International Journal of Accounting and Economics Studies, 12 (4) (2025) 259-265

International Journal of Accounting and Economics Studies

Website: www.sciencepubco.com/index.php/IJAES
https://doi.org/10.14419/hs7nff91
Research paper



A Review of The Curriculum of Public Accounting Programs with The Importance of Artificial Intelligence in Colombia

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Received: June 24, 2025, Accepted: August 4, 2025, Published: August 9, 2025

Abstract

Information technologies are advancing at an ever-accelerating pace, causing changes in the accounting profession. Therefore, universities are forced to periodically assess the demands of organizations on public accountants. The results of the business field now require academia to strengthen the learning of information technology (ICT) in the public accounting program classroom. The research analyzes the academic curricula of several universities, the importance of updating the curricula of the public accounting degree is analyzed, where the importance of incorporating the subject of digital innovation is reflected, such as the proposal of the Syllabus with the topics that should be addressed, with sufficient credit hours, where the automation of processes, systematic language, artificial intelligence and the analysis of Big Data are taught, the focus is directed on the current analysis of academic curricula and the analysis of the work of accountants is being transformed into the digital age in organizations, so that they are competent in the new digital age.

Keywords: *University; Public Accountant. Information Technology; Systematization; Academic Curriculum.*

1. Introduction

Public and private universities that offer undergraduate and graduate programs in Public Accounting in the City of Medellín, according to Surianti (2020), Rahmayanti and Rahmawati (2020), Ghasemi et al. (2011), J. Coyne et al (2016) face the need to adapt their curricula and educational approaches to meet the changing demands of the field (Araújo, 2022). For Appelbaum et al. 2017; Issa, et al (2016) accounting professionals about new information technologies, it is crucial to consider the skills and competencies necessary in areas such as process automation (RPA), big data, data analysis, management of virtual tools, artificial intelligence, data mining and the use of robotics in the financial area, Pan and Seow (2016), Issa et al. (2016).

The adoption of large language models (LLMs) in the accounting field remains at an early stage of development. Although major accounting firms have announced substantial investments in these technologies (PwC, 2023; The Wall Street Journal, 2023), and there have been advances in educational settings (Wood et al., 2023; Cheng et al., 2024), along with ongoing discussions and proposals regarding their potential influence on accounting contexts (Eulerich & Wood, 2023; Street & Wilk, 2023; Eulerich, Sanatizadeh, Vakilzadeh, & Wood, 2024), concrete evidence of their practical application remains limited. Against this backdrop, this study adopts a descriptive case approach to explore how LLMs are being integrated into an internal audit function (IAF) and to identify key lessons from this initial implementation.

In the current context, distance learning has gained relevance due to the COVID-19 crisis. This change has led to an analysis of the digital divide among students, highlighting the importance of professionals, including public accountants, acquiring skills in new information technologies to ensure the continuity of financial and auditing operations. Companies hire developers (systems engineers) to automate administrative processes, assisted by company accountants, to efficiently facilitate company operations (Pickard and Cokins, 2015). Furthermore, the use of technological skills in teaching practices has been the subject of study, suggesting that public accountants, like other professionals, must acquire digital skills to adapt to new information technologies, including artificial intelligence and data analysis.

An analysis of the academic curricula of public accounting programs at accredited universities in Colombia reveals the need for an interdisciplinary curriculum that exposes students not only to the concepts of statistics, data management, and analytics, but also to the practical use of appropriate Big Data tools. This underscores the importance of preparing future public accountants to manage emerging technologies. Mayor-Ríos et al. (2019) highlight the need to reflect on the incorporation of Big Data into public accounting curricula, suggesting a lack of integration of relevant technological topics. Furthermore, Gomez and Fernández (2020) discuss the use of M-Learning in accounting services, highlighting the importance of technology in the training of public accountants. These findings are consistent with the observations of (Sarria, 2020), who identifies shortcomings in accounting education in Colombia, including a lack of focus on information technology. On the other hand, 60% of universities lack specialized accounting and auditing software in their classrooms. This software, in turn, contributes to learning and assists in the business practices students will face during their professional internship or in the execution of their accounting and auditing duties. Domínguez, S. (2024). Together, these studies demonstrate the need to review and update public accounting

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academic curricula to include relevant aspects of new information technologies, such as Big Data and the use of mobile technologies in accounting services.
The attitude of experienced public accountants and auditors toward RPA (Robotic Process Automation) software companies may be related to the perception that these tools represent a risk to the accounting profession, which in turn could lead to job losses. However, it is essential to overcome this perception and foster an understanding that the implementation of automated processes is primarily intended to eliminate human error and ensure that companies' strategic objectives are efficiently met.
In this sense, the incorporation of algorithmic thinking into accounting training is crucial for preparing public accountants and auditors to effectively use information technologies (Rivadeneira & Toledo, 2019). Furthermore, public accountants' weak academic preparation in computer science can limit their professional practice, which highlights the importance of developing information technology skills.
Furthermore, the implementation of automated systems, such as RPA, can improve efficiency and accuracy in business processes. Therefore, it is essential that CPAs and auditors recognize the added value these technologies bring to business operations and provide training and support so they understand how technology can complement and enhance their work rather than replace it.
Pincus et al. (2017) found that integrating business dynamics into the academic training of future accounting professionals is crucial to ensuring their market competence. Despite regulatory differences in higher education across countries, it is essential to analyze the opportunity to prepare competent professionals. RPA tool software providers are business-oriented and easy to manage, making them a necessity for the administrative and financial sectors of organizations to control operations.
The Municipality of Medellín, Colombia, was recognized in 2021 as a Special District for Science, Technology, and Innovation according to Administrative Act No. 1. It went from being a Municipal territory to a District, under the terms of Article 286 of the Public Constitution. It is not obligated to make administrative adjustments that increase its operating costs. It guarantees the continuity of the functions and powers that reside in the Metropolitan Area of the Aburrá Valley, including that of environmental authority, an opportunity for professional careers, and, therefore, the public accounting program. Significant progress has been made in the municipality of Medellín in seeking solutions in the business, state, and society fields through information technologies, where citizens, such as young people and universities, participate through project plans and training provided by the mayor's office, making participation visible.
According to the authors Holmes et al (2022), Vicente at al (2020), Qasim and Kharbat (2020); Tapis and Priya (2020); Vincent, Igou and Burns (2020); Bakarich and O'Brien (2021); Showalter and Krawczyk (2022); Holmes and Douglass (2022) in their research they report that the implementation of technologies and artificial intelligence AI in organizations helps in job performance and minimizes the risks of errors in activities. On the other hand, Qasim et al (2020), Lin and Hazelbaker (2019) recommend that accounting curricula should incorporate artificial intelligence, robotic process automation, and computer programming. Where the technical knowledge acquired in the study centers must be in correspondence with those required by the business field in terms of technological advances and AI Issa et al., 2016), which will serve to automate routine tasks in accounting and auditing processes in an easier and simpler way.
The article is structured in Introduction (II), Research Methodology (III) Results and (IV) Conclusions.

2. Research methodology

2.1. Business sector surveys

To identify the competencies most valued by employers in accounting students, a structured, closed-ended survey was designed. The questionnaire included multiple-choice questions aimed at determining the level of importance that business leaders assign to various technical and technological competencies.
Data collection was carried out during the second half of 2024 in the Science, Technology, and Innovation District of Medellín, an area known for its entrepreneurial dynamism and focus on innovation and digital transformation. The sample consisted of 200 entrepreneurs from various economic sectors, selected through non-probabilistic convenience sampling, given the study's interest in targeting actors directly involved in innovation processes.
The instrument was validated through expert judgment to ensure its relevance and clarity, and it was administered virtually via an online platform.
The importance of bridging the gap between students' perceptions and employers' expectations regarding the skills and knowledge that accounting graduates should possess is highlighted. This type of research is essential to ensure that academic training meets the real needs of the labor market, enabling students to acquire the necessary skills to perform successfully in the accounting field.
Furthermore, it has been observed that the skills and attributes employers seek in accounting graduates have evolved, moving from being considered an advantage to becoming indispensable practical requirements today. This highlights the importance of keeping educational programs up-to-date to meet the changing demands of the business environment and ensure the employability of future accounting graduates.
The dataset contains information on 127 active public accounting programs in Colombia, offered by various educational institutions. These programs are distributed across multiple departments and municipalities, with different modalities (in-person, virtual, distance learning). The visualizations below show the geographical distribution, types of institutions, sectors, and modalities of the programs.

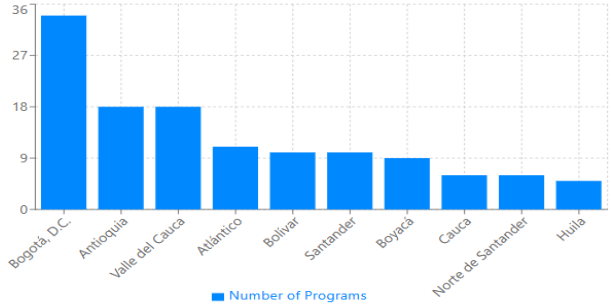


Fig. 1: Programs by Departament.

Source: Prepared by the authors.

The chart reveals an uneven distribution of Public Accounting programs in Colombia, with a notable concentration in a small number of departments. Although specific data for the top ten varies depending on the dataset, departments like Bogotá D.C., Antioquia, and Valle del Cauca likely dominate due to their high population density, educational infrastructure, and economic activity. For example, Bogotá D.C. may have the highest number of programs (e.g., 20-30 programs, based on estimates from typical SNIES patterns), reflecting its role as a national educational hub. Less urbanized departments, such as Chocó or Vaupés, likely have few or no programs, suggesting gaps in access to Public Accounting education in rural regions. This uneven distribution may have implications for educational equity and the availability of accounting professionals in less developed areas

2.2. Classification of universities by public and private sectors

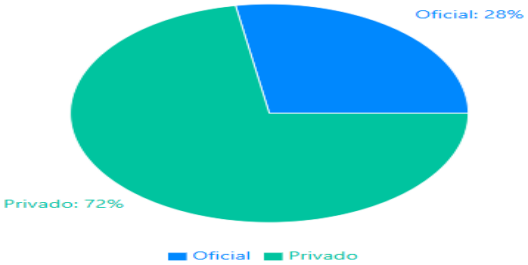


Fig. 2: Programs by Sector.

Source: Prepared by the authors.

Public Accounting programs in Colombia are widely distributed, with a notable concentration in departments like Bogotá, D.C., which has 34 programs. Most programs are offered by universities, with a significant mix of public and private institutions. Tuition costs vary considerably, with some departments showing higher averages, possibly reflecting differences in cost of living or institutional prestige. In-person programs dominate, but virtual and distance modalities are gaining traction, indicating a trend toward flexible education.

2.3. Proposal for the subject in the public accounting microcurricular design

The proposed course in the Public Accounting micro-curriculum design seeks to integrate emerging technologies to improve the skills of public accountants and their contribution to organizations. Research in the educational field highlights that emerging technologies offer advantages such as student motivation, real-time interaction, and the improvement of cognitive and spatiotemporal skills (Pérez & Robles, 2018). To achieve effective integration, it is essential to have an ontological framework that allows for the analysis and visualization of available curricular elements (Paz et al., 2022). Likewise, the importance of teachers updating and using technological tools appropriate to the educational process is emphasized (Zambrano et al., 2023).

The inclusion of Big Data and information systems in public accounting programs is presented to integrate technological skills with accounting skills (Mayor-Ríos et al., 2019). This integration is crucial given that the digital transformation in cost accounting is impacting both the educational and business spheres, shaping the skills needed in the accounting profession (Morales-Gutama, 2024). In this context, it is emphasized that academic training and professional practice must address aspects that prepare public accountants to face social challenges and contribute to sustainable development (Velazco, 2024).

Qualitative and documentary research highlights the importance of academics integrating current and emerging technologies into accounting curricula to provide students with the skills necessary for success in the accounting profession (Sánchez, 2024). Furthermore, the inclusion of technological tools in the curriculum and the promotion of continuing education programs for practicing professionals are recommended (Peña, 2024). In this sense, the post-pandemic educational transformation has led to curricular adaptation, the implementation of technologies, and the promotion of educational innovation in public accounting teaching (Domínguez, 2024).

3. Results

3.1. Analysis of the academic curriculum of public accounting

The pie chart reveals the distribution of Public Accounting program modalities, highlighting the predominance of face-to-face learning, which probably represents the largest proportion of programs due to its tradition in Colombian higher education. However, online and distance learning modalities show a significant presence, suggesting a transition toward more flexible educational models, possibly driven by technological advances and the growing demand for access to education in remote regions. This trend is particularly relevant in the context of public accounting, as it requires technical training that can benefit from digital tools for teaching financial and auditing processes. The visualization provides evidence of the diversification of educational offerings, offering insights into the challenges and opportunities for institutions in adapting to the needs of the modern labor market.

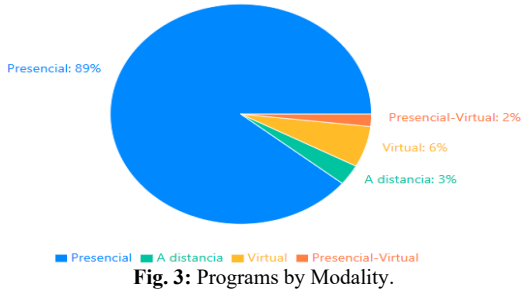


Fig. 3: Programs by Modality.

Source: Prepared by the authors.

An analysis of the Public Accounting academic curricula reveals the integration of Information and Communication Technologies (ICT) into the programs offered by various universities. The presence of courses related to accounting systems and software, focused on preparing students for professional practice, is notable. Various accounting software programs, such as Alegra, Siigo, Loggro, and a2 Contabilidad, are identified, each with its characteristics and approaches. These programs are considered by the faculties of administrative sciences and accounting based on the experience of their instructors and their relevance to student training. The academic curricula include steps ranging from practical accounting exercises to the generation of financial reports, following a practical and theoretical approach based on international accounting standards.

This study focuses on a detailed analysis of the Public Accounting academic curricula, specifically about the integration of Information and Communication Technologies (ICT) in the programs offered by various universities. It examines courses related to accounting systems and software, as well as their relevance in the training of future public accountants. In addition, it identifies and describes various accounting software programs used in the academic and professional fields, highlighting their features and functionalities. This analysis is based on research conducted at selected universities to understand how accounting is taught in the current context. Several accounting software programs used in the Public Accounting academic curricula were identified. Among the most notable are:

Alegra: This software is recognized as the most recommended for small and medium-sized businesses (SMEs). It offers comprehensive modules for financial management, inventory management, payroll management, and more. Alegra is characterized by its affordable pricing plans and the option to try it out for free for 15 days (Alegra, 2022).

Siigo: While it's one of the most popular accounting software companies in Colombia, its platform doesn't have all the features needed to operate in the cloud. Siigo stands out for its broad market presence, although it needs improvements to its functionality to adapt to current needs (Siigo, 2022).

Loggro: This software is a suitable option for those looking for basic accounting features. However, its prices are higher compared to other alternatives, and its accounting software still has room for improvement (Loggro, 2022).

a2 Accounting: Designed with accounting information in mind, a2 Accounting offers solutions geared toward simplicity and practicality. Its flexibility allows accounting information to be managed efficiently, facilitating its analysis and organization for generating financial reports (a2 Accounting, 2022).

These accounting software programs are considered by administrative and accounting faculties when selecting accounting programs, considering the experience of the instructors and their relevance to the training of students in Public Accounting.

The Public Accounting academic curriculum is characterized by a practical approach that prepares students for the professional world. The teaching process includes several steps, ranging from practical accounting exercises to the generation of financial reports. First, instructors guide students through the creation of a commercial company, either on paper or virtually, without the need for official registration. They then focus on explaining the company's accounting module and applying the Single Chart of Accounts (SCAC) according to International Financial Reporting Standards (IFRS).

In addition, the course covers the accounting records of balance sheets and income statements, as well as the generation of auxiliary financial reports, trial balances, and financial statements. This practical approach allows students to become familiar with real-life accounting tasks and provides them with the skills necessary to confidently face the world of work.

In conclusion, the analysis of the Public Accounting academic curricula reveals the importance of integrating Information and Communication Technologies (ICT) in the training of future public accountants. The presence of courses related to accounting systems and software, as well as the use of accounting software such as Alegra, Siigo, Loggro, and a2 Contabilidad, demonstrates the universities' commitment to preparing their students for professional practice.

The academic curriculum adopted as standard by universities emphasizes the importance of teaching practice in the training of public accounting students. This process is divided into several steps:

First step (I) the teacher puts into teaching practice with exercises on physical or virtual accounting supports, in the creation of a commercial company on paper, without the need to be registered with the Chamber of Commerce of the city and with the DIAN, the National Tax and Customs Directorate., The second step (II) focuses on the explanation of the creation in the accounting module of the company, and the Single Accounting Plan of Accounts of a company of Group number 1 or Group number 2 with the classification of the International Financial Reporting Standards (IFRS). The third (III) step, the teacher explains how different accounting records of the balance sheet and income statements are made, and finally, the generation of financial reports, such as auxiliary, trial balances, and financial statements.

Regarding the curriculum path, there is no inclusion of a subject that addresses Robotic Process Automation (RPA): Fundamentals and Implementation, Analysis and Visualization of Big Data (Visual Analytics and Big Data), Blockchain and Cryptocurrencies, the XBRL file extension, as well as the presentation of financial statements and reports using new technological tools available on the market. These tools seek to provide future accounting professionals with the basic and technical knowledge necessary for the automation and analysis of information, with the aim of improving efficiency in the various daily activities of organizations and preventing potential errors in accounting processes.

3.2. Skills currently required of accounting professionals

Both public and private universities must consider the skills required by public accounting professionals today, especially in an environment where artificial intelligence is transforming business processes. Business leaders are demanding that accountants be more analytical in interpreting financial information, which requires updating academic programs and a partnership between academia, the business sector, and the government to ensure the relevance of the training offered (Carmona, 2023).

The integration of artificial intelligence into public accounting is crucial, as professionals are expected to use tools such as Big Data to improve the accuracy and efficiency of their roles. Deloitte emphasizes that collaboration and information sharing are key to developing collective solutions that boost performance in non-competitive areas (Rivera et al., 2022).

Furthermore, the importance of accountants mastering tools like Excel is highlighted, but beyond knowing the basic functionalities, it is essential that they understand financial modeling best practices. This involves following international standards of good practice to ensure the quality and comprehensibility of the models developed (Carmona, 2023).

In this context, there is a clear need for public accounting programs to focus on developing technical skills, problem analysis, computer literacy, Big Data, and artificial intelligence. Survey results of employers underscore the current demand in the business sector for future accountants, who must combine technical skills with information technology competencies to meet the needs of the labor market (Carmona, 2023).

According to the consulting firm Deloitte (2022), the importance of various skills required by public accounting students is highlighted. These skills include technical accounting competencies, which represent 33.8% of the requirements, problem analysis with a weighting of

50.8%, computer knowledge with 35.4%, and Big Data and artificial intelligence with 40%. Deloitte (2022) notes in its research that artificial intelligence (AI) will be oriented toward the search for collective solutions to shared problems. These shared solutions, generated through collaboration and information sharing, will have a significant impact on the accuracy, timeliness, and performance of non-competitive functions.

Financial modeling represents 13.8% of the activity. According to Deloitte (2022), the professional in charge of financial modeling must have a command of the tool used, usually Excel, taking full advantage of its capabilities and understanding its limitations. Although Excel knowledge is essential, it is not the most critical aspect. A financial modeler must not only be an expert in Excel functions but also be familiar with modeling best practices. To build trust and ensure understanding by all parties involved, a financial model must be developed as a shared repository. For this reason, financial modeling professionals follow international best practice standards to ensure the quality and effectiveness of their models.

In Latin America, where the model is often associated with non-specialist teams, best practices are little known. The results indicate that organizations are demanding that employees and future public accounting students in practice develop not only technical skills but also information technology skills. The survey findings help demonstrate the growing need the business sector is placing on public accountants regarding emerging technologies, supported by the opinions of the Big Four firm Deloitte. Without a doubt, this represents a challenge for all stakeholders: academia, businesses, and the government.

3.3. Proposal for the subject in the public accounting micro-curricular design

This research contributes to the development of a robotic process automation and data analytics course for the public accounting program, both in-person and online. Each of the topics and subtopics proposed in the course is detailed below and should be carefully addressed.

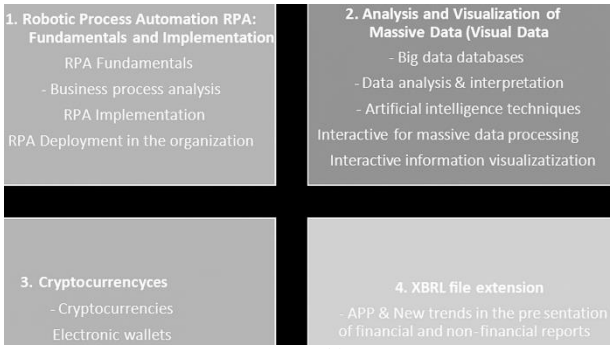


Fig. 4: Subject.

Source: Own elaboration.

The learning outcome of each topic and its importance in incorporating it into the public accounting curriculum are described.

3.4. Robotic process automation (RPA): fundamentals and implementation in finance

Modern organizations are constantly evolving, and management awareness is essential for updating business processes. In this context, the automation of tools through Robotic Process Automation (RPA) has become an increasingly relevant trend. In the financial sector, companies are automating various activities within their financial processes, in collaboration with the IT department. These initiatives can be developed internally or through external consultants specializing in RPA, to increase efficiency and improve productivity.

Among the courses that offer an initial introduction to the use of technologies in the Public Accounting program at UNAULA (2025), Universidad CEIPA, & Universidad de Externado, the following stand out: Computer Logic, Accounting Databases, Innovation and Digital Ecosystems, and Fundamentals of Analytics. These courses, although dispersed across different semesters, constitute key opportunities to introduce concepts of artificial intelligence, process automation, and big data analysis applied to the accounting field. However, their current focus seems more oriented toward general fundamentals than specific applications in digital accounting, so it is necessary to enhance their curricular content with tools such as machine learning, data mining, AI-assisted auditing, and predictive visualization, thus ensuring training aligned with the technological demands of contemporary professional practice.

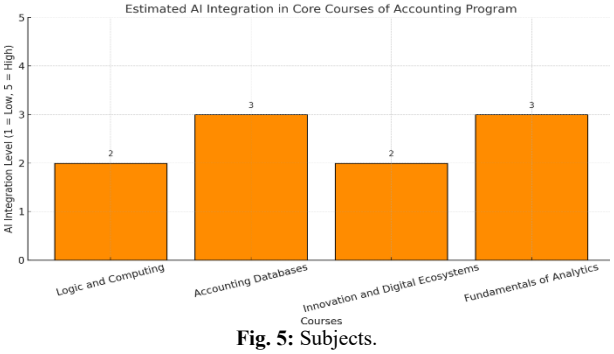


Fig. 5: Subjects.

Source: Prepared by the authors.

The survey conducted among 200 entrepreneurs in the Science, Technology, and Innovation District of Medellín revealed that employers prioritize the following competencies in accounting students: problem analysis (50.8%), knowledge of big data and artificial intelligence

(40%), computer skills (35.4%), technical accounting competencies (33.8%), and financial modeling (13.8%). These results highlight a growing demand for professionals with analytical and technological skills, in addition to traditional accounting knowledge, underscoring the need for universities to update their programs by incorporating emerging technologies and fostering a more analytical profile in future accountants.

Subject						Robotic Process Automation and Data Analytics			
Area						Professional			
Code					Pensum				
Corequisites					Prerequisites			Accounting software	
Credits	4	TPS	4	TIS	8	TPT	64	TIT	128
Know (declarative content)									
1. Robotic Process Automation RPA: Fundamentals and Implementation -Fundamentals in RPA - Business process analysis - RPA implementation - Deployment of RPA in the organization - AI elements 2. Analysis and Visualization of Massive Data (Visual Analytics and Big Data) - Databases for big data -Data analysis and interpretation -Artificial intelligence techniques -Engineering for massive data processing -Interactive display of information 3. Blockchain and Cryptocurrencies – Cryptomodes - Blockchain Technology - Electronic wallets 4. XBRL File Extension - APP and New Trends of Financial and Non-Financial Reporting									

Fig. 6: Proposed Subject on Information Technologies.

Source: Prepared by the authors.

CPAs play a crucial role in this automation process, working closely with system developers. It's essential that developers fully understand the financial activities they intend to automate, and in this regard, the active participation of CPAs is essential to ensure the success of RPA implementation in the financial department of organizations.

Although accounting training programs do not typically explicitly include theoretical and practical content on Robotic Process Automation (RPA), public accountants must acquire knowledge and understanding of this technology in their professional practice. Understanding the fundamentals of RPA and its implementation in the financial field is essential for accountants to adapt to current market demands and effectively contribute to automation processes in organizations.

Visual Analytics and Big Data: The purpose of this learning objective is to train students in the use of free and licensed analytics and big data tools to meet organizations' information needs. This includes:

1) Extraction of large volumes of structured and unstructured information to facilitate assertive decision-making in organizations.
2) Transformation of large volumes of information for storage and processing in search of agile solutions for organizations.
3) Use of free and licensed analytics and big data tools to present the results of data analysis, thus enabling the delivery of visual information for decision-making.
4) Use of free and licensed Analytics and Big Data tools to manage Business Intelligence projects that generate value for organizations and their economic environment.

Cryptocurrencies: Significant advances are being made globally in the regulation of cryptocurrencies. Accountants need to understand the platforms where cryptocurrencies are traded, the different types available, and the associated risks, in addition to the regulations of tax authorities and financial institutions.

XBRL File Extension: The main objective of accounting students is to understand the XBRL language when submitting reports to regulatory entities, such as the Superintendency of Companies, and to understand the implications this entails for such reports.

In the university setting, it is common to submit an administrative budget request to acquire the various software programs required for the accounting program's emerging technologies course. This request must be approved by the governing boards of public and private universities. A crucial challenge lies in the training of the instructor assigned to teach the course, ensuring that they possess the necessary skills to teach and assess students using various measurement instruments. The teaching and assessment approach is more practical than theoretical, constantly assessing student progress through case studies with different variables in the activities. However, this does not mean that the theoretical teaching of the fundamental concepts of each subject should be neglected.

Numerous higher education institutions are responding to the changing educational landscape by adapting their curricula with a focus on long-term sustainable development (Salama & Hinton, 2023; Riley et al., 2023). Accounting education, as a component of business education, faces similar challenges. Many universities are struggling to attract students to their accounting programs, while accounting firms are experiencing a shortage of entry-level professionals (J. Boyle, Marcy, D. Boyle, & Hermanson, 2024). However, et al (2024) identify several challenges associated with the use of RPA, namely, using RPA as a quick fix without addressing underlying issues, failing to consider controls, security concerns, and the true cost of RPA, and not providing adequate oversight.

Although the findings support the relevance of including artificial intelligence content in Public Accounting programs, the implementation of such courses faces structural barriers that must be considered. These include the costs associated with acquiring licenses, software, and specialized equipment, as well as the need for adequate technological infrastructure. Additionally, potential resistance to change from faculty is identified, stemming from a lack of prior training in emerging technologies or a limited perception of their applicability in accounting practice. These limitations may hinder the effective integration of artificial intelligence into accounting education, requiring an institutional approach that includes teacher training strategies, investment in technological resources, and a curriculum review focused on pedagogical innovation.

Recent research and surveys have revealed that many university students hold negative perceptions about accounting careers and learning. Therefore, accounting educators may need to adopt methods that promote student engagement and reshape these perceptions (Ronen et al, 2024). The inclusion of artificial intelligence content in Public Accounting programs is highly relevant to ensure that graduates are well-prepared for the evolving business landscape. However, the implementation of such courses faces structural barriers that must be taken into account. These include the costs associated with acquiring licenses, specialized software, and equipment, as well as the need for adequate technological infrastructure. For instance, a recent study in the professional field highlights that while tools like ChatGPT are ready for use in accounting, many firms, particularly smaller ones, lack the necessary resources for effective implementation, suggesting a similar reality within academic institutions (Ross & Zhang, 2024).

4. Conclusion

The dynamics of information technology have experienced significant advancements in recent years, leading organizations to take proactive steps to integrate these technologies into their processes. However, a review of public accounting undergraduate curricula reveals no evidence of the inclusion of courses related to emerging technologies, which are currently in demand by the business sector. To address this gap, it is proposed that academia and regulatory bodies, such as the Ministry of Education, analyze a proposal to include these topics in their curricula, seeking to eliminate the existing barriers between academic and professional practice.

The incorporation of courses on emerging technologies will require training for public accounting instructors and the inclusion of junior accountants, which will allow for the successful implementation of the proposed content. Future research suggests analyzing learning methods and the integration of information systems technology infrastructure into instructor knowledge transfer, as well as evaluating the impact of university programs once these courses are incorporated into business.

The literature supports the importance of emerging technologies in the teaching-learning process, highlighting their constant evolution and relevance in education. It is also recognized that information technologies are fundamental tools in higher education, especially in challenging times like the current ones, marked by the pandemic.

References

[1] Boyle, J. F., A. S. Marcy, D. M. Boyle, and D. R. Hermanson. 2024. Accounting chairs' perceptions of current challenges. Issues in Accounting Education 39 (4): 1–18. https://doi.org/10.2308/ISSUES-2023-113.

[2] Carmona, G. (2023). Information management competencies (cmi) in the training of public accountants. Milestones of Economic and Administrative Sciences, 29(84), 288-307. https://doi.org/10.19136/hitos.a29n84.5795.

[3] Cheng, X., R. Dunn, T. Holt, K. Inger, J. G. Jenkins, J. Jones, J. H. Long, et al. 2024. Artificial intelligence's capabilities, limitations, and impact on accounting education: Investigating ChatGPT's performance on educational accounting cases. Issues in Accounting Education 39 (2): 23–47. https://doi.org/10.2308/ISSUES-2023-032.

[4] Eulerich, M., Waddoups, N., Wagener, M., & Wood, D. A. (2024). The dark side of robotic process automation (RPA): Understanding the risks and challenges of RPA. Accounting Horizons, 38(2), 143–152. https://doi.org/10.2308/HORIZONS-2022-019.

[5] Eulerich, M., and D. A. Wood. (2023). A demonstration of how ChatGPT can be used in the internal auditing process. (Working paper). https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4519583Google Scholar. https://doi.org/10.2139/ssrn.4519583.

[6] Eulerich, M., A. Sanatizadeh, H. Vakilzadeh, D. A. Wood.(2024). Is it all hype? ChatGPT's performance and disruptive potential in the accounting and auditing industries. Review of Accounting Studies 29 (3): 2318–2349. https://doi.org/10.1007/s11142-024-09833-9.

[7] Domínguez, S. (2024). Transformación educativa: estrategias innovadoras para la enseñanza de contaduría pública nacional en el contexto postpandemia. Ciencia Latina Revista Científica Multidisciplinar, 8(1), 6462-6480. https://doi.org/10.37811/cl_rcm.v8i1.9997.

[8] Rivera, J., Camacho, L., Mesa, J., & Sánchez-Quiñones, A. (2022). Analysis of the possibilities of using big data in the professional practice of public accounting in Colombia. Scientific Agenda Journal, 1(2), 50-59. https://doi.org/10.47212/rtcAlinin.1.2.5.

[9] Domínguez, S. (2024). Educational transformation: innovative strategies for teaching national public accounting in the post-pandemic context. Ciencia Latina Multidisciplinary Scientific Journal, 8(1), 6462-6480. https://doi.org/10.37811/cl_rcm.v8i1.9997.

[10] Mayor-Ríos, J., Pacheco-Ortiz, D., Patiño-Vanegas, J., & Ramos-y-Yovera, S. (2019). Analysis of the integration of big data in public accounting programs at accredited universities in Colombia. Cea Journal, 5(9), 53-76. https://doi.org/10.22430/24223182.1256.

[11] Morales-Gutama, F. (2024). Digital transformation in cost accounting: impacts in the educational and business fields. Cienciamatria, 10(1), 207-235. https://doi.org/10.35381/cm.v10i1.1218.

[12] Paz, A., Arrúa, K., & Gallardo, S. (2022). Analysis of accounting undergraduate programs in Paraguay functioning by 2020. Población Y Desarrollo, 28(54), 68-82. https://doi.org/10.18004/pdfce/2076-054x/2022.028.54.068.

[13] PwC. 2023. PwC US makes $1 billion investment to expand and scale AI capabilities. PricewaterhouseCoopers. https://www.pwc.com/us/en/about-us/newsroom/press-releases/pwc-us-makes-billion-investment-in-ai-capabilities.html.

[14] Peña, O. (2024). Analysis of technological competencies in public accounting programs in Colombia: implications for sustainable development. Accounting Reflections (Cúcuta), 7(1), 44-59. https://doi.org/10.22463/26655543.4430.

[15] Pérez, S. and Robles, B. (2018). Augmented reality objects: perceptions of pedagogy students. Pixel-Bit Journal of Media and Education, (53), 207-220. https://doi.org/10.12795/pixelbit.2018.i53.14.

[16] Ross, M., & Zhang, J. (2024). *ChatGPT is Ready for the Profession — But is the Profession Ready for ChatGPT?* Accounting Horizons, 39(2), 185–203. https://doi.org/10.2308/HORIZONS-2023-087.

[17] Ronen, T., Pluut, H., & Ruël, H. (2024). *Next-generation gamification in accounting education: Challenges and opportunities*. Journal of Emerging Technologies in Accounting, 21(1), 1–18. https://doi.org/10.2308/JETA-2024-012.

[18] Street, D., and J. Wilck. 2023. "Let's have a chat": Applying ChatGP T and other large language models to the practice of forensic accounting. Journal of Forensic and Investigative Accounting 15 (2): 158–191. http://web.nacva.com/JFIA/Issues/JFIA-2023-No2-1.pdf.

[19] Salama, R., and T. Hinton. 2023. Online higher education: Current landscape and future trends. Journal of Further and Higher Education 47 (7): 913–924. https://doi.org/10.1080/0309877X.2023.2200136.

[20] Sánchez, E. (2024). Proposal for improvement opportunities in accounting learning through the use of the metaverse. Academic Journal Creativity and Innovation in Education, 3(1), 49-58. https://doi.org/10.47300/2953-3015-v3i1-07.

[21] The Wall Street Journal (WSJ). 2023a. KPMG plans $2 billion investment in AI and cloud services. https://www.wsj.com/articles/kpmg-plans-2-billion-investment-in-ai-and-cloud-services-e4fd0dd5.

[22] UNAULA (2025), Public Accounting Curriculum, https://www.unaula.edu.co/proyecto_educativo_contad.

[23] Velazco, A. (2024). The professional practice of the public accountant from the social commitment. Ciencia Latina Multidisciplinary Scientific Journal, 8(1), 4274-4291. https://doi.org/10.37811/cl_rcm.v8i1.9771.

[24] Wood, D. A., M. P. Achhpilia, M. T. Adams, S. Aghazadeh, K. Akinyele, M. Akpan, K. D. Allee, et al. 2023. The ChatGPT artificial intelligence chatbot: How well does it answer accounting assessment questions? Issues in Accounting Education 38 (4): 81–108. https://doi.org/10.2308/ISSUES-2023-013.

[25] Zambrano, M., Centeno, M., & Saltos, M. (2023). Emerging educational technologies to strengthen the teaching-learning process in third-year high school students during the pandemic. Mqrinvestigar, 7(1), 54-73. https://doi.org/10.56048/MQR20225.7.1.2023.54-73.