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CHAPTER 15

ARTIFICIAL INTELLIGENCE AND HIGHER EDUCATION IN ACCOUNTING: IMPACTS, CHALLENGES AND POTENTIALITIES

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ABSTRACT

The research discusses Artificial Intelligence (AI) and higher education in Accounting, notably with regard to the impacts, challenges and potentialities. As for the methodological aspects, the research is characterized as qualitative and uses an integrative literature review to support the discussions. Thus, it was found that the incorporation of AI in higher education, especially directed to the Accounting Sciences course, has significant effects, especially with regard to the personalization of teaching and the automation of repetitive tasks, such as data analysis and financial auditing as well as the automation of routine tasks, including cost calculations, financial audits and analysis of financial statements. In addition, the personalization of teaching, facilitated by AI tools, allows students to have access to content adapted to their needs. It was also observed that the incorporation of AI tools in educational practices results in dynamic teaching, adapted to individual needs, promoting an active and personalized learning environment. However, there are challenges such as the need for continuous training of teachers and the adequacy of institutional infrastructures, as well as the pedagogical and ethical implications arising from their implementation. Even in the face of such important challenges, the potential of AI in Accounting education includes improving decision-making, predicting financial trends, and personalizing the learning experience, factors that can transform accounting education and prepare future professionals for a more technological and reality-aligned job market.

Keywords: Accounting. Higher education. Artificial Intelligence (AI). Technological Innovations. Disruptive Technologies.

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INTRODUCTION

Artificial Intelligence (AI) has been the subject of studies in various areas and purposes over the years, and its impact on education, especially higher education, is not recent. Since the first edition of the *International Conference on Artificial Intelligence in Education (AIED)* in 1989, discussions on the incorporation of AI in the educational process have evolved, culminating in the celebration of the 25th edition of this conference in 2024 (AIED, 2024). In this context, there is a growing movement towards the use of AI in higher education, which brings not only challenges, but also opportunities for a more dynamic and personalized education.

AI is synonymous with intelligent systems that can automate tasks traditionally performed by humans. (Akgun; Greenhow, 2021; Bankins; Formosa, 2023). It can be defined as the branch of computer science that seeks to simulate intelligent behavior in computers, with the aim of imitating and improving human capacity (Akgun; Greenhow, 2021; Ballantine; Boyce; Stoner, 2024; Jia; Sun; Looi, 2023). The applications of AI in education have the potential to redefine traditional pedagogical practices, promoting new ways of teaching and learning (Celik *et al.*, 2022; Jia; Sun; Looi, 2023; Stroparo *et al.*, 2024). These disruptive technologies allow, for example, the personalization of the teaching experience, the increase of student engagement, and the improvement of academic results.

While the use of AI in education has received more attention and visibility recently, it is important to note that its full implementation still faces considerable challenges. The lack of adequate infrastructure and the need for continuous teacher training are pointed out as the main obstacles to an effective integration of these technologies in the educational environment (Stroparo et al., 2024). In order for institutions to fully reap the benefits of AI, it is essential that investments are made in teacher training and the modernization of educational infrastructures (UNESCO, 2021). In addition, UNESCO has been a relevant actor in the formulation of guidelines on the ethical use of AI in education. In 2023, for example, the organization published global recommendations for the application of generative AI, with the aim of guiding institutions and governments in adopting policies that promote the responsible and inclusive use of this technology in pedagogical practices (UNESCO, 2022). Such guidelines are essential to ensure that the development of AI in education occurs in an ethical manner and in line with the principles of inclusion, transparency, and diversity.

In this way, the research focuses on the applications of AI in higher education in Accounting, whose objective is to explore the convergence between Artificial Intelligence

(AI) and higher education in Accounting, highlighting the impacts, challenges and potentialities of this integration in the educational context.

THEORETICAL FRAMEWORK

The theoretical framework of this study covers fundamental concepts and definitions about Artificial Intelligence and its application in the teaching of Accounting Sciences. As discussed by Zawacki-Richter *et al.* (2019), AI emerged in the 1950s and has evolved to include a variety of technologies and methods such as data mining and natural language processing, being described as the ability of digital systems to perform tasks that normally require human intelligence. (Akgun; Greenhow, 2021; Pordeus; Stroparo, 2021; Stroparo, 2024; Stroparo *et al.*, 2024; Stroparo; Hrycyna, 2024; (Stroparo; Bochniak, 2024)

Regarding the educational context, AI can offer significant support for both teachers and students. Tavares, Meira, and Amaral (2020) highlight that although AI has the potential to revolutionize education, its implementation must be carefully planned to avoid replacing the role of the teacher and ensure that technology is used to complement and not replace human interaction.

A document published by the *World Economic Forum and The Boston Consulting Group* entitled "*New vision for education"* points out that people's skills and knowledge must reflect the new reality and, within this context, sixteen skills were identified, called twenty-first century skills necessary for the future workforce (Chaudhry; Kazim, 2022). Among the skills mentioned are technological knowledge, communication, leadership, curiosity, adaptability, etc. With the accelerated digital transformation of recent years and the focus on continuous learning in most professional careers, these skills are becoming necessary for students (Chaudhry; Kazim, 2022; Chen *et al.*, 2022) Other skills pointed out by the study refer to competencies (critical thinking, creativity) and character qualities (persistence, curiosity) (World Economic Forum; The Boston Consulting Group, 2015).

Theoretically, the research can be related to the theories of Jürgen Habermas, especially with regard to communication and technological rationality. Habermas discusses how technologies can influence the teaching-learning process, highlighting the need for authentic communication between those involved in the educational process, aiming at the emancipation of individuals through education.

In this sense, the incorporation of AI in pedagogical practices can be seen from the perspective of technological rationality and must be balanced by communicative rationality, ensuring that the interaction between teachers and students, mediated by technologies, is not reduced to automated processes, but promotes a meaningful dialogue (Habermas,

1984). Furthermore, the digital transformation in education, supported by AI, must be conducted in a critical and reflective way, as Habermas suggests in the theory of communicative action. In the educational context, this implies that the adoption of AI technologies must be carefully evaluated so as not to alienate educators and students from the broader goals of education, such as critical and emancipatory training (Habermas, 1987).

In addition to the theoretical alert that came with Habermas' writings, the application of AI in the teaching of Accounting Sciences can transform the way knowledge is transmitted and acquired and technology can provide advanced tools for data analysis, performance evaluation and personalization of learning, however, careful planning is needed to integrate these tools in a way that helps improve the quality of teaching and prepare students to the realities of the labor market, without compromising the interaction and the fundamental role of the educator (Souza, 2014).

Accounting in Brazil has a long history, with its roots dating back to the colonial period, historical records indicate the practice of accounting since the time of the Portuguese expeditions and the need to control raw materials and goods. The formalization of accounting in Brazil began with the creation of the Casa dos Contos in 1679 and the officialization of commerce classes in 1809 (Portari et al., 2023). The influence of accounting schools of thought, especially the Italian ones, has evolved over the years, with the adoption of accounting principles and professional regulation, culminating in Law 6.404 of 1976 (Reis; Silva, 2007)

Dealing specifically with the Pedagogical Project of the Course (PPC) of Accounting Sciences at UNICENTRO – Advanced Campus of Prudentópolis – it is verified that it is structured in accordance with the National Curriculum Guidelines and aims to train professionals with a solid theoretical and practical knowledge, the required skills include the mastery of information technologies, such as AI, for analysis and generation of accounting information. CNE/CES Resolution No. 1, of March 27, 2024, highlights the importance of preparing students to use contemporary technologies, including big data and data analysis, to stand out in the job market (BRASIL, 2024).

In this sense, UNESCO (2019) suggests that teachers include new methodologies in their practices aimed at contributing to dynamic and efficient learning.

The table below presents some pedagogical methods that can be transformed with AI. The examples listed below illustrate practical implementations of these methodologies, showing how AI can be integrated into everyday educational life to meet the demands of the contemporary market.

In the table below, pedagogical practices that can be adopted by teachers in the exercise of their functions are listed:

Table 1. Pedagogical Practices x Artificial Intelligence

Teaching method	Description	Proposed Innovation	Example
Adaptive Learning	Systems that adjust content based on individual performance.	Personalizes teaching, offering reinforcement or specific challenges.	Platforms like Knewton.
Continuous Formative Assessment	Constant evaluation of student performance with real-time feedback.	It replaces one-off evaluations with continuous analyses.	Data analysis tools to identify patterns of errors.
AI-Based Gamification	Use of game mechanics to engage students.	Customizes challenges according to learning objectives.	Accounting simulators with AI.
Blended Learning and Flipped Classroom	It combines online study with face-to-face practical activities.	AI monitors individual progress and suggests additional materials before classes.	Platforms like Coursera.
Virtual Tutoring	Virtual assistants that assist students with questions and assignments.	24/7 availability for personalized support.	Chatbots like ChatGPT integrated into educational platforms.
Simulations and Scenario-Based Learning	Simulated environments to apply theories in real situations.	It generates immersive experiences that develop practical skills.	AI-based financial audit simulations.
Intelligent Collaboration	Tools that promote collaborative projects and monitor individual contribution.	AI offers insights and suggests improvements in collaboration.	Slack or Microsoft Teams with AI integration.
Competency-Based Learning	Focus on developing practical skills rather than linear content.	AI identifies skills gaps and recommends specific activities.	Digital credential systems that map acquired skills.
Predictive Analytics and Early Intervention	AI predicts academic difficulties and proposes interventions before problems.	Offers personalized support and reduces the risk of churn.	Ferramentas de Learning Analytics.
Integration of Soft Skills in Teaching	Assessment and development of interpersonal skills, such as communication and teamwork.	AI monitors interactions and provides feedback on social-emotional skills.	Platforms like Humantic AI.

Fonte: adapted from Unesco, (2019)

The table shows some pedagogical practices that can be implemented with the help of AI tools.

METHODOLOGY

The research is characterized by a qualitative approach, based on an integrative literature review whose objective was to identify and synthesize the main studies and findings related to the application of AI in higher education in accounting, focusing on the impacts, challenges and potentialities. The justification for the adoption of such a methodology is based on the fact that it is an ongoing research.

Thus, searches were carried out for scientific articles in the Web of Science, Scopus and ScienceDirect databases with the following descriptors: "Artificial Intelligence in Education," "AI in Higher Education," "Digital Transformation in Accounting Education," "Sustainable Education Practices," and "Educational Innovations with AI." The inclusion criteria included articles published in peer-reviewed journals, studies that discuss the application of AI in higher education, particularly in the accounting area, publications in English or Portuguese, and both current and classic research, the latter being defined as those with a significant number of academic citations, ensuring the relevance and timeliness of the data. Texts that addressed digital transformation and educational practices in higher education were prioritized. Articles that did not directly address AI in the educational context, duplicate publications, and studies with insufficient methodology or inconclusive data were excluded.

RESULTS AND DISCUSSIONS

It is possible to assess the relevance of the insertion of technologies in higher education, notably with regard to accounting. The results of this investigation indicate that the adoption of Artificial Intelligence (AI) in accounting education promotes a more interactive and personalized learning environment, as suggested by similar studies by Stroparo et al. (2024). According to these authors, the integration of disruptive technologies such as AI has the potential to optimize educational processes, increasing student engagement and facilitating the understanding of complex concepts.

Recent studies, such as that by Zawacki-Richter et al. (2019), also point to the benefits of AI in higher education, highlighting the personalization of learning and immediate feedback as factors that contribute to the development of students' skills (Akgun; Greenhow, 2021; Ballantine; Boyce; Stoner, 2024; Jia; Sun; Looi, 2023).

Research conducted by Stroparo et al. (2024) highlights that, although AI offers significant opportunities, its implementation in the educational context faces challenges such as the need for adequate technological infrastructure and teacher training. Finally, the present research also hopes to confirm the central role of AI in preparing accounting students for the contemporary job market, as suggested by Celik et al. (2022). The ability to deal with big data, data analysis, and emerging technologies will be an important differential for professionals in the field, as anticipated in the guidelines of CNE/CES Resolution No. 1, of March 27, 2024 (Brasil, 2024).

Dealing specifically with the accounting area and its specificities, the following are examples of the application of AI tools:

Table 2. Pedagogical Practice for the Accounting Course

Pedagogical Practice	Description	Benefits	Practical Example
Audit Simulations	Use of AI to simulate financial audits, allowing students to apply concepts in scenarios close to reality.	It develops practical skills in auditing, preparing students for market challenges.	Software such as ACL Analytics and IDEA for real-time audit simulations.
AI Cost Analysis	Platforms that use AI to calculate and analyze costs based on real or simulated data.	Improves accuracy and understanding of cost calculations in different business contexts.	Use of tools such as Power BI with AI for detailed analysis of costs and margins.
Gamification in Accounting Scenarios	Creation of games that challenge students to make strategic accounting decisions, with feedback from AI.	It increases engagement and facilitates learning through interactive practices.	Business simulators, such as Marketplace Live, with AI integration for accounting feedback.
Customization of Tax Studies	Systems that adjust tax content according to individual performance and difficulties.	It ensures that students have a solid foundation in tax studies, with a focus on areas of greater difficulty.	Platforms such as Thomson Reuters ONESOURCE for personalized study of tax regulations.
Financial Results Forecast	AI applied to financial trend forecasting, using historical data and advanced simulations.	Modern forecasting techniques, essential for management accounting.	Use of AI in systems such as QuickBooks or Xero for predictive financial analysis.
Virtual Tutoring in Accounting Standards	Chatbots specialized in accounting standards, assisting in the interpretation and application of regulations.	Provides continuous and flexible support for learning accounting standards.	Chatbots integrated into platforms such as SAP and Oracle Cloud for queries on financial standards.
Automated Accounting Analysis	Automation of complex accounting calculations and analysis of balance sheets, reducing the time required for repetitive tasks.	It reduces errors in calculations and allows students to focus efforts on interpreting results.	Tools like Alteryx and IBM Watson for automating financial reports and balance sheets.
Real-Time Monitoring of Financial Statements	Tools that allow students to monitor changes in financial statements and perform critical analysis.	It encourages critical analysis and monitoring of financial metrics in real time.	Dynamic analysis with Google Data Studio or Tableau for monitoring accounting reports.
Identifying Tax Risks with AI	AI identifying patterns that indicate tax risks in simulated or real financial data.	It promotes awareness of tax risks and the practical application of solutions.	Applications like Avalara for tax compliance analysis and identifying inconsistencies.
Case Studies in Forensic Accounting	Analysis of real cases of accounting fraud, with the help of AI to investigate and propose solutions.	It strengthens investigative reasoning and the ability to solve complex problems.	Use of software such as CaseWare IDEA to investigate and reconstruct accounting fraud.

Source: The authors, (2024)

In this way, given the technical specificities of the area, AI tools can be used in discussions of costs, auditing, management accounting, legal standards and regulations, taxes, expertise, among others.

Specificity of Accounting	Description	Use of AI	Benefits
Cost Control and Analysis	It includes methods such as absorption costing, break-even point, and margin analysis.	Simulation of cost scenarios and predictive analysis of financial fluctuations.	Improves accuracy and understanding of cost concepts in business scenarios.
Audit and Compliance	It covers risk analysis, internal control testing and fraud detection.	Software such as ACL Analytics to identify risk patterns and inconsistencies.	It prepares students to identify risks and conduct effective audits.
Management Accounting	It focuses on supporting management with budgets, feasibility analysis, and financial projections.	Platforms like Power BI to create dynamic management reports.	Develops strategic and analytical skills for decision-making.
Accounting Standards and Regulations	Teaching of Brazilian Accounting Standards (NBCs) and IFRS for practical application.	Specialized chatbots for quick consultation of accounting standards.	It facilitates the understanding and practical application of complex accounting standards.
Forensic Accounting/Forensics	Investigates financial fraud, analyzes suspicious transactions, and prepares investigative reports.	Tools like CaseWare IDEA to simulate accounting investigations.	Strengthens investigative competencies and skills in forensic accounting.
Tax Studies	Tax calculation, tax planning and analysis of legislative changes.	Platforms like Thomson Reuters ONESOURCE for custom tax update.	Promotes greater understanding of tax obligations and tax planning strategies.
Technology and Innovation in Accounting	Process automation, Big Data analysis, and the use of blockchain for accounting integrity.	Integration of blockchain and AI into systems such as SAP for automation and analytics.	It trains students to deal with technological innovations in the accounting environment.

It is observable in the table practical examples of the use of AI tools in the teaching of accounting, given their specificities, the discussions are directed from software and applications inherent to accounting practice.

EXPECTED BENEFITS OF INTEGRATING AI INTO ACCOUNTING EDUCATION

Among the results arising from the adoption of AI in the teaching of Accounting Sciences, the personalization of learning is one of the main advances, allowing students to receive content and feedback adjusted to their specific needs (Stroparo et al., 2024). This is particularly relevant in highly complex disciplines such as auditing and financial analysis, where the use of AI can tailor examples and exercises to students' individual difficulties.

In addition, AI tools can automate repetitive tasks, such as financial calculations and data analysis, allowing teachers to focus on more value-added activities, such as theoretical discussions and complex problem-solving (Ballantine; Boyce; Stoner, 2024; Mehdi Kaddouri et al., 2024 also highlight that AI can transform the way students interact with content, providing more dynamic and flexible teaching.

In this bias, the labor market aspect needs to be addressed, as it is essential that the university presents such technologies and, at least, discusses operational and ethical aspects, enabling students to work with big data and emerging technologies, as highlighted in the National Curriculum Guidelines for the Accounting Sciences course (Brasil, 2024 (Stroparo; Bochniak, 2024a). The literature, therefore, reinforces that AI can increase student engagement through dynamic and interactive learning environments (Celik et al., 2022). Also noteworthy is the ability to predict financial trends and analyze large volumes of data according to trends and competence for future accounting professionals (Zawacki-Richter et al., 2019).

TRAINING OF TEACHERS FOR THE USE OF AI

Among the difficulties pointed out by the studies, teacher training is an element that needs to be discussed for the successful implementation of AI technologies in education.

It is verified that the lack of preparation of teachers has been identified as one of the main challenges for the effective integration of AI in higher education (UNESCO, 2022). According to Stroparo et al. (2024), a robust training program should include not only technical training on the use of AI tools, but also pedagogical approaches that explore how these technologies can be meaningfully integrated into teaching.

Continuous training is essential to ensure that teachers keep up with rapid advances in technology and educational practices. In this context, programs such as those suggested by UNESCO (2021) can be adapted, promoting workshops and practical courses on the ethical and inclusive use of AI. Tinka Singh et al. (2024) assert that training should address both technical and pedagogical aspects, highlighting practices that promote active interaction between teachers and students.

SOLUTIONS TO ENABLE THE TECHNOLOGICAL INFRASTRUCTURE

Technological infrastructure is a determining factor for the success of AI adoption in teaching, as there is a lack of adequate computing resources in institutions, especially public HEIs, such as servers, software, and access to data (Celik et al., 2022).

It is suggested that initial investments can be made possible through public-private partnerships and/or funding of applied research projects. According to UNESCO (2021), higher education institutions should prioritize initiatives that integrate the modernization of laboratories and the installation of accessible AI platforms. Another solution pointed out is the implementation of cloud systems that can reduce infrastructure costs, offering flexibility and scalability to meet the growing demands of data processing (Akgun; Greenhow, 2021).

STRATEGIES FOR ENGAGING STUDENTS AND TEACHERS IN THE USE OF AI

In this sense, it is necessary to adopt actions aimed at engaging the academic community to create a culture of innovation and acceptance of AI in teaching. It is not just about pure and simple acceptance, but about incorporating the integration of such technologies into academic discussions.

For students, the integration of gamified technologies and AI-based accounting simulations can increase interest and motivation (Stroparo et al., 2024). On the other hand, for teachers, it is essential to promote a constant dialogue about the benefits and challenges of AI, highlighting its potential to transform educational practices (Jia; Sun; Looi, 2023).

However, as Habermas (1984) suggests, it is necessary to balance technological rationality with communicative rationality, ensuring that the interaction between teachers and students mediated by technology is not limited to automated processes, but promotes a critical dialogue. Students should be led to think in order to contest the results initially presented by the AI, propose alternatives for use and not just accept the results peacefully, without questioning.

Ethical aspects must be conducted in a rational way in the discussion about the insertion of AI in education. Mehdi Kaddouri et al. (2024) warn that the use of AI should respect students' privacy and avoid biases in algorithms that could perpetuate inequalities. In addition, Tavares et al. (2020) emphasize that AI should not replace the human role in teaching, but complement interactions between teachers and students, preserving the fundamental values of education, such as inclusion and equal opportunities. UNESCO (2021) also reinforces the importance of clear guidelines for the ethical use of AI, proposing that institutions educate students about the social and ethical impacts of this technology.

Table 3. Ethical Aspects related to Pedagogical Practices with AI.

Category	Ethical Solutions
Data Privacy and Security	Implement security protocols such as encryption. Ensure informed consent prior to data collection. Adopt regulations such as LGPD or GDPR. Use anonymized data to train algorithms.
Reduction of Algorithmic Bias	Develop algorithms with diverse and representative data. Conduct frequent audits to identify and correct biases. Create ethics and diversity committees for supervision.
Inclusion and Accessibility	Develop accessible technologies for students with disabilities or in remote areas Establish public policies to reduce the digital divide. Incorporate multiple cultural perspectives into content and algorithms.
Transparency and Accountability	Use AI systems with explainable algorithms. Implement accountability mechanisms for failures. Create regular reports on the performance and impacts of AI tools.
Preservation of the Human Role	Treat AI as a complementary tool.58 Provide continuing education for teachers. Value human interaction, such as mentoring and collaborative discussions.

Avoid Manipulation and Suppression of Critical Thinking	Design AI systems that encourage critical thinking. Monitor gamification to prevent behavioral manipulation. Teach students how to critically evaluate AI.
Diversity in Development	Form diverse development teams. Include educators, students, and ethicists in tool design. Promote collaborations between institutions and technology companies.
Psychological Impacts and Well-Being	Implement usage limits to avoid technological overload. Include psychological support and digital wellbeing programs. Monitor the impacts of technologies on mental health.
Governance and Regulation	Create specific regulatory frameworks for AI in education. Establish public-private partnerships to finance ethical development. Encourage academic research and participatory regulatory forums.

Fonte: adapted from UNESCO, (2019)

The framework systematizes the main ethical challenges related to the implementation of AI in higher education and suggests solutions to mitigate its negative impacts. Such recommendations are in line with the guidelines proposed by international organizations, such as UNESCO (2019), which highlights the importance of an ethical approach to ensure that digital technologies serve as inclusive and equitable tools in education.

One of the most important points refers to data privacy and security, considering that AI often requires large volumes of personal information to operate effectively. Therefore, the implementation of security protocols such as data encryption and anonymization, along with compliance with regulations, such as the LGPD (Brazil) or GDPR (European Union), are essential to avoid the inappropriate use of this information (UNESCO, 2019).

In this bias, another pressing challenge is the reduction of algorithmic biases. According to Floridi et al. (2018), implementing regular audits and the use of diverse data are essential for educational equity. In this same vein, it is verified that the creation of ethics and diversity committees can be additional mechanisms for compliance with ethics.

In the field of inclusion and accessibility, it is necessary to take measures to ensure that AI tools are distributed equitably, and it is necessary to implement public policies to reduce the digital divide, notably so that students in remote areas or with disabilities have access to educational technologies. This premise is corroborated by Zawacki-Richter et al. (2019), who emphasize the importance of adapting technologies to regional and cultural needs.

In terms of transparency and accountability, aspects such as information security and user trust in AI systems are discussed. Explainable tools, with clear decision processes, make systems more understandable to teachers and students, as pointed out by (Andriamparany *et al.*, 2014; Bankins; Taiwan, 2023)

An important point in the discussion is the preservation of the human role (of teachers) in teaching, highlighting AI as a complementary tool to the teacher, and not as a substitute. As highlighted by (Araujo; Stroparo, 2024; Chen *et al.*, 2022)

Finally, governance and regulation ensures the ethical development of AI in education, either through the creation of specific regulatory frameworks or the promotion of public-private partnerships. Such measures are in line with UNESCO's recommendations (2019) that ensure the implementation of debates on the subject, as well as the creation of forums involving the community and actors involved.

Therefore, ethical issues must excel in a holistic view, proposing practical solutions based on principles of equity, inclusion, and transparency.

Furthermore, it is important to highlight the theoretical discussions proposed by Habermas and Marcuse regarding technology. Habermas emphasizes the importance of communicative rationality, which privileges free dialogue and consensus-building among subjects, as opposed to instrumental rationality, which focuses on efficiency and control (Habermas, 1984, 2015).

In research on AI and education, although this is a path of no return, it is necessary to bring to the debate questions such as: Automation vs. Automation Humanization, inclusion and equity, space for dialogue, technological alienation, technology as emancipation and creation of new capacities, among other aspects.

In this context, the introduction of AI in teaching can privilege automated processes and quantitative metrics, aligning with instrumental rationality. This, if not well conducted by teachers, can limit the space for dialogue and critical learning, which are essential in a communicative approach.

Therefore, Habermas (1984) asserts that technology should serve human emancipation, not domination where research should be used to explore how AI can complement, and not replace, the dialogue between teachers and students, keeping the focus on collaborative and participatory pedagogical practices.

Marcuse, in turn, criticizes technological society for reducing critical thinking and conforming individuals to the demands of the dominant system, creating a "one-dimensional society" (Feenberg, 1996). For Marcuse, technology can dehumanize education if it is treated as a complete substitute for the teacher, reducing human interaction and promoting passive learning, and therefore technology should be used to create a free society and not to perpetuate structures of control. In this way, technology can be a means of liberation, as long as it is used to expand human capabilities.

FINAL CONSIDERATIONS

The use of AI tools in the teaching of Accounting Sciences represents a transformative opportunity to align educational processes with the demands of an increasingly technological and data-driven market. Pedagogical practices aimed at enhancing learning, by providing realistic simulations, are able to personalize teaching and automate repetitive tasks, increasing the efficiency of academic activities, as well as being able to develop technical and strategic skills indispensable to future accountants.

However, the implementation of such practices requires adequate technological infrastructure, as well as the necessary teacher training and attention to ethical issues related to inclusion and transparency. The use of tools such as ACL Analytics, Power BI, and Thomson Reuters ONESOURCE, for example, highlights the feasibility of integrating advanced technologies into accounting education, as long as they are combined with adequate technical and pedagogical support.

It is up to teachers to maintain the difficult criticality of academics by developing not only technical teaching, but the ability to argue, reasoning and to question the results arising from essentially technical practices. By preparing students for a dynamic and competitive professional environment, the integration of AI contributes to teaching in line with contemporary demands, promoting practical, critical, and innovative learning.

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