

Editorial

Digital Skills in Accounting Training – A Necessary Transformation

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Digital technologies have been causing profound transformations in accounting practice, going far beyond the simple automation of tasks. Innovations such as artificial intelligence, blockchain, data analysis and ERP systems are reshaping the traditional scope of accounting practice, shifting the focus from operational routines to analytical and strategic activities (Klovienė & Gimzauskiene, 2015; Busulwa & Evans, 2021). This new scenario demands professionals trained to work in digital environments, driving the need for different skills and, consequently, the reformulation of training processes (European Commission et al., 2017; Andiola et al., 2020; Tsiligiris & Bowyer, 2021).

In this context, it becomes relevant to intentionally integrate digital skills into the initial (and continuing) training of accountants. The market demand goes beyond the technical domain: international frameworks such as DigComp and DigCompEdu point to complex skills, such as the ethical and critical use of data, effective communication in digital environments, online collaboration, problem-solving with technological support and ensuring information security (Council of the European Union, 2018; Vuorikari et al., 2022). The importance of developing these skills as a pedagogical practice, including in the accounting area, is also highlighted (Bolzan & Vendruscolo, 2021).

International organizations such as the International Federation of Accountants (IFAC), the Association to Advance Collegiate Schools of Business (AACSB), the Institute of Management Accountants (IMA), the Association of International Certified Professional Accountants (AICPA & CIMA), the Chartered Global Management Accountant (CGMA) and the Association of Chartered Certified Accountants (ACCA) have advocated for the structured incorporation of these competencies into accounting curricula (IFAC, 2019; IMA, 2019; AICPA & CIMA, 2019, 2022; ACCA, 2023; AACSB, 2024; Rodrigues, 2025). IFAC adopts a broad approach, while IMA and CGMA emphasize more specialized applications, especially in managerial and financial accounting – areas that strongly demand data literacy, digital security, communication with data, problem solving and, to a lesser extent, digital content creation (Rodrigues, 2025).

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In a study with influential entities in global accounting education, Tsiligiris and Bowyer (2021) classified digital skills, considered essential for future accountants, into two levels: standard and advanced. Standard skills include the use of cloud accounting, ERP systems, business intelligence (BI) tools and document scanning. Advanced skills cover disruptive technologies, such as artificial intelligence, blockchain, advanced business intelligence (BI), programming and data analysis.

Thus, accounting professionals are expected to have not only greater technological proficiency, but also the improvement of transversal skills. The area of Information and Communication Technologies (ICT) is considered one of the most relevant, according to professors, students and professionals in the market in Portugal. Among the required skills, the mastery of emerging technologies (blockchain, big data, AI), digital tools for auditing (such as Power BI, machine learning and data mining) and the alignment of university pedagogical practices with market demands stand out (Carvalho & Almeida, 2022).

Additionally, accountants must cultivate appropriate attitudes in digital environments. These attitudes – understood as mental dispositions that guide behaviors – include values, aspirations, and priorities that influence performance and are essential for ethical, critical, and effective action (Vuorikari et al., 2022).

Despite the recognition of new requirements, many Accounting curricula still operate under a traditional logic, centered on normative content and disconnected from practices that involve problem-solving using emerging technologies. This gap highlights a mismatch between the professional profile required and the training actually offered (Rodrigues, 2025).

As a result, there is increasing difficulty in attracting and retaining qualified professionals, a direct reflection of the misalignment between the skills required by the market and those developed in academia. The prevalence of conventional pedagogical approaches and the weak integration of technological resources accentuate this mismatch (Ackerman, 2019; Carvalho & Almeida, 2022).

National and International Guidelines: Convergence through Transformation

The CNE/CES Resolution No. 1/2024 represents a significant advance in recognizing the importance of digital and analytical skills. Among the skills to be developed, the ability to use contemporary technologies stands out – such as big data, data analytics, data visualization and artificial intelligence – and the commitment to critical, ethical and technical performance in the various contexts of the profession (Ministry of Education, 2024). However, the implementation of these guidelines is still incipient.

Rodrigues (2025), when analyzing the curricular structures of 47 Accounting courses at public universities in the South and Southeast regions, identified the absence of curricular components aimed at developing digital skills. Although some institutions adopt hybrid approaches (focused and integrated), the curricula are still excessively theoretical, with traditional methodologies and little use of emerging technologies. The dimensions of skills and attitudes continue to be neglected, compromising the training of a professional aligned with contemporary demands.

In contrast, universities in the United States have been developing effective strategies to promote digital skills, articulating multiple disciplines with the use of technological tools for data visualization and analysis (Dzuranin et al., 2018; Andiola et al., 2020). Such initiatives meet the requirements of the AACSB Accreditation Standards, especially the current Standard A5 – “Information Technology Skills, Agility, and Knowledge for Accounting Graduates and Faculty” (AACSB, 2024, p. 22). In Brazil, however, such initiatives are still rare.

Higher Education Institutions (HEIs) play a central role in this transformation. Integrating digital competencies goes beyond specific adjustments: it requires structural changes in curricula and in the pedagogical ethos itself. This includes reviewing Course Pedagogical Projects (CPP), adopting active methodologies, and reconfiguring the teaching role (Ackerman, 2019; Moore & Felo, 2021).

According to Competency Theory, formative development should integrate knowledge, skills, and attitudes into practices that promote meaningful learning (Perrenoud, 1999, 2013; Zabala & Arnau, 2015). Zabala (2009) proposes a training flow that starts with the definition of competencies

in pedagogical projects, goes through their organization in areas and disciplines, articulation with methodologies, and culminates in the systematic evaluation of these competencies. To this end, it is essential to invest in ongoing teacher training and in the creation of learning environments suitable for the digital age.

In this sense, a recent study with 112 teachers of *stricto sensu* postgraduate programs in Accounting, using the Check-In Higher Education questionnaire (based on Dig-CompEdu), showed that the majority have levels of digital proficiency between basic and intermediate. Despite the mastery of digital tools, their pedagogical and evaluative application is limited. There were also regional variations: The Center-West had a higher level of competence, while the Northeast revealed lower proficiency. The results reinforce the need for investments in teacher training and review of pedagogical strategies (Rodrigues, 2025).

Overcoming these gaps requires coordinated actions, such as the inclusion of specific disciplines – data science, digital accounting, data visualization and digital ethics – and the strengthening of partnerships between academia, the productive sector and professional councils, promoting certifications and continuing education. Public policies should foster teacher training and the critical and ethical use of educational technologies. It is equally important to engage teachers in reflective processes about their practice, considering the challenges of teaching digital natives and providing more engaging and meaningful learning experiences.

In addition, regional inequalities in access to technologies represent an additional obstacle to innovation in accounting education. Digital inclusion must be treated as a priority, not only to modernize teaching, but to ensure equity in the training of professionals prepared to act with security, analytical efficiency and responsibility in a demanding market. Neglecting these skills compromises both the quality of organizational decisions and the employability of graduates.

Final Considerations

The integration of digital skills into accounting training is no longer a competitive advantage – it is an ethical, technical and social requirement. Brazilian universities need to take a

leading role in educational transformation, promoting curricula that train professionals capable of acting critically in a digitalized world, driven by data and smart technologies.

The reflections presented here point to the urgency of a curricular restructuring that intentionally and transversally addresses the three dimensions of digital skills: knowledge, skills and attitudes. Such integration must be supported by current and emerging technologies, linked to significant pedagogical practices.

In addition, it is essential to rethink the training processes of teachers. Digital skills directly impact their practices and, consequently, the quality of training for future accountants. The construction of a new pedagogical culture, supported by innovation, ethics and digital responsibility, is essential for the survival and evolution of the accounting profession in the 21st century.

References

- Ackerman, J. L. (2019). The accounting curriculum needs a complete overhaul. *The CPA Journal*. <https://www.cpajournal.com/2019/10/22/the-accounting-curriculum-needs-a-complete-overhaul/>
- American Institute of Certified Public Accountants (AICPA) & Chartered Institute of Management Accountants (CIMA). (2019). Chartered Global Management Accountant (CGMA) competency framework. <https://www.aicpa-cima.com/resources/download/cgma-competency-framework-2019-edition>
- American Institute of Certified Public Accountants (AICPA) & Chartered Institute of Management Accountants (CIMA). (2022). The AICPA foundational competencies framework for aspiring CPAs. <https://www.thiswaytocpa.com/collectedmedia/files/foundational-competencies-framework-pdf.pdf>
- Andiola, L. M., Masters, E., & Norman, C. (2020). Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights. *Journal of Accounting Education*, 50. <https://doi.org/10.1016/j.jaccedu.2020.100655>

- Association of Chartered Certified Accountants (ACCA). (2023). Business and technology. <https://www.accaglobal.com/gb/en/student/exam-support-resources/fundamentals-exams-study-resources/f1/syllabus-study-guide.html>
- Association to Advance Collegiate Schools of Business International Accounting Accreditation (AACSB). (2024). Standards for Accounting Accreditation. https://www.aacsb.edu/-/media/documents/accreditation/accounting/standards-and-tables/accounting2018standards_july-1-2024_finl.pdf?rev=0df476c595744b5492cdabcef8d-668dc&hash=50C6B37A580C024DAD9CE89B83FCEB31
- Bolzan, G., & Vendruscolo, M. I. (2021). Competências docentes: um estudo com professores de graduação em ciências contábeis no Rio Grande do Sul. *Contabilidade Vista & Revista*, 32(3), 123–164. <https://doi.org/10.22561/cvr.v32i3.6811>.
- Busulwa, R., & Evans, N. (2021). *Digital transformation in accounting*. 1. ed. Routledge. <https://doi.org/10.4324/9780429344589>
- Carvalho, C., & Almeida, A. C. (2022). The adequacy of accounting education in the development of transversal skills needed to meet market demands. *Sustainability*, 14(10), 5755. <https://doi.org/10.3390/su14105755>
- Council of the European Union. (2018). Council recommendation of 22 May 2018 on key competences for life long learning. *Official Journal of the European Union*, 189, 1-13. [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604\(01\)&rid=7](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&rid=7)
- Dzuranin, A. C., Jones, J. R., & Olvera, R. M. (2018). Infusing data analytics into the accounting curriculum: A framework and insights from faculty. *Journal of Accounting Education*, 43, 24-39. <https://doi.org/10.1016/j.jaccedu.2018.03.004>
- European Commission: Joint Research Centre, Redecker, C., & Punie, Y. (2017). *European Framework for the Digital Competence of Educators: DigCompEdu*. Publications Office of the European Union. <https://doi.org/10.2760/159770>
- Institute of Management Accountants (IMA). (2019). IMA management accounting competency framework. <https://www.imanet.org/career-resources/management-accounting-competencies>
- International Federation of Accountants (IFAC). (2019). *Handbook of International Education Pronouncements*. https://www.ifac.org/_flysystem/azure-private/publications/files/Handbook-of-International-Education-Standards-2019.pdf
- Klovienė, L., & Gimzauskiene, E. (2015). The effect of information technology on accounting system's conformity with business environment: A case study in banking sector company. *Procedia Economics and Finance*, 32, 1707-1712. [https://doi.org/10.1016/S2212-5671\(15\)01476-8](https://doi.org/10.1016/S2212-5671(15)01476-8)
- Ministério da Educação (2024). Resolução CNE/CES nº 1, de 27 de março de 2024. Institui as Diretrizes Curriculares Nacionais do Curso de Graduação em Ciências Contábeis. http://portal.mec.gov.br/index.php?option=com_docman&view=download&alias=25703_1-rces001-24&category_slug=marco-2024&Itemid=30192
- Moore, W. B., & Felo, A. (2021). The evolution of accounting technology education: Analytics to STEM. *Journal of Education for Business*, 97(2), 105-111. <https://doi.org/10.1080/08832323.2021.1895045>
- Perrenoud, P. (1999). *Construir as competências desde a escola*. Artmed Editora.
- Perrenoud, P. (2013). *Desenvolver competências ou ensinar saberes? A escola que prepara para a vida*. Penso Editora.
- Rodrigues, R. G. C. (2025). *Competências digitais na contabilidade: Perspectivas internacionais e as lacunas nos currículos e na formação docente no Brasil*. [Tese de Doutorado, Universidade Federal de Uberlândia]. Repositório Institucional da Universidade Federal de Uberlândia. <https://repositorio.ufu.br/handle/123456789/45155>
- Tsiligiris, V., & Bowyer, D. (2021). Exploring the impact of 4IR on skills and personal qualities for future accountants: A proposed conceptual framework for university accounting education. *Accounting Education*, 30(6), 621-649. <https://doi.org/10.1016/j.aed.2021.05.001>

doi.org/10.1080/09639284.2021.1938616

Vuorikari, R., Kluzer, S., & Punie, Y. (2022). DigComp 2.2: The digital competence framework for Citizens - With new examples of knowledge, skills and attitudes. Publications Office of the European Union. <https://doi.org/10.2760/115376>

Zabala, A., & Arnau, L. (2015). Como aprender e ensinar competências. Penso Editora.

Zabalza, M. A. (2009). Retos de la escuela del siglo XXI: Desarrollo del trabajo por competencias. Revista HISTED-BR On-line, 9(34), 3–18. <https://doi.org/10.20396/rho.v9i34.8639576>