THE DEVELOPMENT STRATEGIES FOR ACCOUNTING EDUCATION IN ARTIFICIAL INTELLIGENCE ERA

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Abstract: ***Along with clarifying definitions of artificial intelligence (AI) in the context of accounting, the research focuses on both impacts of artificial intelligence on accounting education and propose development strategies of accounting education in the background of AI. To achieve the objectives of the study, this article used a qualitative approach that involved a systematic previous literature review to synthesise relevant published books and journals towards understanding the influences of AI on accounting education as well as viable remedies of accounting education in the age of AI. This study uniquely contributes to hot academic debate on the impact of the integration of AI into accounting education.***

• Keywords: *accounting education, artificial intelligence, challenges, opportunitues, artificial intelligence in education.*

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1. Introduction

The rapid advancement of artificial intelligence (AI) has profoundly impacted countless professions, including accounting. With capabilities in machine learning, natural language processing and big data analytics, AI has opened spectacular opportunities to enhance the efficiency and quality of accounting work. Hence, studies have shown that the "Big 4" accounting firms - KPMG, PwC, EY, and Deloitte -have heavily invested in technological innovation and are using AI in various ways in accounting and auditing (Tandiono, 2023). Undoubtedly, AI performs a number of daily professional tasks of accountants. According to the McKinsey Global Institute (2023), approximately 50% of activities in the accounting sector could be automated through AI technologies in the next decades. The report also notes that AI will not only replace manual tasks but also transform the role of accountants from record-keepers to analysts and strategic advisors. Evidently, with its ability to process information accurately and handle large databases, AI reduces errors and enhances data analysis efficiency. The combination of human intelligence and AI capabilities promises to elevate the accounting profession, contributing to improved business performance and economic growth.

Notwithstanding, accountants are subjected to numerous challenges like job displacement, requirements for advanced technological skills and continuous training, ethical and data security concerns, investment costs and technological barriers. To harness AI as a powerful support mechanism rather than allowing it to become a threat to the profession training programs that equip accounting students with core knowledge and soft skills in the context of AI adoption in accounting activities are essential. Hence, the urgent need to prepare accounting workforces equipped with appropriate skills becomes incredibly vital in the current context.

The advances in adopting AI in accounting practices and improvement in AI's ability in answering accounting questions call for changes in accounting education to embrace AI. There are already attempts to incorporate AI into accounting education. However, there remains limited understanding of the extent to which accounting scholars have examined its implications for accounting education. Moreover, the rapid advancement of technology and the increasing adoption of AI in accounting sector have led employers to favour graduates who possess strong technological competencies, including AI-related skills. Furthermore, the degree to which current Vietnamese accounting education aligns with

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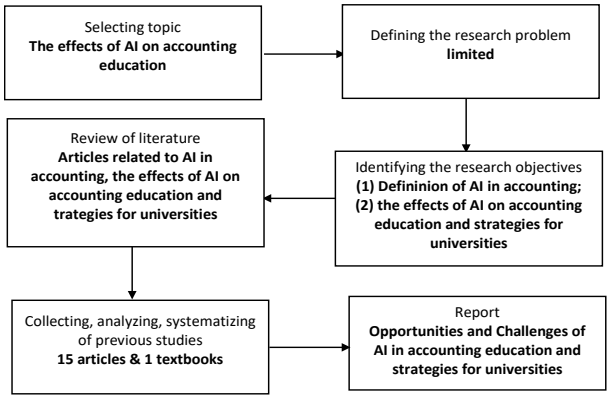
these evolving industry expectations remains unclear. To bridge this gap, this study aims to examine impacts of AI on accounting education consisting of both challenges and opportunities. Based on that, the research proposes viable strategies for universities regarding accounting education in the era of AI.

2. Research methodology

The articles were identified through comprehensive searches in various academic databases, including Google Scholar, ScienceDirect, Web of Science, and Scopus, resulting in a total of 37 initial records identified. The search terms used included combinations of keywords such as "artificial intelligence," "accounting education," "Challenges," "opportunities," and "AI integration in education.

After reading the related materials, 15 articles and 1 textbooks were chosen that fit with the aims of the present issues about definitions of AI in accounting, effects of AI on accounting education as well as viable remedies for accounting education at universities. The research process is described as Figure1 below:

Figure 1: The research process



Source: Created by the author

3. Research findings

3.1. Defininions of artificial intelligence in accounting

Beryl Odonkor et al., (2023) stated that Artificial Intelligence (AI) in accounting encompasses a wide range of technologies that are fundamentally reshaping how financial information is processed, analyzed, and utilized. Rather than simply automating routine tasks, AI represents a profound shift in the way organizations manage financial data and make strategic decisions. At its core, AI in accounting refers to the application of machine learning, natural language processing, and other advanced computational techniques to enhance and streamline accounting operations. These technologies enable accountants to analyze vast amounts of financial data with exceptional speed and precision, offering insights that would be difficult or even impossible to obtain using traditional methods. The integration of AI in accounting also extends to robotic process automation (RPA), which automates repetitive and routine tasks. RPA in accounting can handle tasks like data entry, reconciliation, and report generation, freeing up human accountants to focus on more strategic activities.

Machine learning, a crucial subset of AI, plays a particularly transformative role. It involves algorithms that learn from historical data to make predictions and informed decisions. In accounting, machine learning models are widely used for tasks such as fraud detection, risk assessment, and financial forecasting (Zakaria, 2021). As these models continually refine their accuracy through exposure to more data, they produce increasingly reliable and meaningful analyses, thereby enhancing the quality of financial decision-making.

Natural language processing (NLP) is another critical component of AI in accounting. NLP technologies enable computers to understand, interpret, and generate human language. In the context of accounting, NLP is used to analyze unstructured financial data, such as reports and documents, facilitating more efficient data processing and compliance monitoring (Kovalenko et al., 2021).

3.2. The impact of artificial intelligence on accounting education

Recent studies indicate that integrating AI technologies into accounting education not only enhances learning outcomes but also equips students more effectively to meet the evolving demands of the accounting profession. According to Lan Zhang et al. (2021), for decades, traditional accounting education has functioned as the principal conduit for preparing qualified professionals. Yet, the advent of the artificial intelligence (AI) era has triggered a stark divergence between the skills cultivated through conventional training and those demanded by today's digital economy.

The practice of manual ledger entry is now unequivocally antiquated, while mastery of computerized accounting systems has become indispensable. Unfortunately, the trajectory of current accounting curricula has not kept pace with these technological innovations, resulting in educational frameworks that lag markedly behind the evolving professional landscape. In this context, the structural deficiencies of existing programs are both evident and concerning. The study indicated that in an era where AI, big data, and financial sharing have become the defining pillars of corporate finance, academic curricula remain paradoxically stagnant.

Despite these technological shifts, manual accounting continues to occupy a disproportionately large share of practical coursework in universities. While it is true that many institutions have initiated the digitization of instruction by integrating accounting softwares, this effort is insufficient. Critical, cutting-edge concepts like Shared Financial Centers and intelligent robotic process automation are notably absent from the student syllabus. If educational institutions fail to align their programs with the contemporary pace of industry evolution, graduates will face significantly inflated learning costs upon entering the workforce, as they will require extensive retraining. Furthermore, this misalignment heightens the risk of post-graduation unemployment and diminished professional competitiveness. Ultimately, such failures erode the institution's societal standing, perpetuating a vicious cycle of reputational decline.

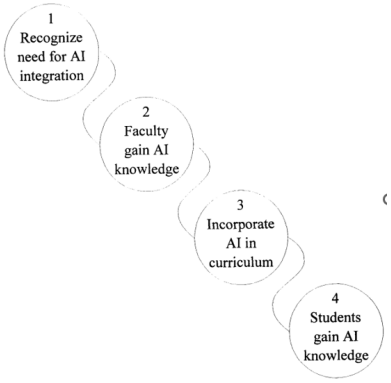
IFAC indicates that AI exerts a profound influence on accounting students by enabling them to access unprecedented knowledge and skill sets, thereby enhancing the overall effectiveness of the learning process. Traditional classrooms often struggle to address the individual learning needs of students due to time limitations and large class sizes. However, AI can continuously analyse data and deliver personalized learning experiences by identifying students' weaknesses, detecting areas where they face difficulties through diagnostic assessments, and providing additional practice tailored to those specific needs. The integration of AI into accounting and auditing training, while highly promising, also presents several notable challenges. One major concern is that AI systems may inadvertently reinforce biases embedded in their training data, potentially leading to unfair or unreliable outcomes. It is also argued that although AI can significantly enhance the training process, it might simultaneously foster an excessive level of dependence among learners. Furthermore, the use of AI raises serious questions regarding data privacy and security, prompting educators and institutions to reconsider how sensitive information is collected, stored, and protected.

3.3. The development strategy of accounting education in the context of AI

The use of AI in accounting education has important implications for a broad array of stakeholders, particularly universities. Several remedies should be taken into serious account to address the challenges in accounting education.

For universities:

Figure 1. Steps for integrating AI into the accounting curriculum



Source: Brown et al., 1995

- Integrating artificial intelligence into the accounting curriculum: Universities should update accounting curricula to include AI concepts, AI applications in accounting, data analytics, and programming. Alongside technical improvements, soft skills such as critical thinking, teamwork, communication, and natural language processing should be reinforced. Ethics education already central to the accounting profession must also be updated to address issues arising from AI use. Four steps can be followed to integrate AI into the curriculum (Figure 1). First, faculty must recognize the need for AI integration, that is, the need for future accountants to become familiar with AI. Second, faculty must become informed about AI. One of the biggest barriers

to change is the lack of accounting educator knowledge about AI. Third, knowledgeable professors and departments can then intelligently implement appropriate changes to the accounting curriculum. Fourth, the enlightened professors and the changes in the curriculum will affect student knowledge about AI.

- Strengthening teacher training in the era of artificial intelligence: Teachers constitute the core strength of higher education institutions and serve as the primary guarantee of quality in accounting education. In the rapidly evolving era shaped by new technological waves, colleges must continue to enhance teacher development and training. Students' access to up-to-date knowledge depends largely on how quickly teachers can acquire and master emerging concepts. Therefore, colleges should remove the disciplinary barriers that exist between different courses, enabling financial accounting teachers to gain expertise in management accounting and vice versa, thereby improving the overall quality of instruction across both fields. Moreover, educational institutions should organize training programs that bring together all faculty members to study intelligent, information-based accounting systems, with the goal of building an interdisciplinary teaching team equipped with advanced, technology-driven knowledge.

- Strengthening corporate partnerships*:* universities should organize dialogue sessions, seminars, and guest lectures with industry professionals. Internship opportunities must be expanded to provide real-world experience. Business feedback should inform curriculum development, and training agreements should be established to ensure graduate competencies align with employer expectations. Along with that, Furthermore, institutions should actively invite distinguished professors, successful entrepreneurs, and seasoned practitioners to deliver lectures and share their industry insights, thereby guaranteeing that both faculty and students remain abreast of the latest trends in the accounting sector. Consequently, modern concepts such as artificial intelligence and big data can be effectively integrated into the curriculum of every semester.

- Changing appraisal methods: It is vital to emphasize the integration of theory and practice. Obviously, the current appraisal method, which combines routine performance with a final examination to determine the student's final grade, often results in a deficiency of practical experience and neglects the cultivation of comprehensive student qualities. In contemporary society, given the rapid proliferation of Artificial Intelligence (AI), the accounting industry now necessitates a significantly higher standard of comprehensive competency from its practitioners. Therefore, the format for calculating students' final grades should be redesigned, specifically by reducing the weighting of final exam scores and incorporating practical application. This entails constructing a multivariate grading system composed equally of theoretical knowledge and practical skill. Furthermore, students' acquisition of necessary professional qualification certificates such as those in basic accounting, registered accountancy, and tax can be incorporated as part of the overall performance evaluation. Professional knowledge competitions should also be factored into the assessment process.

- Enhancing learning resources and self-Study capacity: The university should equip students with AI-related software, online learning platforms, and accounting tools to promote experimentation and independent research. Self-study is essential in an AI-driven environment. Competitions and project-based learning activities should be organized to encourage applied research and knowledge integration

For lecturers

Transforming pedagogical models and embracing innovation are crucial as AI becomes increasingly integrated into education. In many universities, accounting instruction still relies heavily on basic presentation software, a practice that often results in slow and ineffective knowledge absorption among students. A forward-looking approach requires adopting a new perspective specifically, establishing an informatized teaching platform that enhances accessibility for learners. Such a platform can deliver course materials, lectures, and assignments directly to students' mobile devices through web-based systems or dedicated applications.

Furthermore, incorporating incentive

mechanisms, such as a barrage-style real-time comment and reward system, promotes immediate interaction between teachers and students across multiple digital environments. This innovative model not only enables students to track their academic performance conveniently but also significantly increases their motivation and engagement. From the instructor's standpoint, these platforms, supported by Big Data analytics, provide comprehensive insights into students' backgrounds, learning attitudes, and mastery of course content. As a result, teachers can refine their instructional strategies and gradually build a repository of more effective teaching practices. Ultimately, this collaborative, data-driven process facilitates continuous improvement for both educators and learners.

4. Conclusion

Based on the aforementioned facts, it can be inferred that AI has transformed a wide range of industries, including accounting. Although interest in the influence of AI on the accounting profession has grown rapidly, there remains limited clarity regarding the extent to which this topic has been explored within accounting education. Against this backdrop, the study investigates influences of AI on accounting education. This study uniquely contributes to hot academic debate on the impact of the integration of AI into accounting education. The study's findings potentially to provide accounting educators, and other similar driplines, with valuable insights to optimize the potential of AI in fostering education quality in the context of AI.

The paper focus on clarifying viable solutions for Vietnamese universities to educate accounting workforces effectively in the age of AI regarding related parties, particularly universities. Integrating artificial intelligence into the accounting curriculum and enhancing teacher training are crucial steps to modernize education. In addition, enriching learning resources, strengthening corporate partnerships, and innovating assessment methods collectively help learners develop stronger practical skills. These measures ensure that training programs remain relevant and responsive in the AI-driven era.

Future research could prioritise the development and implementation of more contemporary accounting curricula, particularly those that integrate emerging technologies such as artificial intelligence. This may involve examining the effectiveness of various pedagogical approaches for embedding AI into accounting education, as well as identifying strategies that can better engage students with AI-related tools and concepts.

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