

The Philosophy of Ethical Accounting Education in the Digital Age:

The Role of the International Federation of Accountants

<https://doi.org/10.56830/IJAMS07202602>

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Received: 26 May 2026. Accepted: 8 July 2026. Published: 30 July 2026

Abstract:

This study aims to analyze and evaluate the role of the International Federation of Accountants (IFAC) in developing ethical accounting education to meet the demands of the digital age, which relies heavily on artificial intelligence. The study draws its conclusions from the contributions of IFAC, as the global representative of the accounting profession, and specifically from its various bodies, particularly the IAESB and IASBA. This study employs a mixed (inductive and deductive) methodology. To support this assessment, the researcher conducted a theoretically informed (quasi-systematic) literature review of relevant research and studies. The study reached several key findings. Most importantly, the study confirms that IFAC has played a significant role in developing ethical accounting education standards through conferences, forums, and relevant research. Furthermore, the IAESB is currently developing IESs (1-8), which define the principles of accounting programs and focus on an outcome-based approach, emphasizing learning rather than testing. The study also notes that the IESBA has developed the core principles, threats, and safeguards, and a conceptual framework for independence when providing audit, examination, and other assurance services to address the digital age, reliant on artificial intelligence.

Keywords: International Ethics Standards Board for Accountants - International Federation of Accountants - International Accounting Education Standards Board - International Accounting Education Standards.

1. Introduction.

1.1. Research Background

The World Economic Forum's 2018 Future of Jobs report indicates that 75 million current jobs could be lost by 2022 because of the shift in the division of labor between humans and machines (Anne-Marie Vitale, 2020). A range of jobs, including accountants and auditors, are expected to become increasingly redundant. The 2018 Future of Jobs report also suggests that around one hundred thirty-three million new jobs could emerge by 2022, indicating global economic growth rather than contraction. As automation and technology reshape business models, it is imperative for accountants and auditors to swiftly evolve and adapt their roles. In preparing for the future, the profession must proactively identify areas where our skills will be in demand, as well as the behaviors and competencies essential for thriving in an evolving business landscape. Furthermore, we must reconsider and redefine the expectations surrounding the identity of an "accountant."

Professionals such as data analysts, data scientists, specialists in digital transformation, big data experts, and IT service providers are in increasing demand. The report emphasizes that accountants demonstrate behavior and skills which fit the new role. Consequently, this highly dynamic environment requires the workforce to be flexible. Not only this, but the International Federation of Accountants (IFAC) has embraced a strategy aimed at enhancing accounting education globally to create a progressive professional identity (IFAC, 2019a). Central in doing this is the International Commission on Accounting Education (ICAE), which helps IFAC to shape workflows for professional accounting organizations (PAOs) for redefining what accountants should do in the future and raising accountants for a future that brings with it future challenges. The Commission describes a vision for PAOs as: "to effectively contribute to developing a profession that is future-ready—characterized by relevance, reputation, value, and sustainability—which will attract a range of current employees as well as up-level newcomers and meet the demands of organizations both in government and the private sector along with society at large." Knowing the direction in which accounting education is currently proceeding: Is it possible for it to address competency- and skill-driven transformations? The report asks, "How do we bring about radical and evolutionary change?" It proposes a role for IFAC, professional societies, companies and individuals to play within the global profession (IFAC, 2019b).

1.2. The Role of IFAC.

IFAC must draw on its comparative advantage to facilitate this evolution into a revolution that includes (Anne-Marie Vitale, 2020): First, Dialogue: This means, as part of a transformation strategy, accepting transformative change. It requires discussing the profession's Total Addressable Market (TAM), which places the field in comparison to the number of jobs held by accountants and auditors. Unless this is countered early, the 2018 Future of Jobs report estimates that the average financial asset value of the profession will

decline. IFAC is advancing this world-wide dialogue by asking important questions such as: How can we increase our average financial asset value? What measures can we take today to bolster our future financial asset value? What benefits can the capital markets system offer? Second, Preparing Future-Ready Employees: IFAC assists Professional Accountancy Organizations (PAOs) and other stakeholders in facilitating knowledge sharing, capacity building, and encouraging thought leadership. And third, Promoting High-Quality International Standards: The IES establishes skills and competency learning outcomes that ground accountants' proficiency from the beginning of career development. A recently developed online platform is also available to facilitate access to IES and related implementation support materials.

1.3. The Role of PAOs

The report indicated that the role of professional organizations includes initiating dialogue and updating the behaviors and competencies of accountants. PAOs should consider the suitability of their business models and whether their organizational strategies are designed for a future where accountants perform differently, considering the following (Anne-Marie Vitale, 2020): First, Accountants do the same things, accountants who collect, extract, and process data and information, match information across separate systems, and make decisions based on limited samples or information. These skills are typically acquired through structured classroom learning—a one-size-fits-all approach. Second, Accountants doing the same things differently, accountants who develop their skills using automation, visualization for more effective insights, and communication technologies for greater impact—all tend to rely on increased self-learning and personal exploration. Third, Accountants doing different things will be determined by the actions we take today.

1.4. The Role of Organizations

This role involves developing effective and efficient financial departments. The report indicated that accountants are an integral part of organizational success, and their role is becoming increasingly important. Therefore, financial departments should identify change drivers and related development plans to ensure their suitability for the intended purpose. These plans should be supported and partnered with within the business sector, the public sector, or other entities. Furthermore, financial departments should possess the appropriate mix of talent, skills, and technologies to enhance effectiveness and efficiency. To facilitate the transformation of financial departments, the IFAC developed an assessment tool that enables boards of directors and management to identify strengths and areas for improvement within their financial departments.

1.5. The Role of Individuals

The report stressed that individual responsibility is to concentrate on personal growth, honing existing technical skills, and building on increasingly important skills. The individual is the essence of future preparedness, so each of us must have a personal sense of

responsibility for lifelong learning and professional development. This includes the change from a passive, compliance-based learning to a personalized, reflective, active learning driven by our individual needs (Anne-Marie Vitale, 2020):

1.6. The Problem Statement and Research Objective.

Ethical accounting education is a core competency in the creation of the accounting profession. It will teach us how to be credible technical professionals, and how to maintain ethical behavior (ethics will teach us to work ethically, as well with information). It starts in the classroom and goes on through professional development, so professionals develop a robust moral compass. This is because, to meet challenges, uphold public trust and maintain the integrity of the profession, ongoing training will be a necessity. Hence, education ensures that professionals receive and master the skillset and technical know-how needed to understand the accounting principles and standards. It serves as a basic introduction to the professional code of conduct and ethics standards which lay the groundwork for professionals' ethical compass. It also fosters professionalism by instructing the professional obligations, professional standards, and professional behavior, required of accountants. Ethical behaviour is a necessary precondition for upholding trust, openness, and credibility in the accounting and financial reporting professions. Thus, education and ethics are a partnership of sorts. Lacking a firm ethical basis, the most technically proficient accountants lack any respect for professional standards. Trust in an accounting professional can only exist if the individual possesses technical competence along with ethical fortitude. Therefore, cultivating ethical accountants is no long-term thing but rather an ongoing journey, initiated at the beginning of an academic process and strengthened after a lifetime of studies and professional practice. In this regard, the issue that has been the focus of this study is summarized as follows: What are IFAC and its councils, in particular the International Accounting Education Standards Board (IAESB) and the International Ethics Standards Board for Professional Accountants (IESBA), roles in promoting ethics, education, and AI using technology in the digital age of 2018-2025? So, this study aims to analyze and evaluate the role of IFAC and its councils, especially the IAESB and the IESB, in developing ethical accounting education to meet the demands of the AI-driven digital age.

2. Research Theoretical Analysis.

Ethical education of accounting is pivotal for accounting and auditing professionals in the digital age. Technology brings up new ethical dilemmas, and calls for new competences, including data analysis and cybersecurity skills. Accountants must be competent in both to be able to continue to gain public trust, competence as professionals as well as to evolve towards new digital scenarios such as big data and artificial intelligence. This, in turn, is how they keep pace and make ethical decisions in a world full of change at an ever-changing pace. Accordingly, the current study reveals a unique value of both accounting education and professional ethics in today's accounting digital age for accountants. This includes the need to

adapt to new technologies such as artificial intelligence, blockchain, and big data, an update of the curriculum for the digital skills of today's graduates, and the incorporation of new skills that extend beyond traditional form of accounting -- including data analysis, digital literacy and understanding of the platform-based business model.

Among the most important studies related to the importance of accounting education in the digital age (Al-Hattami, 2025); (Almaqtari, Farhan, Al-Hattami, Elsheikh, & Al-dalaïen, 2024); (Popa, Ștefan, Olariu, & Popa, 2024); (Bavaresco, et al., 2023); (Haleem, Javaid, Qadri, & Suman, 2022); (Andiola, Masters, & Norman, 2020), whose topic is Integrating technology and data analytical skills into the accounting curriculum: Accounting department leaders' experiences and insights, confirmed that in light of the flourishing development of artificial intelligence, the field of accounting is witnessing a radical and comprehensive transformation, and professional accounting education in colleges and universities faces unprecedented opportunities and challenges.

Regarding the challenges, the sector's requirements for accounting personnel in data analysis, information technology and other key competencies are becoming more stringent and showing an upward trend. In contrast, the traditional accounting education model in universities is unsatisfactory and struggles to meet the new needs arising from the rapid pace of change. Although many colleges and universities have taken effective initiatives, such as introducing relevant courses, the actual pace of reform still lags the pace of change in the sector.

This leads to a more pronounced gap between expectations for educational reform and the actual results achieved. Looking at the current situation, we can see that colleges and universities are making effective changes in many aspects of their curricula. Computer technology, data analysis, and other courses that meet the needs of the times are gradually being integrated into the professional accounting curriculum.

In the area of practical teaching, colleges and universities are paying close attention to establishing on-campus and off-campus training programs, developing collaborative projects between schools and institutions, and offering a wide variety of competitions, lectures, seminars, and other rich and diverse methods to create broad employment opportunities for students. In faculty development, universities are actively cultivating and training faculty members with digital backgrounds to give new impetus to improving the quality of teaching and the level of scientific research. In the field of educational technology applications, some universities have begun to skillfully employ modern technologies, such as virtual reality (VR) and augmented reality (AR), and have developed innovative teaching methods, seeking to create a more accessible, interactive, and effective learning experience for students, and are moving towards nurturing intelligent and cultured students in the fields of finance and accounting. In general, universities are moving steadily towards nurturing intelligent and well-informed accounting talents.

Regarding professional ethics in the digital age, professional accountants, especially when dealing with new technologies, are required to maintain public trust and address emerging ethical dilemmas. Digitalization presents new ethical challenges related to data security, privacy, and the use of artificial intelligence, necessitating careful consideration and ethical frameworks. Maintaining professional standards is also crucial, as digital tools may pose new risks that undermine professional competence and due diligence. Ethical awareness is essential for handling these situations responsibly, as it promotes social responsibility. Ethics education should include social responsibility to help accountants understand how their practices impact the environment and society, enabling them to contribute to more sustainable practices.

Among the most important studies related to the importance of professional ethics for accountants in the digital age (Kurniawan, Ningsi, Utomo, Safariland, & Assih, 2025); (Yulindisti & Dhayan, 2025); (Berikol & Killi, 2020); (Arkhipova, Montemari, Mio, & Marasca, 2024); (Roša, 2021), emphasized that while there are different approaches to addressing ethical issues, accountants must define the nature of the required decision by identifying the context of the ethical dilemma, determining the rights and interests of those affected by the decision, identifying professional practice rules, internal and external governance rules, and relevant laws, presenting arguments for and against taking a particular action, formulating a solution that fairly balances these arguments, and considering any negative consequences of taking or not taking the action.

The study also highlighted the importance of considering the potential negative consequences of taking the action or not taking it. In general, previous studies have not addressed the role of IFAC, and its boards, especially the IAESB and the IESB, in promoting ethics, education, and AI-based technology in the digital age, which increases the importance of the current study.

3. Methodology and Approach.

This study employs a mixed (inductive and deductive) methodology. Using analytical analysis, a key tool of the inductive approach, the study will examine the role of IFAC in developing standards for ethics, education, and professional accounting to address the digital age, which relies heavily on artificial intelligence. The deductive approach will then be used to draw conclusions by evaluating this role. To support this assessment, the researcher conducted a theoretically informed, quasi-systematic literature review of research spanning from 2018 to 2025. This review is based on the context outlined.

Based on the foregoing, we will present and analyze the role of the IFAC in developing ethics-based accounting education in the digital age. We will also present and analyze the roles of the IAESB and the IASB. The study will conclude with findings, recommendations, and suggestions for future research.

3.1. The Role of IFAC

According to IFAC in March 2025, the requirements for sustainability disclosures have increased tremendously in recent years, with such disclosures being required by many jurisdictions. Considering this, numerous global emerging standards (including international ones) were promulgated addressing the following issues: reporting, assurance, ethics. To keep pace with these changing requirements, accounting professionals should take certain measures to ensure that the professionals with knowledge and skills are providing the best quality sustainability information and services. IFAC revised its IES to integrate sustainability –including analysis, reporting, and assurance –into the preparation of future professional accountants. These revisions are establishing a world-class model of professional accounting education, which will allow future accountants to leverage sustainability reporting and assurance standards effectively worldwide, the IFAC has confirmed. The major upgrades to sustainability are in the following: In the first place that you integrated the sustainability aspects, concept of sustainability is incorporated into every International Education Standard (IES) learning outcome (the initial professional development) that involve professional accountants: make the association between the financial and sustainability data and the information. Second, it is a new area of skills in assurance, this is an area of learning outcomes which prepare accountants to build a base of understanding of the fundamentals of assurance. Third, greater attention to business understanding strengthens the accountant's competency to measure the impact of sustainability on the business models, value chains, and in the enterprise strategies. Fourth, it has to do with the behavioral, hence it promotes decision making, adaptability and teamwork skills. Fifth, broader illustrative materials: More guidance to support application by industry professional accounting professional bodies, colleges, and education programs. Accordingly, IFAC formed the ICAE in 2019. ICAE is a key component of IFAC's strategy to promote accounting education worldwide.

Moreover, The IFAC has defined its mission as follows: First, serving the Public Interest. The Council has affirmed that one way we serve the public interest is by promoting the global accounting profession through the development and improvement of professional accounting education. This is achieved through the establishment of high-quality international educational standards. These standards enhance professional accounting education globally by setting minimum requirements for initial professional development for aspiring professional accountants and continuing professional development for existing professional accountants. Second, effective Governance is Fundamental to Our Mission. Governance is demonstrated through effective due diligence processes, which include public transparency, independence, efficiency, public consultation, and oversight. Public transparency is demonstrated by adherence to an accounting framework and the provision of publicly available materials throughout the process. This also ensures transparency at decision-making points, demonstrating the framework's application. Engagement with stakeholders is another element of the process, designed to accommodate diverse global

perspectives. It is important to recognize that independence in accounting education differs from independence in developing auditing, assurance, and ethics standards, and this distinction carries the risk of undue influence on the accounting profession. Developing high-quality accounting education standards requires collaboration among all components of the profession, including IFAC, the Institute of Professional Accountants (IPAE), professional accounting organizations, firms, regulators, and academics. Effective accounting education is a shared responsibility among all stakeholders in the profession, thus mitigating any potential self-inflicted threats.

In 11/2024, the IFAC established the Reference Requirement for Advancing Accounting Education in Public Interest. IFAC, together with its member organizations, adopts a comprehensive and integrated approach to help stakeholders prepare professional and aspiring accountants to become qualified professionals for the future, essential to building strong and sustainable institutions, financial markets, and economies.

In implementing this approach, the primary audience is IFAC's member organizations and those aspiring to join, while the secondary audience includes other stakeholders involved in developing and implementing initial and continuing professional development requirements at the jurisdictional level. Therefore, this approach builds upon the outstanding work of the IAESB, which has significantly contributed to the development of the accounting profession by developing IES and charting a high-quality educational path for the initial and continuing professional development of accountants. Consequently, the responsibility for implementing IFAC strategy to advance accounting education globally, in the public interest, rests with IFAC staff, led by a director who reports to the IFAC Chief Executive Officer. The Chief Executive Officer, in turn, reports to the IFAC Board of Directors. IFAC has defined the responsibilities of the committee as follows:

- To leverage stakeholder input, monitor developments, and contribute to the development of the IFAC strategy, ensuring that accounting education globally evolves to meet future needs.
- To advise IFAC staff on the implementation of the IFAC strategy to advance accounting education globally. Facilitating access to expertise and resources, and providing advice on matters such as project prioritization (e.g., revisions/updates to International Education Standards, support for the implementation of International Education Standards, and other informal guidance), building the capacity of professional accounting organizations, and thought leadership, developing project proposals, identifying appropriate resources and consultation processes for projects, and preparing proposed and final publications.
- Endorsing the content and consultation process used in developing new/revised International Education Standards, with a recommendation to the IFAC Council.

- Encouraging the adoption and application of IES and advancing international discussion on emerging issues related to accounting education.
- Advocating for the provision of high-quality education for professional accountants.

3.2.The Role of IAESB

Based on the role of IFAC, the IAESB revised IES 2, 3, and 4 on March 13, 2025, to integrate sustainability into all training programs for aspiring professional accountants. These updates strengthen the role of the accounting profession in supporting and ensuring high-quality sustainability reporting while maintaining integrity and professional standards. IES 2 (revised) defines the learning outcomes for technical competence – the ability to apply professional knowledge to perform a role according to a specific standard. IES 3 (revised) defines the learning outcomes for professional skills, and IES 4 (revised) defines the learning outcomes for values, ethics, and professional attitudes. These are the characteristics that distinguish professional accountants as members of a profession and include principles of conduct (such as ethical principles) generally associated with the defining characteristics of professional behavior, which are fundamental to their definition (IFAC, 2025a); (IFAC.IAESB, 2025a); (IFAC.IAESB., 2025b); (IFAC.IAESB., 2025c); (IFAC.IAESB., 2025d); (IFAC.IAESB.e, 2025); (IFAC.IAESB., 2025f); (IFAC.IAESB., 2025i); (IFAC.IAESB., 2025g).

The following are the components that identify professional accountants as members of a profession. Moreover, International Education Standard (IES) 1 describes the principles to be followed when setting and communicating entry requirements for professional accounting education programs. The professional entry requirements are subject to IFAC IES 1, 2025, IES 2 Initial Professional Development - Technical Competence (Revised 2026), IES 3 Initial Professional Development - Professional Skills (Revised 2026), IES 4 Initial Professional Development - Values, Ethics, and Professional Attitudes (Revised 2026), IES 5 Initial Professional Development - Work Experience (Revised 2026), and IES 6 Initial Professional Development - Formal Assessment of Professional Competence (Revised 2026).

It is important to note that International Education Standard 1 is directed at member organizations of IFAC, and it is the responsibility of these member organizations to set and communicate entry requirements for professional accounting programs.

In addition, International Education Standard 1 (IES 1) can be useful for educational institutions, employers, regulatory bodies, government agencies, and any other entities involved in providing and supporting professional accounting programs. IES 1 explains the principle of flexible access to professional accounting education programs under the auspices of an IFAC membership, while ensuring that aspiring professional accountants have a reasonable opportunity to successfully complete such programs. IES 1 clarifies the following: (a) a reasonable opportunity to successfully complete professional accounting education programs; (b) the suitability of admission requirements; and (c) the different forms of admission requirements.

IES 1 also acknowledges that admission requirements are diverse by specific country, based on (a) varied pathways in professional accounting education, and (b) different governance and regulatory arrangements between countries. IES 1 recognizes that the attainment of a full professional qualification is one point in a succession of exit points from a professional accounting education program. The International Education Standard (IES 2) specifies the learning outcomes for the technical competence that students need to develop as they continue their studies through Initial Professional Development (IPD). Technical competence is defined as the capacity for applying professional knowledge to perform activities in practice so that they align with established goals [25]. The International Education Standard (IES) 3 specifies the learning outcomes for professional skills aspiring professional accountants can achieve upon completion of IPD. Professional skills are: (a) intellectual skills; (b) interpersonal and communication skills; (c) interpersonal skills; and (d) organizational skills. Professional accountants integrate these skills with not only technical competency, but also professional values, ethics, and attitudes, thus demonstrating professional competence. IES 3 also delineates professional skills needed by aspiring professional accountants by the end of IPD and defines content and competency areas and learning outcomes. This can be seen in the International Education Standard (IES) 4, which states that people who pursue professionalism in accountancy are expected to be competent in respect of the following values, ethics, and attitudes at the end of the preliminary professional development stage (IPD). Professional values, ethics and attitudes form the character of professional accountants as parts of a profession.

They are generally related principles of conduct (for instance ethical principles) which are seen as essential in identifying the distinctive features of professional conduct during. Given the fact that education and training remain sustained throughout the career of a professional accountant, the professional values, ethics and attitudes obtained during initial professional development (IPD) can also be seen as relevant in continuing professional development (CPD) given professional accountants' career trajectories, as they develop a broader set of ethical challenges. It is for this reason that IES 4 incorporates relevant ethical requirements into professional accounting education. The applicable ethical standards typically outline five fundamental ethical principles for professional accountants (integrity; objectivity; competence and due diligence; confidentiality; and professional behaviour).

International Education Standard (IES) 5 details the relevant work experience that practitioners who are aspiring to be accountants must undergo by the end of their Initial Professional Development (IPD). Work experience describes workplace and other activities related to the development of professional competence. Work experience is part of IPD, a process by which potential accountants first form the foundation for professional competence and subsequently perform as professional accountants. The work experience in IPD is based on general education and professional accounting education programs. The public expects professional accountants to use their experience and knowledge to be of use in their positions. But professional accountants perform varied roles, which leads to varying levels of

appropriate work experience that may vary from one IFAC member organization to the next and even between one member of IFAC to another with differing segments. IFAC member organizations may meet (a) their own needs, and (b) the requirements of appropriate regulatory authorities by adjusting requirements related to work experience. (c) Generally, professional accountants are qualified and after their completion of international professional development, practical experience may be required to further develop professional accountants to the professional competence necessary for other roles, for example: (a) the role of a certified auditor, (b) other specialized roles, and (c) regulated roles.

As such, practical experience is part of a lifelong learning process that professional accountants undergo when pursuing continuing professional development to establish and maintain the professional expertise applicable to their occupation. Alterations in job environment, career progression or new position would also necessitate professional accountants to enhance their professional competence and acquire new competencies. This issue is tackled in the International Standard for Professional Accountants 7, Continuing Professional Development (2026), which has identified the significant influence of supervisors and employers in developing and overseeing the practical experience obtained by prospective accountants. Supervisors and employers have the most direct exposure to the future profession so planning and monitoring that experience is dependent on this. In addition, International Education Standard (IES) 6 sets out what is meant to be a formal assessment of professional competency that professional accountants will have to meet before the end of Initial Professional Development (IPD). In IES, formal assessment is a professional competence assessment and learning outcome, it ensures that a prospective accountant will exhibit the level of professional competency expected at the end of IPD as a professional accountant. [22].

In addition, International Education Standard (IES) 7 specifies Continuing Professional Development (CPD) as crucial to assure professional accountants' professional competence and maintain their competence to provide high-quality services to clients, employers, and other stakeholders, thereby enhancing public confidence in the accounting profession. CPD is an ongoing learning and development process that follows IPD and is conducted to attain and sustain professional competence to allow an accountant to carry out his/her duties effectively. Continuing Professional Development includes professional accountant-related learning and development activities [23] namely (a) education, (b) training, (c) practical experience, (d) mentoring and guidance, (e) communication, (f) monitoring, feedback, and reflective activities, and (g) self-development activities. Professional competency requirements will therefore evolve as professional accountants transition from one role to another over the lifespan of their careers. Continuing professional development (CPD) encompasses much of what is covered initially within CPD and provides greater breadth and depth of professional competence that may be necessary during a shift to new positions. Thus, professional accountants are accountable for the development and upkeep of professional competency through relevant CPD activities. Yet IES 7 is intended for member

organizations of IFAC - a role of which is to support professional accountants in creating their capacities to protect and safeguard the public interest by:

- Adopting established CPD requirements related to developing and implementing appropriate measurements, monitoring, and compliance procedures.
- Promoting the importance of and commitment to lifelong learning among professional accountants; and
- Facilitating access to CPD opportunities and resources for professional accountants.

Moreover, International Education Standard 8 (IES 8) regulates the professional competence which the professional accounting professional must acquire and maintain for undertaking the role of compliance partner who is entrusted with audit of financial statements. For use in IES 8 this is defined herein as the “compliance partner” in International Standard on Auditing (ISA) 220, Quality Control for Auditing Financial Statements. The IASB also stresses the need for reading IES 8 together with Statement of Member Obligations (SMO) 1, Quality Assurance; ISA 220 (Revised), Quality Management for Auditing Financial Statements; ISQM 1, Quality Management for Firms Performing Audits or Examinations of Financial Statements, Other Assurance Engagements or Related Services; ISQM 2, Participating Quality Reviews. These standards establish overall responsibilities of IFAC organizations, partners and companies participating in the work conducted in relation to financial statement audits as part of a quality management system. This may also include other audits in various countries. For quality management, it is the supervisory role of the regulatory authorities and each of these players can influence the professional competence of the engagement partner. Consequently, member organizations of the IFAC or related organizations may apply the requirements of International Education Standard 8 to professional accountants with a role for assurance and related services that may be equivalent to that of a compliance partner from other historical financial statement audits undertaken in accordance with International Standards on Auditing (ISA) (or other relevant auditing standards) or other types of engagement for assurance and related services.

Thus, IES 2, Initial Professional Development – Technical Competency (2026), in conjunction with IES 4, Initial Professional Development – Values, Ethics, and Professional Attitudes (2026), identifies the competency areas and learning outcomes related to the areas of focus within the International Professional Development Program (IPDP). Specifically, these two standards describe competency areas and learning outcomes that describe the professional competence of aspiring professional accountants at the conclusion of the IPDP. IES 2, Initial Professional Development – Technical Competency (2026), and IES 4, Initial Professional Development – Values, Ethics, and Professional Attitudes, define the competency areas and learning outcomes that describe the professional competence required of aspiring professional accountants by the end of the IPDP. Initial Professional Development – Professional Skills (2026) defines the competency areas and learning outcomes relevant to their respective focus areas within Continuing Professional Development (CPD). Together,

these two standards define the competency areas and learning outcomes that describe the professional competence required of aspiring professional accountants by the end of CPD.

In addition, IES 4 defines the competency areas and learning outcomes that describe the values, ethics, and professional attitudes required of aspiring professional accountants by the end of CPD. These IESs collectively define the competency areas and learning outcomes that describe the professional competence required of aspiring professional accountants by the end of the International Professional Development (IPD) program.

While IES 6 defines the formal assessment requirements for professional competence, IES 2. Initial Professional Development – Technical Competency (2026), IES 3. Initial Professional Development – Professional Skills (2026), and IES 4. Initial Professional Development – Values, Ethics, and Professional Attitudes (2026) define the learning outcomes that will be assessed according to these standards. For their areas of focus in international professional development; and IES Standard 5, Initial Professional Development - Work Experience (2026), sets out the requirements for assessing work experience.

Therefore, IES (2-3-4-5-6-7) are directed at member organizations of the IFAC. These member organizations are responsible for ensuring that IPD meets their requirements. In addition, IEDs can be beneficial to educational institutions, employers, regulatory bodies, government authorities, and any other stakeholders who support the learning and development of aspiring professional accountants, as well as any other relevant entities that support practical experience and the continuing professional development of professional accountants.

On the other hand, IES Standard 8 focuses on IFAC member organizations, which are responsible for the continuing professional development (CPD) of professional accountants and for fostering commitment to lifelong learning among them. Under IES Standard 7: Continuing Professional Development (CPD) (2026), IFAC member organizations require professional accountants to develop and maintain the professional competence necessary to perform their role as professional accountants. Within IES Standard 7 for Continuing Professional Development (CPD) there are specific new developments that help individuals plan effective CPD to prepare for the future in a changing work environment. The changes in business models and evolving business needs create new opportunities for accountants willing to learn. IES 8 draws upon requirements set out in IES 7 for the role of the engagement partner. The professional accountant performing the engagement partner role is responsible for developing and maintaining professional competence through relevant continuing professional development activities, including practical experience.

3.3. The Role of IESBA

Under the banner of change –and more change– for the accounting profession, driven by modern technologies, (Arnold, 2021) noted that this is not a new phenomenon. Professionals have adapted and flourished during the last century's technological revolution.

However, success is not guaranteed, and the profession will only achieve it through comprehensive and thoughtful responses to today's challenges and preparation for those to come.

Therefore, the importance of ethics in the work of professional accountants will not change over time. However, the application of the profession's ethical principles will take different forms as entire economies and societies become digital. The traditional financial functions of the professional accountant, which are heavily data-driven, are gaining a scope and level of complexity that, in many cases, exceeds what professional accountants—or anyone—are trained to handle. Expectations for the profession continue to grow. The profession and the core competencies of individual accountants will need to evolve to remain relevant. For the profession to adapt effectively, it must ask the right questions and find comprehensive answers. Where answers are difficult to find, the profession must pursue this dialogue with urgency and focus, and these efforts are underway.

As (Prinsloo., 2020) pointed out, accounting education is a strategic priority for the IFAC, which in 2019 established a comprehensive and integrated approach to tackle the challenges and opportunities in accounting education. More recent coverage on the subject was included in "Developing IFAC's New Approach to Advancing Accounting Education." IFAC had also convened a four-day virtual global summit, The Proactive Accountant: Global Trends Transforming Learning and Development, November 16-19, 2020, which concentrates on three main areas: technology, environment, and society. Consequently, the IESBA has initiated its Technology Initiative to determine the potential ethical consequences of technological advancements regarding the robustness and relevance of core principles and independence standards of the International Code of Ethics for Professional Accountants (including the International Independence Standards) (the Code), as well as ways to use technology to support and enhance compliance.

In April 2021 (IESBA Technology Initiative 2021), the Board noted that major technological developments are having a transformative impact on the global accounting profession. In March 2020, the IESBA launched a project to explore enhancements to the International Code of Ethics for Professional Accountants (including the International Independence Standards) (the Code) to ensure its fitness for purposes (IFAC. IESBA., 2020)

The project was guided by the findings and recommendations of the Council's Phase 1 Technology Report. The 2020 report summarized the Council's efforts in gathering and analyzing information on the impact of trends and developments in artificial intelligence, big data, and data analytics on the ethical conduct of accountants, both in the business and public sectors. The project plan adopted a multi-phase approach and anticipated approval of the draft presentation by the IESB in June 2021. Engagement efforts with targeted stakeholders in 2020 highlighted the need to focus on a broader range of technological developments.

The Council presented a report in December 2020, paving the way for a substantive and timely response to the ethical and public interest challenges posed by digital transformation.

More recently, the Council established a new working group to accelerate the development of guidance to help accountants and auditors address the most pressing ethical and independence challenges arising from evolving technologies. In October 2020, the IFAC convened a meeting of over 30 participants representing professional accounting organizations, firms, business accountants, academia, and international standard-setters worldwide. The agenda focused on the fundamentals of the digital age (artificial intelligence and robotic process automation, blockchain, cloud computing, data, and ethics) and compliance with the code under these new circumstances. Their discussion centered on three main themes:

- To what extent should the International Code of Ethics change in response to technological advancements?
- Who is responsible for ethical issues that do not clearly fall within the scope of the professional accountant's traditional ethical responsibility?
- And to what extent should professional accountants be familiar with new information and communication technology considerations that extend beyond traditional core competencies?

The participants agreed that the code provides high-level, principle-based guidance on most ethical issues related to technology. Some argue that professional accountants do not face fundamentally different ethical issues, but rather new circumstances that require them to apply existing guidance. The profession needs to find new ways of doing essentially the same things, for example, a practitioner does not need to develop new services when new ways of delivering existing services are sufficient. The profession can meet the demand for guidance on new ethical issues in technology by discussing the nuances and open questions about specific applications of ethical principles in real-life situations. Regarding responsibility, as business becomes increasingly complex with digitalization and technological advancements, questions arise about over-reliance on technology.

Artificial intelligence systems have raised widespread and profound concerns. The logic behind a system's output may only be clear to its developer, or to individuals with highly advanced technical knowledge comparable to that of the developer. Some systems, especially those based on machine learning, may produce outputs that even their developers cannot explain. Some participants believe that maintaining professional judgment requires a professional accountant to assess the reliability of a system only through a complete understanding of the organization.

Regarding the level of knowledge a professional accountant should possess, the need for a solid foundation of skills and ideas that enable growth—such as a commitment to lifelong learning, professional caution, and collaboration within a multidisciplinary model—was among the group's key conclusions. In 3/2021, (IFAC. IESBA., 2021) the IESBA examined the impact of technological developments in areas beyond artificial intelligence and big

data/data analytics, such as blockchain technology, cybersecurity and cloud computing, on the behavior of professional accountants in the business and general practice sectors.

Therefore, in April 2023, (IFAC. IESBA., 2023) the IESB introduced several amendments to its Code of Ethics (Objectivity, Competence and Professional Care, Conceptual Framework, Independence: Audit and Examination Services, Independence, and Other Assurance Services). The IESB emphasized that these revisions, which address the mindset and ethical conduct of professional accountants in both the business and public sectors, will guide them in leveraging and adapting to the opportunities presented by technology. These revisions have been developed to remain relevant and applicable in the context of ongoing technological transformation and are applicable to the use of any technology, including, where possible, future technologies. Guided by extensive fact-finding and stakeholder engagement, these revisions aim to:

- Strengthen the Code of Professional Conduct in guiding the mindset and conduct of professional accountants when using technology.
- Provide enhanced guidance for the digital age regarding the fundamental principles of confidentiality, professional competence, and due diligence, as well as addressing complex situations.
- Strengthening and clarifying international independence standards by addressing circumstances in which firms and network companies may, or may not, provide non-certificate technology-related services to the audit or assurance client.

These amendments will be effective for periods commencing on or after December 15, 2024. Other amendments to the ethics provisions in the Guide will be effective from December 15, 2024. In July 2023, the IESBA issued a guide for auditors on the provision of IT services and their impact on independence. The guide indicated that, for an audit firm to avoid managerial liability when providing IT systems services, it must ensure the following:

- The audit client acknowledges its responsibility for establishing and monitoring internal control systems.
- The audit client, through a competent individual (or individuals), preferably from senior management, makes all management decisions related to the design, development, implementation, operation, maintenance, monitoring, updating, or upgrading of the IT system.
- The audit client assesses the adequacy and results of the design, development, implementation, operation, maintenance, monitoring, updating, or upgrading of the IT system.
- The audit client is responsible for the operation of the IT system and the data it produces and uses.

In January 2025, the IESB [32] issued the concluding statement: International Ethics Standards for Sustainability Assurance (including International Independence Standards) and other revisions to the Code of Conduct for Sustainability Assurance and Reporting. This statement addresses the International Ethics Standards for Sustainability Assurance (including International Independence Standards) and related amendments to the Code, as well as the serious risks to the integrity, quality, and effectiveness of sustainability reporting and assurance. These risks include bias, conflicts of interest, pressure to act unethically, fraud (including environmental misrepresentation), non-compliance with laws and regulations, and threats to the independence of assurance practitioners. It was updated on August 25, 2025.

In November 2025, the IESB issued the Ethics Guide for the Accounting Profession. This guide included a tax planning statement that came into effect for tax planning services and activities commencing after June 30, 2025. The reverse side of Volume 1 of the 2025 guide contains amendments adopted by the IESBA to the Code of Ethics concerning the use of external experts, as well as amendments related to sustainability reporting, which will take effect in December 2026. Volume 2 of the IESBA guide also contains the International Ethics Standards for Sustainability (including independence standards) and other Code amendments related to sustainability assurance, as well as provisions concerning the use of external experts. These provisions will take effect in December 2026, apart from certain independence provisions related to the value chain, which will take effect in July 2028, including those concerning information technology tools.

4. Results, Recommendations, and Future Research.

This study aimed to analyze and evaluate the role of the IFAC in developing ethics, education, and professional accounting standards to meet the demands of the digital age, particularly in the context of financial statement auditing, which relies heavily on artificial intelligence. The study draws its conclusions from the contributions of IFAC, as the global representative of the profession, and its various bodies, especially the IAESB and the IESB for Accountants, during the period 2018-2025.

The study employed a mixed methodology (inductive and deductive). Using analytical analysis, a key tool of the inductive approach, the study examined IFAC's role in developing ethics, education, and professional accounting standards to address the challenges of the digital age. The deductive approach was then used to draw conclusions from this evaluation. To support this assessment, the researcher conducted a theoretically informed, quasi-systematic literature review of research spanning the period from 2018 to 2025. This review is based on the context outlined above. Following this presentation, the study arrived at several conclusions. Among the most important findings are:

First: accountants possess the behaviors and competencies required for these future roles. This rapidly evolving landscape demands flexibility in their work, and therefore, the IFAC has implemented an approach to advance accounting education globally.

Second: the ICAE is a key component of this approach and a cornerstone of IFAC's advice on how to help PAOs reimagine the accountant of the future and prepare future-ready accountants.

Third: IFAC assists PAOs and other stakeholders in preparing future-ready accountants by promoting and enabling knowledge sharing, capacity building, thought leadership, and supporting the adoption and application of high-quality international standards. The IES define learning outcomes that support accountants' competence during their initial professional development.

Fourth: The IES 7 Continuing Professional Development (CPD) standard incorporates several innovations that can support individuals in planning effective CPD in a changing work environment. The revised IES 7 standard outlines the principles and requirements for how PAOs should measure, monitor, and implement their CPD systems. It emphasizes the need for all professional accountants to develop and maintain the professional competence required to perform their roles and places greater emphasis on the learning and development necessary for the roles and responsibilities of professional accountants, rather than on a minimum number of training hours.

Fifth: The role of professional organizations includes initiating dialogue and updating the behaviors and competencies of accountants. PAOs should consider the fitness for purpose of their business models and whether their organizational strategies are designed for a future in which accountants perform differently.

Sixth: Accountants are an integral part of organizational success, and their role is becoming increasingly important. Therefore, finance departments in businesses must identify change drivers and their associated development plans to ensure they are aligned with the intended purpose. These departments should also support and partner with individuals within the business sector, the public sector, or other entities. Furthermore, they should possess the appropriate mix of talent, skills, and technologies to enhance effectiveness and efficiency and facilitate the transformation of finance departments. For this reason, the IFAC has developed an assessment tool that enables boards of directors and management to identify strengths and areas for improvement within their finance departments.

Seventh: The role of individual accountants lies in focusing on personal growth, refining existing technical skills, and developing increasingly important skills. Individuals are at the heart of future readiness, and therefore, each of us has a pressing need to take personal responsibility for our lifelong learning and professional development. This involves shifting learning from a passive, compliance-based approach to a personalized, reflective, and actively driven approach that addresses our individual needs.

Eighth: In the context of addressing the digital age reliant on artificial intelligence technology, the study emphasized the following:

- The IFAC has played a significant role in developing standards for ethics, education, and professional accounting through holding conferences and forums and presenting studies related to the topic of this study.
- The IAESB has, since 2019, developed International Accounting Education Standards (IESs 1-8), which define the principles of accounting programs and focus on an outcomes-based approach, emphasizing what is learned rather than the number of tests passed.
- The IESBA has developed the fundamental principles, threats and safeguards, and conceptual framework for independence when providing audit, examination, and other assurance services.

Ninth: The IESB has introduced several revisions to its Code of Ethics (Objectivity, Competence and Professional Care, Conceptual Framework, Independence: Audit and Examination Services, Independence, and Other Assurance Services). The IESB emphasizes that these revisions, which address the mindset and ethical conduct of professional accountants in both the business and public sectors, will guide them in leveraging and adapting to the opportunities presented by technology. These revisions have been developed to remain relevant and applicable in the context of ongoing technological transformation and are applicable to the use of any technology, including, where possible, future technologies. These revisions, informed by extensive fact-finding and stakeholder engagement, aim to:

- Strengthen the Code of Professional Conduct in guiding the mindset and conduct of professional accountants when using technology.
- Provide enhanced guidance for the digital age regarding the fundamental principles of confidentiality, professional competence, and due diligence, as well as addressing complex situations.
- Strengthening and clarifying international independence standards by addressing the circumstances under which firms and network companies may, or may not, provide non-certificate technology-related services to an audit or assurance client.

Based on the preceding findings, the study proposes the following recommendations and future research:

First: organizations need to foster a culture of lifelong learning and adopt a learning strategy as an integral part of their business strategy. Learners must therefore take control of their own development, understand what they need to learn to achieve their desired performance level, and make sound decisions to maintain success and productivity. It is time for each of us to take responsibility for our lifelong learning and professional development. While lower-level accounting and auditing skills can easily be replaced by technology, business acumen, behavioral competence, digital literacy, data interrogation, synthesis, analysis, and communication remain critically important.

Second: The education that professional accountants receive—both before and after obtaining their accounting qualifications lays the foundation for a strong, sustainable, and resilient accounting profession, capable of evolving as the landscape changes and fostering trust in institutions, markets, and economies. Therefore, we propose that building and developing this educational foundation requires the following:

- A comprehensive and complex educational ecosystem is needed, involving professors, universities, academics, regulatory bodies, governments, and professional accountants working together to provide current and future accountants with the best skills and training.
- An ongoing cycle of evaluation and review of IES is necessary to ensure they meet the needs of the global accounting profession and its stakeholders, such as professional organizations and universities.
- Professional accountants must commit to lifelong learning and be eager to learn new ways of applying existing skills, in addition to maintaining current skills and expertise.
- The IFAC should adopt a multi-stakeholder approach that includes advice and guidance from the International Accounting Education Association, regular contributions from education officers in IFAC member organizations and the Corporate Forum, and contributions and oversight from the IFAC Board of Directors.

Third: Educational institutions must be equipped to deal with a changing world and continuously review their curricula to include elements of big data, data analytics, and cybersecurity. They must also ensure students understand the impact of developments in these fields on accounting and auditing. Furthermore, establishing an advisory board is crucial, as it can benefit industry experts to review and provide feedback on whether the current curriculum is suitable for graduates entering the job market.

Fourth: Universities need to update their educational approach, improve curricula, strengthen faculty development, innovate teaching methods, and address other aspects to enhance students' business management skills. University accounting education must keep pace with the times, undertaking active, in-depth, and comprehensive reforms and innovations, while continuously improving the quality of education in all its facets. This is the only way to consistently develop high-quality professional competencies to meet the current and future needs of the accounting industry and, consequently, contribute to economic growth.

Given the increasing use of artificial intelligence (AI) tools in the accounting and auditing profession, this study suggests that researchers and academics, as future research, should investigate the impact of AI technology on International Standards on Auditing and Assurance, International Public Sector Accounting Standards, International Financial Reporting Standards, the curriculum in Arab universities, the fundamental principles of professional ethics, and independence in the provision of audit and examination services.

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