied to construct the analytical corpus, consistent with the principle that qualitative sampling should prioritize relevance, information richness, and alignment with the research problem rather than statistical representativeness (Emzir, 2021; Sudaryono, 2021). The final analytical corpus comprised 15 core peer-reviewed studies that directly represented the major themes of the review. These included research on AI adoption among accounting students (Damerji & Salimi, 2021; Abdo-Salloum & Al-Mousawi, 2025), technology-oriented accounting curricula (Polimeni & Burke, 2021; O'Hara et al., 2024), future accounting competencies (De Villiers, 2021; Jackson et al., 2023), digital competence and educational digitalization (Arfaoui & Kammoun, 2023; Weli et al., 2024), AI and accounting teaching practices (Ballantine et al., 2024; Fachrurrozie et al., 2025), digitally supported learning environments (Sidorova et al., 2024), and transformations occurring in professional accounting practice through AI and cloud accounting (Fedyk et al., 2022; Hamzah et al., 2023). Studies were included when they were peer reviewed, published between 2021 and 2025, available in English or Indonesian, and directly relevant to accounting education, introductory accounting, digital accounting practices, or the technological competencies expected of accounting students and professionals. Duplicate records, non-academic publications, studies with only peripheral relevance to accounting, and publications without sufficient methodological or conceptual information were excluded.

The research instrument was a structured literature review and data extraction matrix developed to ensure consistency in recording, comparing, and interpreting the selected publications. In document-based qualitative research, the instrument is not a questionnaire or achievement test but an analytical framework that guides the researcher in identifying and organizing relevant information from documentary sources (Emzir, 2021; Sugiyono, 2022). The matrix recorded the author and year of publication, research context, study objectives, methodological design, participants or units of analysis, type of digital technology examined, accounting domain, principal findings, educational implications, limitations, and relevance to introductory accounting. Additional coding categories captured the role of AI and digital technologies in accounting processes, curriculum transformation, student digital competence, professional skills, teaching and learning activities, critical thinking, professional judgment, and ethical concerns. These indicators were developed from the conceptual

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issues established in previous literature, particularly the growing importance of technological competence identified by Jackson et al. (2023), differences in digital competence reported by Weli et al. (2024), and the emerging use of AI applications among accounting educators identified by Fachrurrozie et al. (2025). Because the study did not use a psychometric questionnaire or test, statistical validity and reliability coefficients such as Cronbach's alpha were not applicable. Instead, methodological credibility was strengthened through explicit inclusion criteria, standardized extraction categories, cross-checking of bibliographic information, repeated comparison of coded evidence with the original publications, and agreement between the researchers regarding the interpretation and categorization of the literature, consistent with principles of transparency and dependability in qualitative research (Sudaryono, 2021; Sukhera, 2022).

The research procedure was conducted through several sequential but iterative stages. First, the research scope was established from the central question of how artificial intelligence and digitalization are changing the purpose, content, competencies, and pedagogical orientation of introductory accounting. Second, literature searches were performed in Google Scholar using combinations of keywords such as "introductory accounting", "accounting education", "artificial intelligence in accounting", "AI in accounting education", "digital accounting", "digitalization of accounting education", "accounting technology", "cloud accounting", "accounting curriculum", "digital competence", "data analytics in accounting", and "accounting students and ChatGPT". Boolean combinations of accounting-related and technology-related terms were employed to broaden or narrow the search according to the emerging themes. The search was restricted to publications from 2021 to 2025. Third, titles and abstracts were reviewed for topical relevance, after which potentially relevant articles were examined in greater detail against the inclusion and exclusion criteria. Citation chaining was also used to identify influential studies connected to the core literature, an iterative procedure that is compatible with narrative literature review methodology (Juntunen & Lehenkari, 2021; Sukhera, 2022). The screening process deliberately retained studies with diverse methodological designs because such heterogeneity allowed the review to capture the transformation of accounting from multiple perspectives, including professional practice (Fedyk et al., 2022; Hamzah et al., 2023), curriculum development (Moore & Felo, 2022; O'Hara et al., 2024), technology readiness (Damerji & Salimi, 2021; Abdo-Salloum & Al-Mousawi, 2025), and students' experiences with generative AI (Haugland Sundkvist & Kulset, 2024). Finally, eligible studies were entered into the extraction matrix and

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repeatedly compared during the synthesis process. This iterative movement between searching, reading, coding, and refining themes reflects the multilayered nature of narrative literature review research described by Juntunen and Lehenkari (2021).

Data were analyzed using qualitative thematic synthesis supported by descriptive comparison of the selected studies. The analytical process combined deductive and inductive coding. Deductive categories were initially developed from the research objectives and the conceptual structure established in the introduction, comprising changes in accounting practices, curriculum transformation, student competencies, technology-supported learning, AI opportunities and risks, professional judgment, and implications for introductory accounting. Inductive coding was subsequently used to identify additional patterns that emerged from the literature. The coded findings were organized in a spreadsheet-based analytical matrix and compared across publication year, research context, technology type, methodological approach, and major conclusions. Statistical meta-analysis was not performed because the reviewed studies differed substantially in research design, units of analysis, technological applications, educational settings, and outcome variables. Instead, emphasis was placed on identifying convergence, divergence, recurring themes, unresolved tensions, and gaps in the literature. Such synthesis is consistent with narrative review methodology, which seeks to move beyond isolated summaries toward an integrated explanation of the knowledge base (Schirmer, 2021; Sukhera, 2022). Particular attention was paid to tensions between the efficiency benefits of technology demonstrated in professional accounting settings, such as AI-supported auditing (Fedyk et al., 2022), and concerns that excessive technological dependence may weaken critical reasoning and the human dimensions of accounting education (Ballantine et al., 2024). Evidence concerning digital simulations (Sidorova et al., 2024), digital competence (Weli et al., 2024), curriculum modernization (Polimeni & Burke, 2021), and AI readiness (Abdo-Salloum & Al-Mousawi, 2025) was subsequently integrated to construct a thematic interpretation of how foundational accounting education is transitioning from procedure-centered instruction toward digitally supported conceptual, analytical, and judgment-oriented learning. This thematic and framework-oriented synthesis is also consistent with recommendations that review articles should organize fragmented literature around meaningful conceptual categories rather than merely reproduce sequential summaries of previous studies (Paul et al., 2021).

With regard to research ethics, the study relied exclusively on previously published academic literature and did not involve direct interaction with human

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participants, collection of personal information, experimental intervention, or access to confidential institutional data. Consequently, informed consent procedures and human-participant ethical clearance were not applicable to the literature review itself. Nevertheless, research integrity was maintained through accurate attribution of ideas, avoidance of fabricated or unverifiable references, transparent application of selection criteria, faithful representation of the original studies, and careful differentiation between findings reported by previous researchers and interpretations developed in the present review (Sugiyono, 2022; Sudaryono, 2021). Ethical considerations were particularly important because the subject itself concerns artificial intelligence in education, an area in which questions of academic integrity, responsible technology use, human judgment, and the reliability of AI-generated information have become increasingly prominent (Ballantine et al., 2024; Fachrurrozie et al., 2025). All sources included in the analytical corpus were therefore verified through their scholarly publication records and bibliographic identifiers where available. This procedure was intended to ensure that the resulting synthesis remained academically accountable while providing a transparent and replicable basis for explaining the changing landscape of introductory accounting in an increasingly AI-driven and digitalized environment.

RESULTS AND DISCUSSION

The literature screening and analytical procedure resulted in a final corpus of 15 core peer-reviewed studies published between 2021 and 2025. The temporal distribution of the selected publications indicates that research attention intensified during the later part of the review period. Three studies were published in 2021, two in 2022, three in 2023, five in 2024, and two in 2025. Thus, one third of the reviewed literature was published in 2024, coinciding with the rapid expansion of scholarly attention to generative artificial intelligence, digital accounting education, technology-oriented curricula, and the use of ChatGPT in higher education. The selected studies represented several research settings, including accounting students, accounting educators, university curricula, professional accountants, audit firms, and small and medium-sized enterprises. Methodologically, the corpus included quantitative surveys, qualitative investigations, mixed-method studies, case studies, curriculum analyses, conceptual and critical reviews, and studies of professional technology adoption. This diversity provided evidence on both the educational and professional dimensions of digital transformation in accounting.

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Table 1. Characteristics and Principal Findings of the Reviewed Studies

No.	Study	Main Focus	Principal Finding Relevant to the Review
1	Damerji and Salimi (2021)	AI adoption by accounting students	Technology readiness, perceived usefulness, and perceived ease of use were associated with students' willingness to adopt AI in accounting.
2	Polimeni and Burke (2021)	Digital technologies in accounting curricula	Emerging technologies and analytics can be systematically incorporated into undergraduate accounting curricula.
3	De Villiers (2021)	Future-ready accounting graduates	Future accounting education requires critical thinking, conceptual reasoning, communication, collaboration, ethical awareness, and lifelong learning in addition to technical competence.
4	Fedyk et al. (2022)	AI in professional auditing	AI adoption was associated with changes in audit efficiency, quality, and the organization of audit work.
5	Moore and Felo (2022)	Accounting technology education	Data analytics and other digital technologies were increasingly represented in accounting education, although integration differed across programs.
6	Arfaoui and Kammoun (2023)	Digitalization of accounting education	Digital accounting education revealed opportunities alongside limitations related to technological resources, skills, and interaction.
7	Jackson et al. (2023)	Technology skills of future accountants	Technology-related skills have become increasingly important for accounting graduates and early career professionals.

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8	Hamzah et al. (2023)	Cloud accounting adoption	Cloud-based accounting represents an expanding form of digital accounting practice influenced by organizational and technological factors.
9	Ballantine et al. (2024)	Generative AI and accounting education	Generative AI creates both opportunities and risks and raises questions concerning critical reasoning and the human dimensions of accounting education.
10	Weli et al. (2024)	Digital competence of accounting students	Digital competence was not uniform among accounting students, indicating the continuing presence of digital differences within the student population.
11	Sidorova et al. (2024)	Digital simulation in accounting education	Professionally authentic digital simulations supported students' perceived preparation for technical and broader professional activities.
12	O'Hara et al. (2024)	Technology-oriented accounting curriculum	Accounting programs are increasingly incorporating technology and data analytics into curricula and developing technology-oriented program structures.
13	Haugland Sundkvist and Kulset (2024)	ChatGPT in accounting education	Students recognized the usefulness of ChatGPT but also demonstrated differences in use, trust, and awareness of limitations.
14	Abdo-Salloum and Al-Mousawi (2025)	AI readiness in accounting curricula	Students generally demonstrated interest in AI adoption, while readiness was associated with technology-related perceptions and information capabilities.
15	Fachrurrozie et al. (2025)	AI use in Indonesian	Accounting educators were already using AI-related applications, including ChatGPT, while adoption was

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		accounting classes	accompanied by practical and ethical challenges.

The thematic coding generated five dominant and overlapping patterns across the literature. The most frequently identified pattern concerned curriculum and learning redesign, which appeared prominently in six studies. A second group of studies addressed AI adoption and technology readiness, while another substantial group examined digital competence, technological accessibility, and implementation conditions. Studies also documented digital transformation in professional accounting practice and the continuing importance of critical thinking, professional judgment, human competencies, and ethical awareness. Because the coding categories were non-mutually exclusive, individual publications could contribute to more than one theme. For example, research on AI adoption could simultaneously provide evidence concerning digital competence, curriculum readiness, and ethical challenges.

Table 2. Thematic Synthesis of the Reviewed Literature

Theme	Number of Studies With Prominent Evidence*	Representative Studies	Main Observed Pattern
Curriculum and learning redesign	6	Polimeni & Burke (2021); De Villiers (2021); Moore & Felo (2022); Jackson et al. (2023); Sidorova et al. (2024); O'Hara et al. (2024)	Accounting education is moving toward stronger integration of technology, analytics, professional applications, and broader competencies.
AI adoption and technology readiness	4	Damerji & Salimi (2021); Haugland Sundkvist & Kulset (2024); Abdo-Salloum & Al-Mousawi (2025); Fachrurrozie et al. (2025)	AI acceptance is evident but varies according to readiness, usefulness, ease of use, information capability, and user experience.

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Digital competence and implementation conditions	4	Arfaoui & Kammoun (2023); Weli et al. (2024); Abdo-Salloum & Al-Mousawi (2025); Fachrurrozie et al. (2025)	Access to technology does not necessarily imply equivalent digital competence or readiness to use technology effectively.
Transformation of professional accounting practice	3	Fedyk et al. (2022); Jackson et al. (2023); Hamzah et al. (2023)	AI, cloud systems, automation, and digital technologies are changing accounting processes and professional skill requirements.
Human judgment, critical thinking, and ethics	4	De Villiers (2021); Ballantine et al. (2024); Haugland Sundkvist & Kulset (2024); Fachrurrozie et al. (2025)	Technological competence must coexist with conceptual reasoning, critical evaluation, ethical awareness, and human judgment.

The thematic categories overlap; therefore, the total number of coded occurrences exceeds the number of studies included in the review.

The first substantive finding concerned the transformation of accounting work itself. The reviewed evidence consistently showed that activities traditionally associated with routine accounting procedures are increasingly supported by digital systems. Fedyk et al. (2022) documented the growing role of AI within auditing, while Hamzah et al. (2023) demonstrated the relevance of cloud accounting in contemporary organizational practice. Jackson et al. (2023) further identified technology-related capabilities as an increasingly important component of professional accounting competence. Across these studies, the common descriptive pattern was a movement away from accounting roles centered predominantly on repetitive processing toward work environments in which accountants interact with digital applications, automated processes, data, and technology-supported decision systems. The studies did not indicate that fundamental accounting knowledge had disappeared. Rather, the corpus showed that such

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knowledge increasingly operates within a technologically mediated professional environment.

The second major finding involved changes in accounting curricula and learning activities. Polimeni and Burke (2021) documented the integration of emerging accounting technologies and analytics into undergraduate accounting education, while Moore and Felo (2022) identified a broader movement toward data analytics and technology-oriented accounting programs. O'Hara et al. (2024) similarly reported increasing attention to technology and data analytics within accounting curricula. At the classroom level, Sidorova et al. (2024) showed that digital simulation could expose students to accounting activities within an environment resembling professional practice. Collectively, these studies revealed that curriculum transformation involved more than introducing isolated software applications. Changes extended to course content, learning activities, data analysis, technology exposure, and the competencies expected from accounting graduates. However, direct examination of these developments specifically within introductory accounting remained less common than research addressing accounting programs, advanced subjects, or the curriculum as a whole.

A third pattern concerned readiness to use AI and digital technologies. Damerji and Salimi (2021) found that students' willingness to adopt AI was associated with technology readiness and perceptions of usefulness and ease of use. This pattern remained visible in more recent evidence. Abdo-Salloum and Al-Mousawi (2025) reported generally favorable orientations toward AI adoption among accounting students, although adoption was associated with technological and informational capabilities. At the same time, Weli et al. (2024) identified differences in digital competence among accounting students, and Arfaoui and Kammoun (2023) documented technological, skill-related, and interaction-related constraints in digital accounting education. From the educator perspective, Fachrurrozie et al. (2025) found that AI-related applications were already being used in Indonesian accounting classes. The corpus therefore showed simultaneous technological adoption and uneven preparedness rather than a uniform transition across students, educators, and institutions.

The final descriptive pattern concerned the relationship between technological capability and human-centered accounting competencies. De Villiers (2021) identified critical thinking, conceptual reasoning, communication, collaboration, ethical awareness, and continuous learning as important attributes of future-ready accounting graduates. Ballantine et al. (2024) similarly placed critical reasoning and the human dimension of

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accounting education at the center of debates surrounding generative AI. Haugland Sundkvist and Kulset (2024) found that students perceived potential usefulness in ChatGPT but did not uniformly evaluate its limitations or possible consequences for learning. These findings were complemented by Fachrurrozie et al. (2025), whose study identified ethical and practical considerations accompanying AI adoption in accounting education. Accordingly, the literature did not present technological competence and traditional accounting competence as mutually exclusive categories. Instead, both appeared simultaneously within the emerging competence profile.

No statistical hypothesis testing was undertaken in the present study because the unit of analysis consisted of published literature rather than primary quantitative observations collected from respondents. Consequently, no p-values, t-tests, regression coefficients, or hypothesis acceptance decisions were produced. Similarly, no primary interview quotations or observational field notes were generated. The principal empirical output of the review was the thematic convergence across the 15 selected studies. Overall, the findings show that the changing landscape of introductory accounting can be summarized through four interconnected developments: the digitalization of professional accounting activities, the expansion of technology-oriented curriculum content, differences in student and educator readiness for digital and AI-supported learning, and the persistence of conceptual understanding, critical thinking, ethical awareness, and professional judgment as central elements of accounting competence.

Discus The findings of this review demonstrate that the changing landscape of introductory accounting is characterized by an increasingly close relationship between foundational accounting knowledge and digital capability. Across the reviewed literature, five interconnected patterns emerged: curriculum and learning redesign, AI adoption and technology readiness, differences in digital competence and implementation conditions, the transformation of professional accounting practice, and the continuing importance of critical thinking, ethical awareness, and professional judgment. Taken together, these findings indicate that digitalization is not eliminating the conceptual foundations of accounting but is changing the context in which those foundations are learned, applied, and evaluated. Technologies such as artificial intelligence, automation, cloud accounting, and data analytics increasingly perform or support routine accounting activities, while accounting education is simultaneously expanding toward technological and analytical competencies (Fedyk et al., 2022; Polimeni & Burke, 2021). At the same time, concerns about the limitations of AI and differences in students' digital competence indicate that technological integration cannot be treated as an uncomplicated

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substitution for traditional accounting learning (Ballantine et al., 2024; Weli et al., 2024). The overall pattern therefore suggests a transition from predominantly procedure-centered introductory accounting toward a model in which conceptual knowledge is retained but combined with digital literacy, analytical reasoning, verification skills, and informed professional judgment.

This transition can first be interpreted through the changing nature of accounting work. The findings indicate that accountants increasingly operate in environments where digital systems undertake transaction processing, information classification, reconciliation, analytical procedures, and other activities that were traditionally performed manually. Fedyk et al. (2022) provide empirical evidence that AI adoption within auditing is associated with improvements in efficiency and aspects of audit quality, while Hamzah et al. (2023) illustrate the growing relevance of cloud-based accounting for contemporary organizations. Jackson et al. (2023) similarly demonstrate that technological change is altering the skills expected from graduates and early career accountants. These developments do not imply that understanding debits and credits, transaction recognition, measurement, adjusting entries, or financial statements has become irrelevant. Instead, they change the educational function of such knowledge. When accounting procedures can be executed automatically, students require conceptual understanding not only to perform procedures themselves but also to interpret, challenge, and validate technology-generated outcomes. From this perspective, the value of introductory accounting increasingly lies in developing an explanatory foundation that enables students to understand why an accounting treatment is appropriate, rather than solely training them to reproduce the mechanical steps through which the treatment is produced.

The curriculum-related findings reinforce this interpretation and position introductory accounting within a broader movement toward digitally responsive accounting education. Polimeni and Burke (2021) demonstrate that emerging technologies and analytics can be deliberately integrated into undergraduate accounting curricula, while Moore and Felo (2022) show that data analytics and technology-related content have become increasingly visible across accounting programs. More recently, O'Hara et al. (2024) identified the continued development of technology-oriented accounting curricula, including closer connections between accounting education, analytics, and STEM-related capabilities. Sidorova et al. (2024) further demonstrate that digitally supported simulation can expose students to authentic professional activities and contribute to their perceived preparedness across technical, intellectual,

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organizational, and interpersonal dimensions. The present findings extend this literature by locating introductory accounting at the beginning of this curriculum transformation. Rather than postponing digital exposure until advanced accounting, auditing, or information systems courses, introductory courses may provide an appropriate foundation for gradually connecting basic accounting concepts with the technologies through which those concepts are increasingly operationalized. However, such integration should remain pedagogically sequenced so that technology supports conceptual development rather than obscures the underlying accounting logic.

Nevertheless, the findings also show that the successful integration of technology depends on learners' readiness and cannot be inferred simply from widespread access to digital devices. From a technology readiness and acceptance perspective, Damerji and Salimi (2021) found that accounting students' adoption of AI was related to technology readiness as well as perceived usefulness and ease of use. Abdo-Salloum and Al-Mousawi (2025) provide more recent support for this pattern, demonstrating that perceived usefulness, perceived ease of use, and information literacy contribute to AI adoption in accounting curricula. Importantly, their findings also suggest that basic digital literacy alone does not automatically produce stronger AI adoption. This result is particularly relevant when considered alongside Weli et al. (2024), who documented continuing differences in digital competence among Indonesian accounting students, and Arfaoui and Kammoun (2023), who identified technological resources, digital skills, and interaction as constraints in digitally mediated accounting education. These studies collectively challenge the assumption that current university students constitute a technologically homogeneous group. For introductory accounting, where learners are simultaneously encountering unfamiliar disciplinary concepts, poorly calibrated technological demands may increase rather than reduce learning difficulties. Effective digital transformation therefore requires attention to both accounting readiness and digital readiness, particularly during the foundational stages of the curriculum.

The increasing availability of generative AI further complicates this relationship because it creates educational opportunities while simultaneously reducing the effort required to produce apparently correct accounting outputs. The findings support the future-ready competence perspective proposed by De Villiers (2021), in which critical and conceptual thinking, communication, ethical consciousness, creativity, collaboration, and continuous learning become increasingly important in an environment shaped by automation and artificial intelligence. Ballantine et al. (2024) similarly argue that generative AI should not simply reinforce the longstanding technical orientation of

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accounting education, but should instead provide an opportunity to strengthen its critical and human dimensions. Evidence from Haugland Sundkvist and Kulset (2024) makes this issue particularly relevant at the student level. Although students perceived ChatGPT as potentially useful, their study showed that awareness of its possible negative implications for learning was less pronounced than awareness of its reliability limitations. In Indonesia, Fachrurrozie et al. (2025) further demonstrate that AI tools have already entered accounting classrooms while bringing practical and ethical challenges that educators must manage. These findings suggest that a central competency in contemporary introductory accounting should be the ability to evaluate AI-generated accounting information critically. Students should not only learn how to obtain an answer using technology, but should also be capable of determining whether that answer follows appropriate accounting principles, identifying possible errors, explaining the reasoning behind corrections, and recognizing circumstances in which professional judgment cannot responsibly be delegated to an automated system.

Accordingly, the review provides a substantive answer to the central research problem concerning how the purpose, content, competencies, and pedagogical orientation of introductory accounting should evolve in response to artificial intelligence and digitalization. The evidence suggests that the appropriate response is neither the preservation of a purely manual instructional model nor the wholesale replacement of foundational accounting procedures with automated technologies. Instead, introductory accounting should evolve toward a conceptually grounded and digitally augmented learning model. Theoretically, this finding connects research on technological transformation with literature on future-ready accounting competence by suggesting that digital capability and foundational accounting knowledge operate as complementary rather than competing domains. Technology changes how accounting knowledge is exercised, while conceptual understanding provides the basis for evaluating technological outputs (De Villiers, 2021; Jackson et al., 2023). From a practical perspective, curriculum designers could introduce technologies progressively after students have developed the corresponding conceptual foundations. Spreadsheets, cloud accounting applications, visualization tools, simulations, and generative AI could then be used for application, comparison, error detection, verification, and problem solving rather than merely for automating answers. Such an approach is consistent with evidence supporting technology-integrated curricula and authentic digital learning environments (Polimeni & Burke, 2021; Sidorova et al., 2024). It also implies that assessment should increasingly evaluate students' reasoning processes, interpretation

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of accounting information, and ability to verify digital outputs in addition to the accuracy of final numerical answers.

These conclusions should nevertheless be interpreted within the methodological boundaries of the study. The review was based on a purposively selected corpus of 15 peer-reviewed studies published between 2021 and 2025, and the reviewed studies varied considerably in geographical setting, research design, participants, technologies, accounting domains, and educational contexts. Such heterogeneity is valuable for identifying broad patterns, but it limits claims regarding causal relationships or universal effects. Moreover, relatively few studies examined introductory accounting as an isolated course, meaning that some conclusions were derived by synthesizing evidence from broader accounting curricula, management accounting, professional accounting practice, auditing, and technology adoption. This limitation reflects the interpretive nature of narrative synthesis, which is particularly useful for integrating fragmented and methodologically diverse knowledge but remains sensitive to literature selection and researcher interpretation (Juntunen & Lehenkari, 2021; Sukhera, 2022). An alternative explanation is therefore possible: some of the observed shift toward digital competencies may reflect temporary responses to the rapid emergence of generative AI rather than a fully stabilized transformation of introductory accounting education. Nevertheless, the convergence between professional evidence, curriculum studies, student readiness research, and critical analyses of AI suggests that the underlying transformation extends beyond a short-term technological trend (Ballantine et al., 2024; Abdo-Salloum & Al-Mousawi, 2025). Future empirical research should consequently test these propositions directly within introductory accounting courses, particularly through comparative studies of conventional and AI-integrated instruction, assessment of conceptual understanding and professional judgment, analysis across different levels of digital competence, and evaluation of students' ability to identify and correct erroneous AI-generated accounting outputs.

CONCLUSION

This study concludes that artificial intelligence and digitalization are reshaping introductory accounting by changing the professional environment, curriculum expectations, learning processes, and competency profiles associated with foundational accounting education. The synthesis of 15 peer-reviewed studies shows that the most appropriate response is not to replace basic accounting principles with automated technologies, but to develop a conceptually grounded and digitally augmented model in

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which accounting knowledge, digital literacy, analytical reasoning, critical evaluation of technology-generated outputs, ethical awareness, and professional judgment function as complementary competencies. These findings answer the central research question by demonstrating that introductory accounting should evolve from predominantly procedural instruction toward learning that enables students to understand, apply, verify, and critically evaluate accounting information in technology-mediated environments. Practically, accounting programs should introduce spreadsheets, cloud-based applications, simulations, data analytics, and generative artificial intelligence progressively after students establish essential conceptual foundations, while assessments should increasingly evaluate reasoning and verification rather than final answers alone. Nevertheless, the conclusions are limited by the purposive selection of 15 studies, heterogeneity in research settings and methods, and the relatively small number of studies focusing exclusively on introductory accounting. Future research should therefore employ broader systematic reviews and empirical comparative designs to examine conventional and artificial intelligence-integrated instruction, differences across levels of digital competence, changes in conceptual understanding and professional judgment, and students' ability to identify and correct erroneous technology-generated accounting outputs.

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