# A Scoping Review of Artificial Intelligence Integration into Accounting Teaching

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**Abstract:** This scoping review comprehensively explores how artificial intelligence (AI) is being incorporated into accounting education, examining the evolving educational setting and its potentially transformative impact on the development of future accounting professionals. Following the Arksey and O'Malley methodology and PRISMA-ScR guidelines, this review systematically synthesizes a diverse set of academic literature to determine major trends, new opportunities, and long-standing challenges of integrating AI into accounting pedagogical practices. Key findings demonstrate AI's transformative potential in enhancing student engagement, fostering deeper learning, aligning educational curricula with contemporary industry demands, and improving teaching efficiency through innovative tools and techniques. However, substantial challenges persist, including faculty preparedness, the complexity of curriculum redesign, resistance to change, and critical ethical considerations surrounding the use of AI in education. These findings emphasize the multifaceted nature of integrating AI into accounting pedagogy. The review emphasizes the need for cooperation between academia, industry practitioners, and policymakers to develop adaptive, forward-thinking pedagogical strategies and establish robust ethical frameworks. These efforts are essential to improve learners with the skills and competencies required to thrive in a dynamic, technology-driven professional environment.

**Keywords:** *Accounting education, artificial intelligence, AI integration, pedagogical innovation, scoping review.*

## Introduction

As accounting education transforms, the interplay between pedagogy and technological innovation has become increasingly pronounced. This shift prompts a critical examination of how artificial intelligence (AI) can be effectively integrated into accounting teaching practices. This scoping review explores the multifaceted implications of AI infusion into teaching accounting education by synthesizing a wealth of literature and research findings. The overarching goal is to provide a comprehensive overview of the evolving scenery of AI integration in accounting teaching and its potential impact on preparing future accounting professionals for a rapidly evolving industry. AI has ushered in a transformative era across various sectors, fundamentally altering how tasks and decisions are performed. In accounting, where precision, reliability, and adaptability are paramount, AI integration presents unprecedented opportunities and challenges. As AI technologies become increasingly sophisticated, the accounting profession is on the precipice of a paradigm shift, necessitating a corresponding evolution in accounting to prepare future professionals adequately (Pincus et al., 2017).

The accounting profession has faced a seismic shift over the last ten years, largely influenced by advancements in technology, necessitating a corresponding evolution in accounting education. Despite continuous calls within academia to adapt to the rapidly changing technological environment, there remains a noticeable gap in how accounting education integrates AI technologies (Andiola et al., 2020; Pincus et al., 2017; Rebele & Pierre, 2015; Watty et al., 2016). In a similar vein, Kavanagh and Drennan (2008) highlighted the importance of universities preparing learners with a broad set of skills, particularly in technology, to meet the demands of employers. This scoping review aims to expand on these discussions by examining the role of AI in bridging skill gaps and updating accounting education. The lack of technical skills development among accounting learners is a significant concern, especially given the rapid integration of advanced technologies like AI in the accounting profession. This gap emphasizes the necessity of revising the accounting curriculum

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to incorporate AI and other technological advancements, making sure graduates are not just prepared to meet current professional demands but are also prepared for the evolving terrain of the accounting field.

The urgency of this investigation is emphasized by the accelerating pace of the advancements in technology and how they are shaping accounting practices. The ubiquity of AI applications in financial management, data analytics, and auditing demands a proactive approach to integrating AI-related competencies into accounting curricula. Unless addressed, this could not only smother the success of accounting education but also restrict the professional relevance of future accountants further reducing their usability in the labor market (Christensen, 2018; Pincus et al., 2017). Furthermore, resistance to change among accounting educators poses an additional challenge, further reinforcing the need for curricular reforms that align with the evolving demands of the profession. Collaborative efforts between industry professionals and academia have emphasized the necessity of integrating AI-related skills into accounting curricula to prepare graduates for emerging roles such as data analysts, system designers, and IT auditors (Coyne et al., 2016). As the expectations of accounting professionals evolve, accounting education should adapt to empower learners with the requisite knowledge and skills to succeed in a technology-driven workplace (Kotb et al., 2019).

Furthermore, empirical evidence from diverse global contexts highlights the urgent need for changes in the accounting curricula to align with the evolving demands of the profession. Concerns have been raised regarding the adequacy of traditional teaching methods in preparing students for technological advancements reshaping the accounting terrain (Christensen, 2018; Pincus et al., 2017). Incorporating AI technology into accounting education holds promise for improving learning results and better-preparing learners for the challenges and opportunities presented by the evolving profession (Pincus et al., 2017). The primary research question guiding this review is: "How is AI transforming accounting education, and what are its effects on student learning outcomes, faculty readiness, and curriculum adaptation to industry demands?"

This review aims to contribute to the understanding of the current state of AI integration in accounting education by examining existing initiatives, methodologies, and outcomes. Through meticulously exploring literature, we seek to identify emerging trends, opportunities, and challenges that educators, policymakers, and researchers must grapple with in pursuing comprehensive and forward-thinking accounting education. By addressing these critical issues, this scoping review aspires to provide valuable insights and foster a collaborative approach to the future of accounting education.

This review article is structured into different main sections, each addressing crucial elements of AI integration in accounting education. Following the introduction, the methodology describes the structure of the scoping review, including study inclusion criteria, sources of data, and data analysis process. The results section offers thematic review outcomes on the integration of AI in curricula, preparation of faculty, student learning impact, relevance to industry, ethical considerations, and future research directions. The conclusion section discusses the findings of the review, explaining the implications of the findings for broader accounting education change, including curriculum reform, faculty development, and ethical adoption of AI. The practical implications section determines how the results affect key stakeholders including teachers, policymakers, and practice professionals. The recommendations section presents concrete plans to overcome established challenges and speed up AI deployment in accounting education. The limitations section identifies the research's constraints, and the future research agenda suggests key areas for future research to ensure the successful deployment of AI in accounting education. Finally, the references section lists all sources cited throughout the paper.

## Methodology

This section outlines the systematic approach taken to conduct a comprehensive scoping review on the infusion of AI into accounting education. The review follows a structured process to ensure the collection, evaluation, and synthesis of relevant literature, providing a thorough understanding of the current state, opportunities, and challenges associated with integrating AI into accounting teaching practices. The study employs a scoping review methodology, which is particularly suitable for mapping key concepts, types of evidence, and research gaps related to a broad topic area. The scoping review framework adopted for this study is based on the methodological guidance provided by Arksey and O'Malley (2005) and adheres to the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews) Guidelines (Tricco et al., 2018).

The articles were identified through comprehensive searches in various academic databases, including Google Scholar (50), ScienceDirect (30), Web of Science (30), Scopus (20), IEEE Xplore (20), SpringerLink (20), and ACM Digital Library (10), resulting in a total of 180 initial records identified. The search terms used included combinations of keywords such as "artificial intelligence," "accounting education," "AI in accounting," "expert systems," "intelligent tutoring systems," "robotic process automation," "blockchain in accounting," and "AI integration in education." Boolean operators (AND, OR) were utilized to refine the search and ensure a broad yet focused collection of articles. To ascertain the appropriateness and efficacy of the publications, particular specifications concerning inclusion and exclusion were followed. Articles published in peer-reviewed journals or conference proceedings, studies focusing on the incorporation of AI into accounting education, articles published between 1995 and 2024, and research providing empirical evidence, theoretical insights, or practical applications were included. The exclusion criteria involved omitting articles not written

in the English language, studies not directly related to accounting education, artificial intelligence, and duplicate articles across databases.

The screening process involved multiple stages. The study selection process began with the removal of 30 duplicated records, leaving 150 unique articles. Subsequently, the titles and abstracts of these articles were screened to examine their appropriateness, resulting in the exclusion of 90 articles that did not meet the inclusion criteria, leaving 60 articles for further review. The full texts of these remaining articles were then reviewed in detail, during which 38 articles were excluded due to a lack of direct relevance to AI in accounting education or insufficient empirical evidence. Ultimately, 22 articles were included in the final review, comprising 18 articles from journals and 4 from conference proceedings. Figure 1 below shows the percentage of studies included in the review while Figure 2 shows the distribution of studies across journals/conferences.
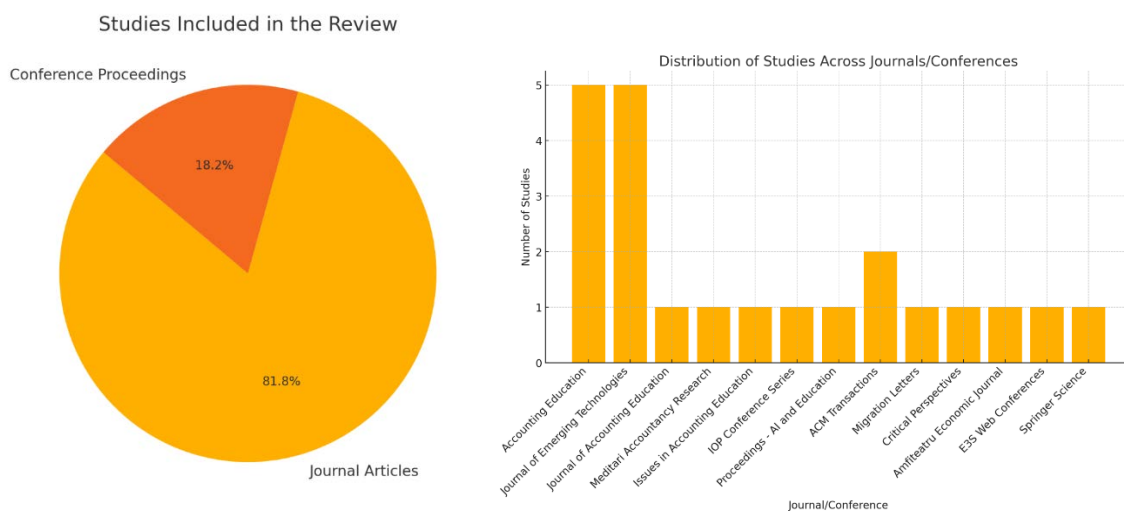


*Figure 1. Studies Included in Review Figure 2: Distribution of Studies Across Journals/Conferences*

To evaluate the quality of the studies included in this review, we utilized a simple checklist adapted from the Joanna Briggs Institute's Critical Appraisal Tools (Aromataris et al., 2024). This checklist included items on study design, methodological rigor, sample size, relevance to AI in accounting education, and strength of findings. Each study was classified as high, medium, or low quality; studies that had been rated as low quality were subject to further discussion before being included.

The PRISMA-ScR checklist was used to develop a standardized data extraction form to extract data systematically. Data extraction was carried out on bibliographic information, type of study, AI technologies discussed, findings, and recommendations for future research. The literature review showed different applications of AI in accounting education. For example, White (1995) indicated that expert systems can assist in developing an individualized learning experience, while Lymer (1995) stated that AI can offer interactive and adaptive learning environments. Also, Baldwin-Morgan (1995) stated that to incorporate AI, faculty development would be required along with curriculum updates. Similar recent works like Vincent et al. (2020) also advocated the inclusion of Robotic Process Automation (RPA) in accounting curricula by updating faculty about it and updating the curriculum accordingly. Qasim and Kharbat (2020) integrated AI, blockchain, and business data analytics to further establish the requirement for practical AI skills among students. Thematic analysis was done to categorize key findings such as pedagogical benefits, faculty training challenges, and institutional hurdles to AI adoption.

In ensuring the reliability of the screening process, two independent reviewers assessed the articles for inclusion or exclusion using the inclusion and exclusion criteria. Study selection was done in two stages: first, a title and abstract screening; second, a full-text assessment of the remaining articles. The studies' relevance was assessed independently by both reviewers, and discrepancies were then resolved after discussions. This review is based on the guidelines laid down for conducting scoping reviews by Arksey and O'Malley (2005) and further expanded upon by Levac et al. (2010) and Tricco et al. (2018). Inter-rater reliability was established by using Cohen's Kappa coefficient ($\kappa$) to determine the level of agreement between the two independent reviewers.

Commonly used in systematic and scoping reviews, Cohen's Kappa provides a measure of the consistency of decisions beyond chance (McHugh, 2012). Out of 150 unique articles screened, reviewers agreed on 20 for inclusion and 126 for exclusion, with disagreements in 4 cases. Of these, 2 were inclusion-exclusion mismatches and the other 2 were exclusion-inclusion mismatches. After resolving the disagreements through discussion, this review included a total of 22 articles. In effect, Cohen's Kappa turned out to be $\kappa=0.89$, reflecting an almost perfect agreement for the interpretation scale suggested by Landis and Koch in 1977. It reassures reliability in the consistency of article selection with minimal probability of biased selection for study inclusion. This systematic approach ensures that the selected articles

comprehensively cover the evolving discourse on AI infusion into accounting education, providing a robust foundation for analysis and discussion. Figure 3 below shows the selection process of data included in the study.
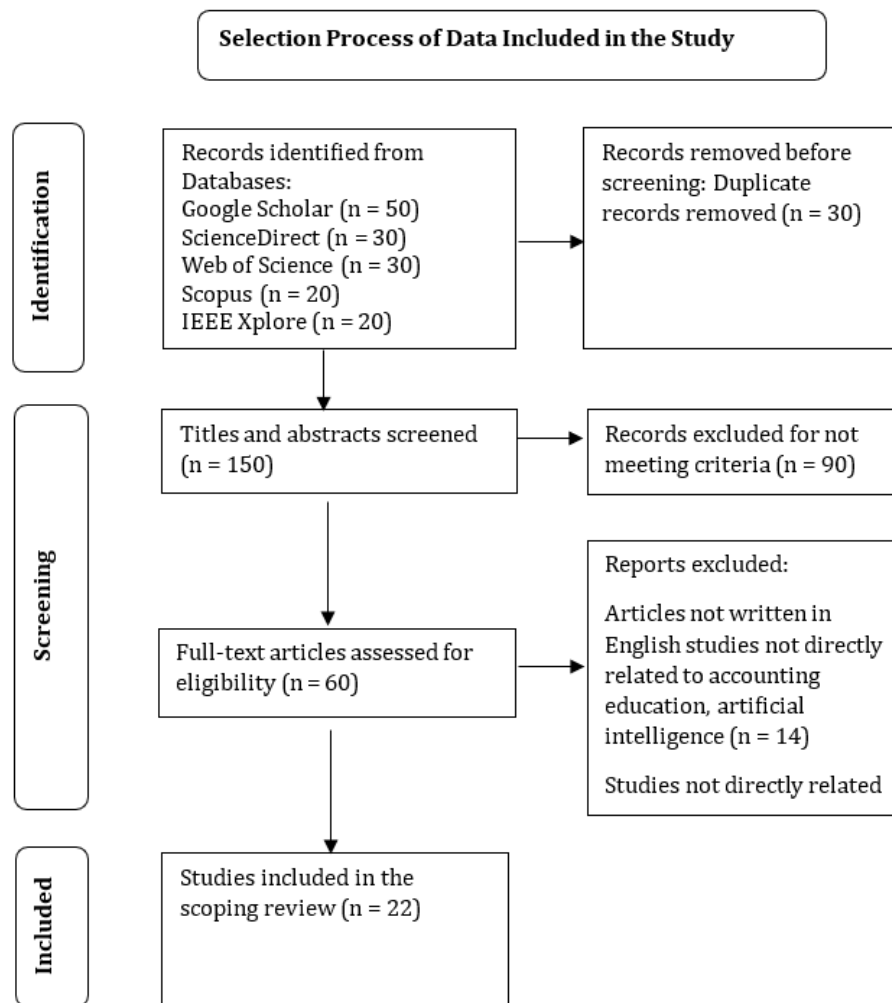
**Selection Process of Data Included in the Study**

**Identification**

| Records identified from Databases: Google Scholar (n = 50) ScienceDirect (n = 30) Web of Science (n = 30) Scopus (n = 20) IEEE Xplore (n = 20) | → | Records removed before screening: Duplicate records removed (n = 30) |

**Screening**

| Titles and abstracts screened (n = 150) | → | Records excluded for not meeting criteria (n = 90) |

| Full-text articles assessed for eligibility (n = 60) | → | Reports excluded: Articles not written in English studies not directly related to accounting education, artificial intelligence (n = 14) Studies not directly related |

**Included**

| Studies included in the scoping review (n = 22) |

*Figure 3. Selection Process of Data Included in the Study*

## Results

This scoping review includes 22 studies focusing on the role that AI can serve in accounting education, from which 18 are journal articles and 4 are conference proceedings. The results reveal six dominant themes: AI integration into curricula, faculty training and readiness, AI's impact on student learning, alignment with industry demands, ethical concerns, and directions for future research. These themes provide an overview of how AI is influencing accounting education, exhibiting the opportunistic and challenging aspects of AI implementation.

*Research Publication Trends*

An analysis of publication trends shows that research on AI in accounting education primarily appears in peer-reviewed journals, reflecting significant academic interest in the field. Among the 22 reviewed studies, 18 are journal articles, demonstrating scholarly rigor, while 4 studies are conference proceedings, highlighting ongoing professional discussions.

The journal articles reviewed include works by Ballantine et al. (2024), Brown et al. (1995), Damerji and Salimi (2021), De Villiers (2021), Guomin (2019), Holmes and Douglass (2022), Johnson et al. (2009), Li and Zhao (2022), Lopes and Oliveira (2022), Ng (2023), Qasim and Kharbat (2020), Qasim et al. (2022), Romero-Carazas et al. (2023), Simuţ et al. (2024), Tandiono (2023), Vincent et al. (2020), C. Zhang and Vasarhelyi (2022), and A. Zhang and Zhao (2022).

The reviewed conference proceedings include research presented by Baldwin-Morgan (1995), Lymer (1995), White (1995), and L. Zhang et al. (2021). The inclusion of studies from the 1990s, particularly those by Baldwin-Morgan, Lymer, and White, illustrates that discussions on AI in accounting education are not new but have gained momentum in recent years due to rapid technological advancements and the increasing adoption of AI in professional accounting practices.

Figure 4 below shows trends in AI research and Accounting Education while Figure 5 shows the thematic categorization of reviewed studies.
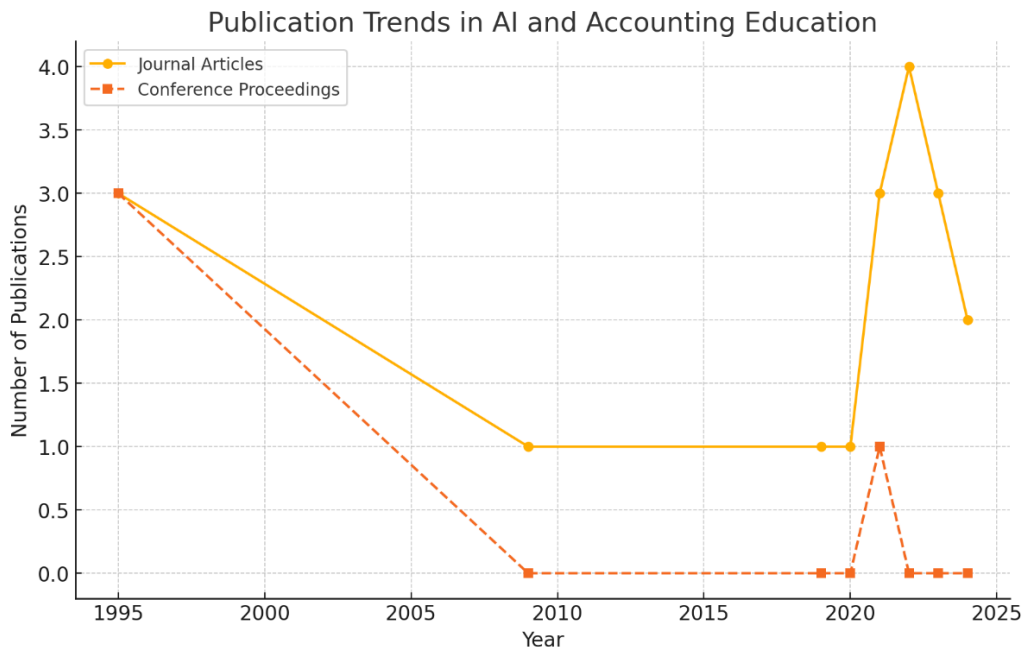


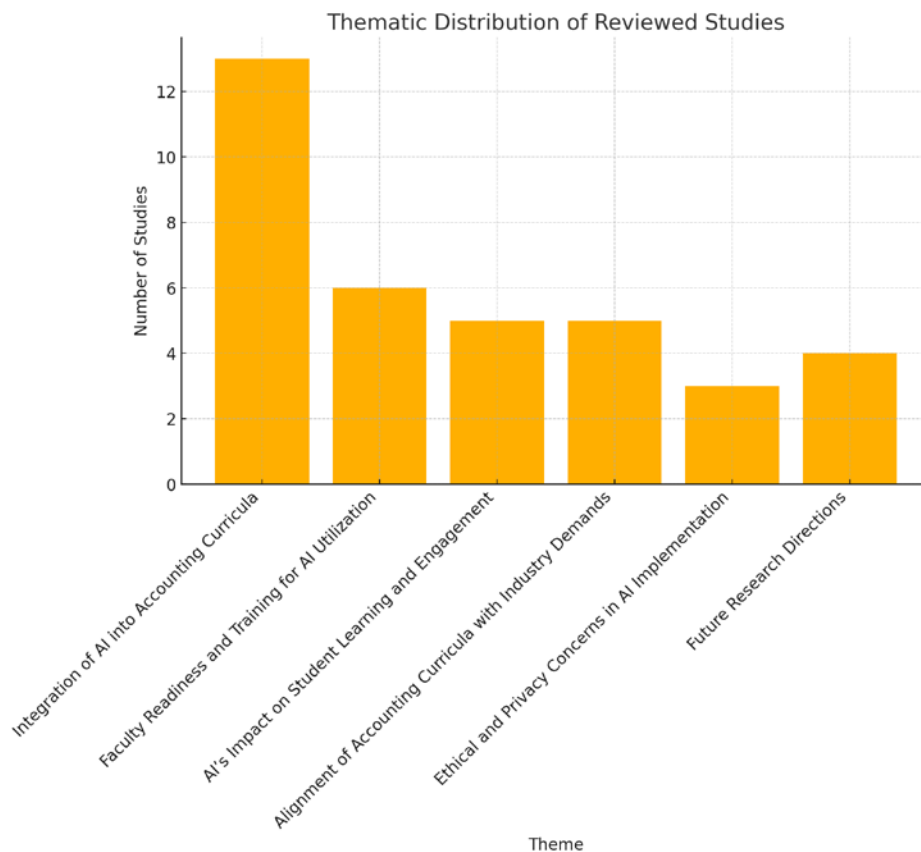*Figure 4. Trends in AI Research and Accounting Education*



*Figure 5. Thematic Categorization of Reviewed Studies*

Table 1 below presents the thematic categorization of AI in Accounting Education. These include the integration of AI into the accounting curriculum, faculty readiness, and training for AI utilization, AI's impact on student learning and engagement, alignment of accounting curricula with industry demands, ethical and privacy concerns in AI implementation, and future research direction.

*Table 1. Thematic Categorization of AI in Accounting Education*

| Theme | Relevant Studies | Focus Areas | Key Findings | Challenges | Recommendations |
|---|---|---|---|---|---|
| **Integration of AI into Accounting Curricula** | Baldwin-Morgan (1995); Brown et al. (1995); Damerji and Salimi (2021); Holmes and Douglass (2022); Johnson et al. (2009); Li and Zhao (2022); Lopes and Oliveira (2022); Lymer (1995); Qasim et al. (2022); Romero-Carazas et al. (2023); Vincent et al. (2020); White (1995); L. Zhang et al. (2021) | AI integration in curricula, automation, AI-driven decision-making, fraud detection | AI enhances automation, decision-making, and analytical skills | Lack of AI-focused courses, slow adoption by universities | Curriculum reform with AI-focused courses, hands-on AI learning, industry-academic collaboration |
| **Faculty Readiness and Training for AI Utilization** | Ballantine et al. (2024); Holmes and Douglass (2022); Li and Zhao (2022); Lopes and Oliveira (2022); Ng (2023); Simuţ et al. (2024) | Faculty preparedness, AI training programs, institutional barriers | Faculty AI knowledge is limited, retooling is expensive | Faculty resistance, lack of institutional funding, insufficient AI training resources | Structured faculty development programs, AI teaching resources, university-industry partnerships |
| **AI's Impact on Student Learning and Engagement** | Li and Zhao (2022); Ng (2023); Romero-Carazas et al. (2023); Simuţ et al. (2024); A. Zhang and Zhao (2022) | AI-assisted learning, engagement, personalized learning | AI improves student engagement, learning flexibility, and retention | Unequal access to AI tools, lack of digital literacy | Investment in AI-based learning tools, inclusive access to AI resources |
| **Alignment of Accounting Curricula with Industry Demands** | Holmes and Douglass (2022); Lopes and Oliveira (2022); Qasim and Kharbat (2020); Qasim et al. (2022); Vincent et al. (2020) | AI competencies for employability, industry-academic alignment | AI skills are crucial for employability, industry demands AI literacy | Curricula lag industry demands, mismatch in AI competencies | Regular curriculum updates, collaboration with AI firms, internship programs with AI exposure |
| **Ethical and Privacy Concerns in AI Implementation** | Ballantine et al. (2024); Holmes and Douglass (2022); Li and Zhao (2022) | AI ethics, transparency, privacy, job displacement | AI raises transparency issues, algorithmic bias, and job displacement risks | Ethical concerns, lack of regulatory policies, risk of AI replacing accountants | Ethical AI education, establishment of regulatory frameworks, AI governance guidelines |
| **Future Research Directions** | Ballantine et al. (2024); Damerji and Salimi (2021); Qasim et al. (2022); Romero-Carazas et al. (2023) | Future AI adoption, regulatory needs, and long-term AI impacts | Research needed on AI's long-term role in accounting education | Limited empirical studies, lack of AI adoption case studies | Empirical AI studies, AI-driven pedagogy research, industry collaboration in AI education |

*Integration of AI into Accounting Curricula*

Most of the studies highlight the need to integrate AI into accounting programs to match the technological innovations revolutionizing the accounting field. Thirteen studies centre on this topic, highlighting the importance of AI in automating accounting work, enhancing decision-making processes, and preparing students for AI-powered accounting environments (Baldwin-Morgan, 1995; Brown et al., 1995; Damerji & Salimi, 2021; Holmes & Douglass, 2022; Johnson et al., 2009; Li & Zhao, 2022; Lopes & Oliveira, 2022; Lymer, 1995; Qasim et al., 2022; Romero-Carazas et al., 2023; Vincent et al., 2020; White, 1995; L. Zhang et al., 2021).

Holmes and Douglass (2022) emphasize the revolution in accounting curricula brought about by AI, stating that *"the growth of AI technology will change the focus of accounting curriculums to include specialized computer skills"* (p. 62).

Similarly, Damerji and Salimi (2021) point out a gap between industry expectations and the current state of education, stressing that *"while multinational accounting firms have invested heavily in technology innovations, accounting education has not kept pace. The existing accounting curricula at universities worldwide lack courses in AI technologies that effectively prepare accounting students for changes in the industry"* (p. 108).

Vincent et al. (2020) highlight the significance of AI integration, particularly in (RPA), arguing that *"RPA is poised to change the accounting and auditing workplace significantly. Therefore, the accounting curriculum quickly needs to adapt to educate accountants of the future in this skillset"* (p. 75). Romero-Carazas et al. (2023) also provide additional support for these with a focus on how AI contributes to accounting education and professional practice development, in that *"incorporating AI into accounting education will help accountants in many ways, including automating and making accounting tasks more accurate, driving more informed decision-making, contributing to business growth and profitability, and detecting fraud."* (p. 352-353).

Li and Zhao (2022) opined that the rapid development of AI calls for curriculum adaptation, arguing that *"the rapid development of artificial intelligence technology requires corresponding changes in the education industry to meet the needs of accounting practice." (p. 11).* In the same way, Lopes and Oliveira (2022) highlight that students must be assisted so that they acquire technical competencies and analytical skills, since *"there is an urgent need to adapt and change the current courses in the computer and linguistic areas. The academic path must guarantee accountants the technological skills to exercise their function and the bases of knowledge that will allow them to evolve."* (p. 8). All these studies emphasize the imperative for incorporating AI into accounting education to equip graduates with technical skills, automation expertise, and AI-enabled analytical skills to deal with the shifting demands of the accounting profession.

*Faculty Readiness and Training for AI Utilization*

Effective integration of AI in accounting education is significantly dependent on faculty preparedness and the availability of well-designed training programs. There are six studies themed around this, highlighting the challenges of instructors in adopting AI-based pedagogical methods, the need for professional development programs, and institutional challenges in integrating AI into accounting curricula (Ballantine et al., 2024; Holmes & Douglass, 2022; Li & Zhao, 2022; Lopes & Oliveira, 2022; Ng, 2023; Simuț et al., 2024). Ng (2023) points out the importance of systematic training of faculty in adopting AI, noting that *"the fifth step involved instructor training using the selected software. Each software vendor provides various resources, including free training videos, lecture slides, and notes."* (p. 228). However, faculty development is at times limited by resource and institutional factors, limiting faculty access to AI training. Holmes and Douglass (2022) refer to these barriers, explaining that *"retooling is expensive both in terms of the cost of technology for universities and the time and energy for faculty members to gain new skills."* (p. 64).

Ballantine et al. (2024) express digital literacy gap worries concerning accounting faculty members and question *"how much ICT awareness has really absorbed into accounting education in universities, and whether and how much this has changed the fundamentals of both the core accounting curriculum and the ways the discipline is taught."* (p. 5). Similarly, Lopes and Oliveira (2022) reinforce that the refusal of AI incorporation by instructors typically results from unknowingness to tools of AI, confirming that *"there is an urgent need to adapt and change the current courses in the computer and linguistic areas. The academic path must guarantee accountants the technological skills to exercise their function and the bases of knowledge that will allow them to evolve."* (p. 8).

Li and Zhao (2022) concur on the necessity of massive faculty training schemes, asserting that *"the rapid development of artificial intelligence technology requires corresponding changes in the education industry to meet the needs of accounting practice."* (p. 11). Meanwhile, Simuț et al. (2024) advocate for long-term faculty development courses to maintain staff in advanced AI functionalities to adequately educate AI-embedded curricula. These works collectively indicate funding faculty development and training to deploy AI effectively across accounting education. In the absence of properly educated educators, AI-driven curricula impact will be limited, and learners will fail to maximize technology-driven innovations revolutionizing the field of accounting.

*The Impact of AI on Student Learning and Engagement*

AI tools are increasingly transforming the learning processes of students by making learning more interactive, flexible, and retaining knowledge. Five studies explain how AI facilitates personalized learning, interactive pedagogical approaches, and improved academic performance (Li & Zhao, 2022; Ng, 2023; Romero-Carazas et al., 2023; Simuț et al., 2024; A. Zhang & Zhao, 2022).

Li and Zhao (2022) highlight that AI-based learning environments allow for greater flexibility, noting that *"blended learning gives greater flexibility which means being able to complete assignments any place and any time. It successfully improves students' experience and enhances their engagement"* (p. 1). In like manner, A. Zhang and Zhao (2022) explore AI-assisted multimedia tools, emphasizing their effectiveness in increasing student engagement, participation, and information retention through interactive learning features. They note that *"AI-assisted multimedia features such as sophistication, imagination, and interactivity improved teaching styles, strengthened student interest in learning, increased student participation, and increased information memory"* (p. 1).

Ng (2023) explores the application of AI in accounting graduate schools, showing how AI-based case studies and real-world projects result in deeper learning. AI not only reinforces theoretical comprehension but also acquaints students with industry-level tools that are fast becoming a necessity in modern accounting practice. Romero-Carazas et al. (2023) also contribute to the revolutionary potential of AI in accounting education, arguing that *"incorporating AI into accounting education will help accountants in many ways, including automating and making accounting tasks more accurate, driving more informed decision-making, contributing to business growth and profitability, and detecting fraud."* (p. 352-353).

Also, Simuţ et al. (2024) highlight AI's capability to adapt learning content to suit unique learners, facilitating adaptive learning strategies that address varying speeds of learning as well as learning styles. Such adaptability increases students' engagement by offering them more effective and customized learning processes. These studies collectively suggest the expanding role of AI in developing dynamic, interactive, and effective learning environments within accounting education. Not only does the incorporation of AI augment the knowledge grasp and learning outcomes among students but also equips graduates with skills necessary for AI-integrated accounting professions.

### Alignment of Accounting Curricula with Industry Demands

The increasing embrace of AI by the accounting sector has created a disconnection between employer needs and education curricula, necessitating the alignment of education programs with evolving technology. Four studies address this issue, emphasizing the imperative of equipping students with skills that are AI-related to cater to the demands of employers (Holmes & Douglass, 2022; Lopes & Oliveira, 2022; Qasim et al., 2022; Qasim & Kharbat, 2020; Vincent et al., 2020).

Holmes and Douglass (2022) highlight the challenge teachers face in keeping pace with evolving technology, noting that *"it is inherently problematic to develop curricula that will prepare students for where the profession will be in the future in a rapidly changing profession."* (p. 55). The above observation places into context the imperative need for continuous curriculum updating to keep up with AI-facilitated developments in the accounting profession. Qasim et al. (2022) stress the necessity for accounting education to incorporate AI competencies, noting that *"graduates who lack AI-related competencies may struggle to meet employer expectations in the evolving digital economy."* (p. 166). This agrees with Vincent et al. (2020), who also advocate for enhanced industry-academia collaboration, with the rationale that experiential learning experiences and exposure to practical AI usage are critical in equipping students for AI-facilitated accounting careers.

Lopes and Oliveira (2022) further solidify this idea through an appeal for a systematic, recursive process in accounting curriculum updates so that AI-centered skills are the core of accounting education. Their research highlights the way skills such as data analysis, AI-based auditing, and automation are needed for the industry and need to be embedded within accounting courses to make students industry fit. Together, these studies reaffirm the necessity of making accounting curricula industry-sensitive so that graduates possess AI-impacted technical and analytical capabilities to succeed in modern-day accounting professions. Neglecting to integrate these advancements into programs risks preparing accounting graduates with a level of competence that is not capable of addressing the future of AI-driven financial services.

### Ethical and Privacy Concerns in AI Implementation

The application of AI in teaching accounting raises ethical as well as privacy concerns, including data protection, openness, job substitution, and prejudice in algorithms. Three studies review these concerns and emphasize the importance of ethical frameworks, regulative norms, and institutional safeguards in mitigating AI-related harms (Ballantine et al., 2024; Holmes & Douglass, 2022; Li & Zhao, 2022). Holmes and Douglass (2022) raise concerns about AI transparency, warning that *"many AI systems are 'so complicated that even the engineers who designed [them] may struggle to isolate the reason for any single action.'"* (p. 55). The problem of transparency is a fundamental ethical issue when considering AI decision-making in professional accounting practice and accounting education. Li and Zhao (2022) discuss the impact of AI on job displacement, noting that *"the application of artificial intelligence technology in accounting and auditing reduces the demand for talents in the simple and repetitive accounting business, and further increases the supply contradiction of accounting students in the job market."* (p. 10). This means that automation using AI can cause labour imbalances, and schools need to reconsider the role of traditional accounting education.

Ballantine et al. (2024) also highlight the importance of considering ethics when embracing AI, and the authors claim that with further incorporation of AI into accounting practices, the need for ethical education programs that prepare students to tackle the ethical considerations of AI-driven decision-making increases. The study affirms the necessity of crafting regulatory rules concerning the potential biases, misuse, and unintended consequences of AI on financial reporting and auditing. These studies emphasize the need for ethical recommendations, faculty sensitization to the ethics of AI, and policy actions to encourage that AI grows and does not compromise the integrity of accounting teaching and practice. Without ethical guidelines, AI adoption can enhance biases, compromise responsibility, and cause workforce instability in the accounting profession.

*Future Research Directions*

The developing role of AI in accounting education requires ongoing research and development, especially in the areas of curriculum design, regulatory standards, and long-term empirical research on AI's effects. Four studies outline research areas with a focus on the necessity of new pedagogical models, ethical standards, and inter-disciplinary collaboration (Ballantine et al., 2024; Damerji & Salimi, 2021; Qasim et al., 2022; Romero-Carazas et al., 2023). Qasim et al. (2022) stress the necessity of engaging industry experts and teachers to design AI-based curricula, since *"future studies should explore the views of accounting professionals, practitioners, and educators to develop a conscientious accounting curriculum that revitalizes accounting education."* (p. 166). This reflects that collaborative research is needed to bridge the gap between industry needs and academic training.

Damerji and Salimi (2021) emphasize that there needs to be a deeper investigation into the implementation of AI technologies in teaching accounting, stating that *"More specifically, future research should explore specific AI technologies and methods that universities may consider implementing within their accounting curricula."* (p. 126). This illustrates how the analysis and assessment of AI-enabled tools become inevitable in identifying ways they might enhance the methodology of teaching, student engagement, and industry preparedness in accountancy courses. All these studies complement each other on the imperative importance of ongoing research on AI use in accounting education, especially for curriculum adjustment, faculty readiness, ethical regulation, and student outreach. Future work should focus on creating an extensive framework for the integration of AI so that accounting education with the use of AI is relevant, inclusive, and responsive to professional needs.

## Conclusion

Findings from this scoping review highlight the transformative impact of AI in accounting education to necessitate curriculum change, faculty alignment, and innovative student learning outcomes. AI technologies such as RPA, machine learning, and intelligent tutoring systems are increasingly being used in accounting education to stay ahead of an ever-evolving digital landscape. These developments bring numerous opportunities, most significantly the automation of repetitive accounting tasks, improving decision-making, and the development of analytical capabilities in students. However, the results also reveal significant challenges, foremost among them being resistance from instructors, ethical considerations, and investment requirements for institutions to train individuals with AI capabilities.

One of the prevailing themes among the reviewed studies is the imperative to integrate AI into accounting curricula to keep up with industry demand and offer pertinent training. Several studies opined that AI is a necessity in modern accounting but has been tardy in making its way into university curricula. AI can enhance financial decision-making and anti-fraud activities (Romero-Carazas et al., 2023), but since Holmes and Douglass (2022) observe that accounting programs must be revamped to provide field-specific computer skills and AI instruction to prepare graduates for employment, failure to implement AI in accounting education can render graduates less employable in the AI-driven work environment (Vincent et al., 2020). Yet, curriculum change needs more than theoretical integration of AI ideas, it calls for practical experience, experiential AI training, and immediate applications of AI in accounting reporting and auditing to equip students with ready-for-the-job skills (Damerji & Salimi, 2021).

Despite the recognized benefits of AI integration, instructor readiness is a significant obstacle to its use in accounting education. Most instructors lack the technical competence to teach AI-based courses, and thus there is reluctance to implement AI-based pedagogy (Ng, 2023; Simuț et al., 2024). In addition, institutional constraints prevent the ability to undertake gigantic faculty development programs because Holmes and Douglass (2022) observe that it is expensive and time-consuming to train faculty with AI skills. In the absence of training programs, teachers can end up not providing students with substantial AI-based learning experiences, thereby compromising the effectiveness of AI-driven curricula. In response to these challenges, scholars have proposed comprehensive faculty training programs, academia-industry collaborations, and financial investment in AI pedagogy tools to provide instructors with the tools required to facilitate AI-enabled learning (Ballantine et al., 2024; Li & Zhao, 2022).

The review further emphasizes the role of AI in student learning and engagement, where AI-powered learning environments facilitate greater flexibility and personalization in teaching accounting. AI-supported tools provide adaptive learning strategies, customized teaching, and interactive experiences that enhance student engagement and retention (Li & Zhao, 2022; A. Zhang & Zhao, 2022). Multimedia technology powered by AI has been shown to raise learner engagement in learning and promote critical thinking skills, resulting in an improved learning experience (Romero-Carazas et al., 2023). In addition, Ng (2023) brings to light the ability of AI to expose students to real-life applications of AI-powered accounting technologies, making them more prepared for data-driven decision-making in a working environment. However, equitable access to AI-based learning resources is an issue because inequalities in technology could lead to disparities in the performance of students.

Another major issue observed in this review is the mismatch between accounting education curricula and industry demands. Employers increasingly seek AI-related skills graduates, but many university programs have yet to include training in AI in their programs (Qasim et al., 2022; Vincent et al., 2020). Holmes and Douglass (2022) caution that it is challenging to develop curricula that consider future industry needs due to the fast pace of the technology revolution. To

address this, Lopes and Oliveira (2022) recommend increased participation of accounting institutions and universities such that students would have hands-on experiences with AI applications in auditing, financial reporting, and risk assessment. Strengthening these industry-academic linkages is needed so that graduates are appropriately prepared for the AI-driven accounting profession.

Other than pedagogical and technical concerns, the review also refers to ethical and privacy concerns around the implementation of AI in accounting education. The decision-making process of AI is typically imperceptible, and this causes issues with accountability and transparency (Holmes & Douglass, 2022). Second, concerns surrounding job replacement have been there since the process automation by AI decreases the necessity for entry-level accountants to handle repetitive work (Li & Zhao, 2022). These concerns should be addressed by the establishment of ethical principles and regulatory guidelines to inform AI application in accounting practice and education. In addition, researchers urge the integration of AI ethics training in accounting programs to equip students with the capabilities to manage ethical dilemmas in AI-enabled financial decision-making (Ballantine et al., 2024).

With the evolving character of AI in accounting instruction, future research is required to determine best practices in AI course design, measure long-term learning outcomes, and establish regulatory norms. Qasim et al. (2022) propose that future research engage accounting professionals, instructors, and students as co-creators of AI-themed curricula that combine technical, ethical, and analytical abilities. In addition, Damerji and Salimi (2021) emphasize the need for additional studies on specific AI technologies and how universities can effectively integrate them into accounting programs, further stating that "future research should examine specific AI technologies and approaches that universities might implement in their accounting curricula" (p. 126).

AI presents challenges and opportunities for accounting education. The use of AI tools and methods has great potential to enhance student learning, automate accounting activities, and link curricula more directly with industry demands. These outcomes, however, rely on the overcoming of challenges related to training faculty, ethical concerns, and investment in AI assets within institutions. Universities in the future must ensure AI-focused curriculum reforms, build stronger industry associations, and foster the ethical application of AI to develop accounting graduates' skills for a profession based on AI. Resolving these issues through intentional reforms and continuous research, accounting education can evolve to realize the potential of AI as much as to mitigate its accompanying risks.

*Practical Implications*

The use of AI in accounting education has important implications for a broad array of stakeholders, including universities, instructors, students, accounting practitioners, and policymakers. For universities, AI adoption necessitates modifying their curriculum to include AI-enabled courses, data analytics, and emerging technologies. Universities must also invest in AI infrastructure and partner with industry stakeholders to bridge the gap between theoretical knowledge and practical uses. Also, for educators, AI implementation must be accompanied by structured professional development initiatives that enhance digital literacy and AI competencies. Universities must provide AI-specific training, workshops, and peer learning experiences to equip teachers with the necessary competencies.

To the learners, AI-supported learning ecosystems optimize engagement and flexibility, delivering interactive, personalized learning experiences. However, to become employable, the learners must gain AI-related competencies such as data-driven decision-making, automation, and AI ethics. For industry practitioners, AI proficiency among accounting graduates guarantees a supply of industry-competent talent that can serve changing industry needs. Industry and academia should interact to equip students with real-life AI experience via internships, case studies, and collaborative research efforts. For policymakers, AI deployment in education necessitates ethical and regulatory frameworks for tackling issues such as job loss, data protection, and bias in algorithms. Policies must see to it that AI is integrated responsibly and equitably in learning environments.

## Recommendations

To implement AI in accounting education successfully and overcome the identified challenges, the following are proposed:

- The universities need to incorporate AI-related skills, including machine learning, data analysis, and robotic process automation, into accounting curricula so that the graduates become industry-ready.

- Institutions of higher learning must provide faculty with AI-specific training programs, technical support, and exposure to AI-based teaching practices to increase adoption and effectiveness.

- AI-integrated platforms should be included in accounting learning to facilitate adaptive learning, automation, and instantaneous feedback, increasing student engagement.

- Accounting firms and tech companies need to partner with universities to give students practical experience with AI through internships, workshops, and sponsored courses.

- Policymakers ought to create rules for accountable AI use in accounting education, guaranteeing ethical decision-making, openness, and equitable AI uses.

- Additional empirical research is needed to examine the long-term impact of AI on accounting education, the efficacy of AI-driven learning strategies, and best practices in curriculum design.

## Limitations

This review is bound by several limitations. Selecting 22 studies, though thorough, cannot record everything that has been written regarding AI and accounting education. The variation in methodologies across the various studies makes comparison challenging because there are studies built on qualitative observation and others using quantitative data. Also, the rapid expansion of AI technologies renders some findings outdated within a very short time, hence the need to carry out constant research. Finally, institutional constraints like faculty resistance, budget restrictions, and inadequate training are unexplored to date. It is essential for future research to bridge these knowledge gaps to allow the successful integration of AI in accounting education.

*Future Research Agenda*

Based on the findings of the research conducted in this study, additional research should concentrate on areas under each theme to promote AI integration within accounting education.

- Studies need to investigate the efficacy of AI-integrated course designs in improving the competency of students so that curricula adhere to industry developments.

- Research should investigate how formal faculty training programs affect the adoption of AI and instructional effectiveness, overcoming resistance from faculty members and low AI skills.

- Longitudinal research needs to be conducted to ascertain whether AI-driven learning platforms improve critical thinking, decision-making, and long-term ability in students.

- Future studies need to analyse employer requirements for AI-driven competencies so that accounting graduates can be equipped with relevant industry competencies.

- Research should be anchored on moral principles of AI openness, algorithmic fairness, and replacing jobs to facilitate the ethical application of AI in accounting education.

- Research must analyse AI adoption challenges and best practices at different universities and countries to develop scalable models of AI-powered accounting education.

## Authorship Contribution Statement

Wale-Fadairo: Played a central role in developing the manuscript by conceptualizing the framework, conducting an extensive review of relevant literature, and drafting the initial version. She ensured that the manuscript's content aligned with the study's objectives and effectively synthesized the findings. Ige: Provided thorough proofreading and editorial input, enhancing the manuscript's intellectual depth and coherence. He critically reviewed the arguments, refined the presentation of ideas, and validated the final draft for accuracy and readiness for submission.

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