JSSA | Research article

A Unified Competency Framework for Future-Ready Accounting Talent

Yaowaluk Chadbunchachai
PhD, CPA (Thailand), CGEIT, CRISC, CISM
Independent Consultant – Governance, Risk Management & Controls, and I&T Security

Received: November 20, 2025 | **Revised**: December 11, 2025 | **Accepted**: December 12, 2025

Abstract

The accounting profession is undergoing rapid transformation driven by technological advancements, regulatory and economic shifts, and evolving societal expectations. Despite its critical role in global human capital, significant gaps persist in competency frameworks and accounting education. This study addressed these challenges by conducting a comprehensive literature review of academic and industry sources to trace the evolution of the profession from the 1960s to the projected 2030s. It also examined key drivers and trends shaping the profession in the 2020s and the 2030s and employed a structured multi-method analysis to identify such gaps and potential solutions. The objective is to develop a unified competency framework for future-ready accounting talent that integrates foundational and emerging competencies and supports modular curriculum design, competency-based assessment and cross-disciplinary integration. A distinctive contribution is the exploration of human–AI collaboration, in which a researcher and Microsoft Copilot jointly contributed to such research activities as framework design and scholarly drafting. The findings demonstrate that the collaboration accelerates research synthesis and methodological innovation while clarifying the limits of AI in academic work. Finally, the proposed methodology for framework adaptation and implementation offers a replicable model for curriculum transformation to continuously respond to changes and expectations.

Keywords: Competency Framework, Future-Ready Accounting Talent, Accounting Education, Accounting Learning and Development Program, Researcher-AI Collaboration

กรอบความสามารถแบบหนึ่งรวมสำหรับบุคลากรด้านบัญชีที่พร้อมสำหรับอนาคต

เยาวลักษณ์ ชาติบัญชาชัย

PhD, CPA (ประเทศไทย), CGEIT, CRISC, CISM

ที่ปรึกษาอิสระด้านการกำกับดูแล การบริหารความเสี่ยงและการควบคุม

และการรักษาความมั่นคงปลอดภัยของสารสนเทศและเทคโนโลยี

วันที่ได้รับบทความ: 20 พฤศจิกายน 2568 | **วันที่แก้ไขบทความ**: 11 ธันวาคม 2568 | **วันที่ตอบรับตีพิมพ์บทความ**: 12 ธันวาคม 2568

บทคัดย่อ

วิชาชีพบัญชีอยู่ในช่วงของการเปลี่ยนแปลงอย่างรวดเร็วจากอิทธิพลของความก้าวหน้าทางเทคโนโลยี รวมถึงสภาพแวดล้อมด้านกฎระเบียบและเศรษฐกิจและความคาดหวังทางสังคมที่เปลี่ยนไป แม้วิชาชีพนี้จะมีบทบาทสำคัญต่อทุนมนุษย์ของโลก แต่กรอบความสามารถและการศึกษาด้านบัญชียังมีช่องว่างที่มีสาระสำคัญ งานวิจัยนี้ได้ทบทวนวรรณกรรมจากแหล่งวิชาการและธุรกิจเพื่อติดตามวิวัฒนาการของวิชาชีพตั้งแต่ทศวรรษ 1960 จนถึงทศวรรษ 2030 ตามคาดการณ์ และศึกษาตัวขับเคลื่อนและแนวโน้มสำคัญในช่วงทศวรรษ 2020 และ 2030 โดยใช้การวิเคราะห์แบบหลายวิธีเพื่อระบุช่องว่างดังกล่าวและแนวทางแก้ไขที่เป็นไปได้ โดยมีวัตถุประสงค์เพื่อพัฒนากรอบความสามารถแบบหนึ่งรวมสำหรับบุคลากรด้านบัญชีที่พร้อมสำหรับอนาคตที่บูรณาการความสามารถพื้นฐานและความสามารถใหม่ และสนับสนุนการออกแบบหลักสูตรแบบโมดูล การประเมินตามความสามารถและการบูรณาการข้ามสาขาวิชา ซึ่งอีกผลงานหนึ่งที่สำคัญคือการสำรวจการทำงานร่วมกันระหว่างมนุษย์และปัญญาประดิษฐ์ โดยนักวิจัยและ Microsoft Copilot ได้ร่วมกันทำกิจกรรมวิจัย เช่น ออกแบบกรอบความสามารถและร่างบทความ ผลการสำรวจชี้ให้เห็นว่าการทำงานร่วมกันนี้ช่วยเร่งการสังเคราะห์องค์ความรู้และสร้างนวัตกรรมเชิงระเบียบวิธี ขณะเดียวกันก็แสดงถึงข้อจำกัดของปัญญาประดิษฐ์ในงานวิชาการ นอกจากนี้วิธีการในการปรับและนำกรอบความสามารถแบบหนึ่งรวมไปใช้ได้เสนอในรูปแบบที่สามารถทำซ้ำได้สำหรับการปฏิรูปหลักสูตรให้ตอบสนองต่อการเปลี่ยนแปลงและความคาดหวังได้อย่างต่อเนื่อง

คำสำคัญ: กรอบความสามารถ บุคลากรด้านบัญชีที่พร้อมสำหรับอนาคต การศึกษาด้านบัญชี หลักสูตรการเรียนรู้และพัฒนาด้านบัญชี - การทำงานร่วมกันระหว่างนักวิจัยและปัญญาประดิษฐ์

1. INTRODUCTION

The accounting profession is undergoing a profound transformation, driven by rapid technological advancement and adoption, volatile global economic conditions, evolving regulatory frameworks, and shifting societal expectations. These forces are reshaping the scope and nature of accounting work, demanding broader, interdisciplinary competencies that extend beyond traditional technical expertise. For instance, proficiency in accounting information systems (AIS) has become indispensable for all accounting professionals, enabling them to navigate and leverage digital platforms in daily practice. However, the absence of a comprehensively unified competency framework impairs the development of a curriculum blueprint grounded in sound and robust principles requiring an alignment with multidisciplinary standards and hinders the development of coherent educational pathways that seamlessly integrate accounting, information systems, and emerging technologies.

This paradigm shift necessitates the creation of a unified competency framework. A key challenge lies in integrating foundational accounting knowledge with emerging trends and transformative forces to ensure that accounting talent, which encompasses individuals with the skills, potential, and expertise to perform effectively in the field of accounting, ranging from accounting students and graduates, entry-level accountants, experienced professionals such as auditors, financial controllers, and tax specialists, to senior executives and represents the human capital of the accounting profession, acquires not only technical proficiency but also adaptive, analytical, and digital capabilities essential for success in a dynamic business environment. Without a comprehensive competency framework that connects these elements, efforts to transform accounting talent and education risk being fragmented and misaligned with the realities of the profession. This study aims to address the challenges and gaps by proposing a unified competency framework tailored to the evolving needs of the accounting profession to guide the design, development, and implementation of a learning and development program for future-ready accounting talent. The study is guided by the following research questions (RQs):

RQ1. What are essential and evolving skills of accounting talent across decades from the 1960s to the 2030s?

RQ2. What are essential skills of accounting talent influenced by key drivers and trends of the 2020s and 2030s?

RQ3. Do established accounting-relevant competency frameworks sufficiently address all literature-reviewed skills and what are the gaps, if any?

RQ4. How can insights as derived from historical trends, driving forces and trends, and global standards and frameworks be translated into a unified competency framework for future-ready accounting talent?

RQ5. How to strategically apply the proposed framework to support the design, development, and implementation of accounting curriculum and learning and development programs?

RQ6. What are implications of this study for future research including how can researchers collaborate with AI to independently perform core research tasks and enhance the depth, efficiency, and quality of their work beyond traditional limitations?

This study employs a hybrid literature review methodology integrating historical, scoping, systematic, thematic, and critical reviews with competency framework harmonization on examining and analyzing three focus areas: the evolution of the accounting profession the 1960s to the 2030s, the drivers and trends shaping the profession in the 2020s and 2030s, and established accounting-relevant competency frameworks.

Following the introduction, the paper presents a literature review on the evolution of accounting profession. It examines technology landscape, emerging issues, essential skills, and curriculum focus by decade, and changes in required skills and curriculum emphasis from the 1960s to the 2030s, as well as on key trends and drivers in the 2020s and the 2030s. It then describes the research methodology, the analysis results together with key findings, and the proposed unified competency framework relevant to the future-ready accounting human capital. It also explores the strategic application of the framework and implications for future research and concludes with an overview of its contributions to accounting education and human capital development.

2. Literature Review

2.1 The Evolution of Accounting Profession

Studying and understanding the evolution of accounting profession shed light on what driving forces have impacted the profession and shaped accounting roles which in turn impact the demanded skills of accounting profession and the focus of undergraduate accounting curriculum that aligns undergraduate accounting teaching and learning with industry demands. There are several historical review approaches to analyze the evolution of accounting profession for the purpose of competency framework development and curriculum design and implementation, e.g., decade-by-decade, periods of change, accounting eras based on paradigm shifts in accounting theory, practice, and regulation, industry revolution-based, theme-based, etc.

In this **Section, a combination of a decade-by-decade historical review method, a scoping review method, and a critical review method** was used to identify and track pivotal changes in accounting profession's skills and accounting curricula against dominant technologies and emerging issues in accounting landscape over time because it offers chronological granularity and clarity and comprehensive historical context, facilitating detailed examination of accounting skill and curriculum changes within each interval, and helps identify long-term trends of these. However, the decade-by-decade review method might oversimplify transitions or overlook overlapping developments and have backward-looking focus. The drawbacks were overcome by connecting and aligning accounting skill and curriculum changes to broader technology shifts and emerging issues in the review, by covering a future decade (i.e., 2030's) to include forward-looking topics and issues

such as AI and other emerging technologies, ethics, sustainability, and governance to facilitate the future-ready curriculum design, and by integrating interdisciplinary consideration through the incorporation of technology and emerging issues. The review is generalized by nature and does not intend to be industry specific. For developing a future-ready competency framework and designing and implementing future-ready accounting curriculum, the reviewed period started from the 1960s to the 2030s. Though a narrower timeline covering fewer decades, e.g., the 2000s to the 2030s, enhances curriculum relevance and aligns with modern professional competencies (Smith, 2024), allows for deeper focus on digital transformation and emerging technologies and issues, and reflects impactful changes in accounting and accounting information systems (AIS), including automation, cloud systems, and cybersecurity (Wilke CPAs & Advisors, 2023), it cannot facilitate the exploration of the full evolution of accounting and AIS and the explanation of why certain systems and standards exist today.

In addition, the identification of essential skills and curriculum focus is primarily grounded in two domains, accounting and AIS. This reflects a functional division of emerging drivers and trends, where non-technological ones such as ethics, reporting standards, sustainability, and regulatory compliance are embedded within accounting domain, while technological ones such as automation, data analytics, and digital transformation are addressed through AIS domain. This structure promotes depth, relevance, and coherence across the accounting curriculum without redundancy, enabling the development of integrative competencies and skillsets required for a future-ready accounting talent.

This Section and the next employ a skills-based rather than a competency-based approach for the analyses of skill gaps and the impact of accounting profession's drivers and trends. Although recent literature on undergraduate curriculum design (from 2020 onward) tends to emphasize required competencies more than just demanded skills to reflect a broader educational philosophy that values holistic development and future-oriented adaptability over narrow, task-specific training. The rationale for this is that there is still no agreed concept of competence and the definition and interpretation of competencies varies depending on the subject areas or specific elements being considered. The common core of most definitions involves a combination of knowledge, skills, abilities, and behaviors that enable effective performance in specific contexts as regards work functions or tasks in a defined work setting. For example, for educational purposes, competencies required or expected by the labor market can be considered a set of trainable skills, knowledge, attitudes, characteristics (i.e., attributes and personal qualities), and traits (i.e., motives) (Kroon et al., 2023). In addition, the reviewed publications used the term "skills" to mean not only technical or hard skills, but also knowledge, soft skills, and AVB (i.e., attitudes, value, and behaviors) and most of them specified skills broadly and focused on understanding of concepts and principles and adaptability to new concepts or tools as they emerge such as "data analysis and interpretation" instead of a specific skill of "using Power BI and GPT." Furthermore, more human capital publications emphasize demanded skills over required competencies which reflects a shift toward market-driven language

and measurable outcomes in workforce development and education research where skills are more tangible and measurable, making them easier to track and analyze in surveys and job postings. Competencies, on the other hand, are more complex to quantify and assess systematically because their AVB components are shaped by multiple key factors, i.e., individual characteristics, educational experiences, and external, non-curricular factors such as social norms, family values, cultural context and peer and community influence, and other surrounding environment aspects of an individual. These external, non-curricular factors are foundational in shaping personality, ethical orientations, and behavioral tendencies, often before and alongside formal education. While undergraduate education can influence AVB components, its impact is often limited or indirect compared to lifelong social influences (Arias & Punyanunt-Carter, 2017; de las Fuentes, 2024; Chen, 2012; Chen, 2012; Safian et al., 2023; APA, 2017).

While the foundations of modern financial reporting were laid in the 1930s, accounting mainly required manual bookkeeping, foundational reporting, and compliance. This continued until the 1960s, when computerized accounting information systems entered an experimental phase. The period from the 1960s to the 1970s established the foundation for a tech-driven, ethically focused, and globally aware accounting profession. These developments paved the way for significant changes in the 1980s, including the transition from manual ledgers to digital spreadsheets and the evolution of bookkeepers into strategic advisors. Furthermore, this period reshaped education and career paths for the 1980s onward. Looking ahead to the next 5–10 years, accounting professionals will need to blend financial acumen, technological fluency, and strategic insight and possess AIS skills. As derived and synthesized from the reviewed literature, a decade-by-decade overview of the evolution of accounting profession from the 1960s through the projected 2030s, emphasizing the technology landscape, emerging issues, essential skills and focus, and curriculum focus is presented in **Appendix A**. The reviewed literature provides a comprehensive foundation to understand the evolving focus of accounting skills and curricula along with the evolving technology landscape and emerging issues and to assess the alignment between skill demands and curriculum focus for gap identification, and the answer to **RQ1**.

2.2 Key Drivers and Trends of Accounting Profession

Identifying and understanding drivers and trends in accounting profession is crucial for designing a learning and development program that aims to equip accounting talent with the necessary competencies and skills to meet current and future challenges and expectations of relevant stakeholders. The literature review approach employed was a combination of **a systematic review** to identify major forces and emerging developments, **a thematic analysis** to synthesize recurring themes across sources and **a critical review** to evaluate their impacts on essential skills and curriculum priorities. The selection basis includes publications that provide information on key accounting profession drivers and trends published in and after 2020, especially those from accounting

professional bodies and recognized institutes in accounting, economic, and sustainability areas. A theme-based analysis is used to identify and understand key drivers and trends for the current and the next decades (i.e., the 2020s and the 2030s) and their impact on essential skills of accounting profession and on accounting curriculum design and implementation. The thematic grouping helps distill key drivers and trends into digestible categories for ease of further analysis of their impact on demanded skills of accounting profession and accounting curriculum design and implementation over time periods and of future-readiness requirements of accounting profession. Although the themes or forces are deeply interrelated, interdependent, mutually reinforcing, and increasingly convergent into unified challenges and their associated drivers and trends may intersect or overlap, this theme-based grouping method helps provide comprehensive, though not exhaustive, coverage of both internal and external drivers and trends shaping the profession for the analysis. It is also widely considered a leading practice for strategic analysis, foresight, and policy development. Mapping out which theme-based drivers and trends are reshaping the profession helps translate them into explicit core competencies, skills, and learning outcomes, bridging academia supply with industry demand. As these drivers are dynamic, evolving rapidly, and unpredictably, educators, talent development professionals, and researchers should view these drivers including their associated themes and trends as systemic forces and drivers rather than isolated ones in designing a future-ready learning and development program to help prepare future-ready students and professionals to think holistically and possess beyond technical skills.

The study examines both the trends and the underlying drivers to provide a comprehensive understanding of not only what changes occur (the symptoms or the observable changes or patterns), but also how and why these changes take place (the root causes or the root-level influences that initiate or propel change). In addition, though trends often have short life cycles, some trends may grow their influences and evolve to become drivers themselves over time, e.g., social media began as a trend but evolved into an economic and social driver that reshapes politics, business, and personal lives. The understanding of both trends and drivers helps design curriculum "modules" that evolve as the next wave of change emerges.

Key drivers and trends under the four themes, i.e., speed of technology advancement and adoption, volatile global economic and business landscapes, increased regulation and governance, and changing societal expectations and evolving scope and nature, and their impacts on essential skills and focus of accounting profession and on undergraduate accounting curriculum design, development. and implementation which addresses **RQ2** are described in **Appendix B**.

The literature reviewed reveals a profound transformation underway in the accounting profession, driven by technological disruption, globalization, sustainability imperatives, and evolving stakeholder expectations. These forces are reshaping the essential skillset required of accounting talent, emphasizing competencies such as data analytics, ethical judgment, integrated thinking, and strategic communication. Consequently, the focus of undergraduate accounting education has begun to shift

toward more interdisciplinary, forward-looking curricula. However, the extent to which undergraduate programs have adapted remains inconsistent, with notable gaps in embedding emerging competencies and aligning with professional standards. This underscores the urgency for a more deliberate and responsive curriculum design that not only reflects current trends but anticipates future demands.

2.3 Competency Frameworks of the Accounting Profession

In the evolving landscape of education and workforce development, the alignment between competency frameworks and curriculum frameworks has become increasingly critical for ensuring that learners acquire relevant skills, knowledge, and an understanding of theoretical foundations and practical applications to meet business demands and stakeholder expectations. By examining existing literature relevant to competency frameworks and future-ready competencies, particularly those published by authoritative standard-setting bodies and other globally recognized institutions and well-cited academic sources, this review aims to specify **accounting-relevant competency frameworks** which can be effectively used as a reference for defining competencies and skills of future-ready accounting talent and for exploring how they can be harmonized for further analysis to form answers for **RQ3** and **RQ4**.

This **Section** focuses on the review of **six** competency frameworks that have gained recognition in accounting, sustainability, and information systems education and accreditation, i.e., International Education Standards established by International Federation of Accountants (IFAC IES) (IAESB, 2019; IFAC, 2025), 2020 Guiding Principles and Standards for Business Accreditation published by the Association to Advance Collegiate Schools of Business (AACSB Standards) (AACSB, 2022; AACSB, 2023), CPA Evolution Model launched by the American Institute of Certified Public Accountants and the National Association of State Boards of Accountancy (CPA Evolution Model) (AICPA & NASBA, 2020), A Competency Model for Undergraduate Programs in Information Systems published by the Association for Computing Machinery and the Association for Information Systems (IS2020) (Leidig et al, 2020), Sustainability Accounting Competency Model (Industry 4.0 & 2030 Agenda) (Sustainability Accounting Competency Model) (Garcia et al., 2021) and Fourth Industrial Revolution Framework (4IR Framework) (Tsiligiris & Bowyer, 2021).

Competence Matrix for Integrated Reporting Practitioners established by the International Integrated Reporting Council (IIRC Competency Model) (IIRC, 2021) though well recognized is not included in the review because of the overlap risk of the model, e.g., competencies related to ethics, professionalism, and assurance, technology and analytics, and sustainability already addressed in IFAC IES and CPA Evolution Model while Sustainability Accounting Competency Model is included because it has low overlap risk, fills the intersectional gap between sustainability and digital transformation, aligns with global ESG demands and future workforce needs, and complements IS2020 and CPA Evolution Model.

To support a rigorous and focused analysis, each of the six competency frameworks was evaluated against ten widely recognized criteria derived from academic literature and established professional frameworks (see **Table 1**). This evaluation aimed to identify frameworks that are comprehensive and future-oriented, while also highlighting those that exhibit excessive specificity or significant overlap. Frameworks deemed too narrow in scope or redundant were excluded from further analysis, as their inclusion would disproportionately increase analytical complexity and overcomplicating the competency framework development without yielding commensurate value. This selective approach informed the identification of relevant standards to be carried forward into the subsequent analysis for developing a unified competency framework. The result of the framework comparison review based on these criteria is summarized in **Appendix C**.

Table 1 Commonly Accepted Criteria for Comparing Competency frameworks

Criterion	Description	Reference
Outcome Orientation	Focuses on measurable learning outcomes and what ones can do rather than just what they know	Carnaghan, 2017
Skills Integration	Combines technical, interpersonal, cognitive, and ethical skills	Kroon & Alves, 2023
Industry Alignment	Matches current and emerging needs of employers and regulators	IFAC, 2019
Adaptability & Flexibility	Can be updated or customized to reflect changes in technology, regulation, or pedagogy.	Boritz & Carnaghan, 2016
Global Relevance	Recognized or applicable across international contexts	IFAC, 2019
Assessment Compatibility	Supports clear, observable, and reliable assessment methods	Bebeau, 2007; Marion et al., 2020
Pedagogical Soundness	Based on evidence-based teaching and assessment strategies	AACSB, 2022
Stakeholder Inclusiveness	Developed with input from educators, employers, regulators, and students	Kroon & Alves, 2023
Comprehensive Scope	Covers a wide range of competencies including ethics, sustainability, and digital literacy	Carnaghan, 2017
Discipline Fit	Tailored to accounting-specific demands.	Boritz & Carnaghan, 2016

The comparative evaluation of the six competency frameworks has identified four frameworks as foundational and suitable for developing a unified competency framework tailored to a future-ready

accounting profession. IFAC IES and CPA Evolution Model show strong alignment with both traditional and future-ready accounting education while AACSB Standards scores well on governance and assurance but is slightly less integrated with emerging skills. IS2020 offers a forward-looking, modular framework that integrates digital fluency, systems thinking, and strategic competencies highly relevant to modern accounting roles. On the other hand, Sustainability Accounting Competency Model and 4IR Framework provide valuable enhancements, especially in ESG and adaptability, but are best used as complementary layers to the core frameworks due to their limited discipline fit and scope. Their exclusion may be strategically managed by integrating their most relevant elements such as ESG literacy, adaptability, and digital competencies into curriculum design instead of embedding in the unified competency framework.

From the review of the four frameworks, only IFAC IES explicitly provides a description of proficiency levels and proficiency specification that professional accountants need to develop and demonstrate by the end of initial professional development (IPD) in order to perform a role as a professional accountant, i.e., Foundation, Intermediate, and Advanced, while the other frameworks offer only structured competency guidance focusing on domains or categories of competence without specifying proficiency levels. Many modern competency frameworks use a hybrid model by specifying competency domains and allowing institutions or employers to overlay their own proficiency scales by applying such models as Bloom's Taxonomy (i.e., Remember, Understand, Apply, Analyze, Evaluate, Create) and Dreyfus Model (i.e., Novice, Advanced Beginner, Competent, Proficient, Expert). General guiding principles behind these models are as follows.

- Progressive mastery: Build on the previous level
- Observable outcomes: Focus on what learners can do
- Contextual relevance: Tailored to domain (e.g., language, accounting, clinical)
- Assessment alignment: Support valid and reliable evaluation

Synthesizing the literature reviewed on the evolution of the accounting profession, its key drivers and trends, and competency frameworks demonstrates clear connections among them which align with several established theoretical perspectives. **Institutional theory** explains how professional bodies and accreditation standards have historically shaped and continue to influence curriculum design, legitimizing the integration of emerging technologies and ethical considerations (ACCA, 2016). **Human capital theory** underscores the market-driven emphasis on measurable skills that enhance employability, justifying the shift toward analytics, communication, and interdisciplinary knowledge in undergraduate programs (Nie & Mastor, n.d.). **Socio-technical systems theory** highlights the interdependence of technological disruption and human judgment, reinforcing the need for curricula that integrate digital tools with governance, ethics, and strategic insight (Arkhipova, Montemari, Mio, & Marasca, 2024). Finally, **competency-based frameworks** provide structured guidance for translating these drivers into explicit learning outcomes, bridging academia and practice (Thottoli, Islam, Abdullah, Hassan, & Ibrahim, 2024). By situating the decade-by-decade and theme-based analyses within these

theoretical lenses, the review not only traces historical and future skill demands but also justifies curriculum reform strategies that close gaps and prepare accounting graduates for a rapidly evolving professional landscape.

3. Research Methodology

Data were collected using Google Search and Microsoft Copilot across all three focus areas. These tools provided access to academic publications, professional reports, and grey literature. They were selected for their accessibility, cost-effectiveness, and breadth of coverage. Source credibility was evaluated using author qualifications, institutional affiliations, and consistency with established literature. Although no formal scoring matrix was applied, targeted search terms, cross-referencing, and critical appraisal ensured sufficient breadth and relevance.

The **first focus area** examined the evolution of the accounting profession from the 1960s through the 2030s. **Historical review** established a chronological narrative of technological developments, emerging issues, essential skills, and curriculum changes. **Scoping review** mapped skills and curricular emphases across decades while **critical review** assessed the alignment between skill demands and curriculum focus, highlighting gaps. Together, these analyses provided a direct answer to **RQ1**.

The **second focus area** analyzed drivers and trends in the 2020s and 2030s. **Systematic review** identified major forces and emerging developments. **Thematic analysis** synthesized recurring themes across sources and **critical review** evaluated their impacts on essential skills and curriculum priorities. This combination yielded a direct answer to **RQ2**.

The **third focus area** addressed **accounting-relevant competency frameworks**. Competency domains, areas, and representative competencies from selected frameworks were analyzed and harmonized. Keyword and conceptual mapping linked skills identified in the first two domains with competencies specified in the frameworks (**RQ3**). This synthesis produced a unified competency framework for future-ready accounting talent (**RQ4**) and a structured methodology for applying and adapting the framework for education and business organizations (**RQ5**) including recommendations for future research to address **RQ6**.

4. Historical and Evolving Skillset Analyses

The preceding literature review has traced the evolution of accounting profession and highlighted the shifting expectations placed upon accounting profession in response to technological, global economic and business, regulatory, and societal changes. Contextualizing the historical and forward-looking evolution of the accounting profession within accounting-relevant education frameworks enables the design of learning and development programs that are not only anchored in essential legacy competencies but also evolving competencies to respond to emerging global and local imperatives.

Building on the reviewed literature, this **Section** examines and analyses the evolution of competencies across decades and the impact of drivers and trends during the current and the next decades on the essential skills and curriculum design and implementation. The objectives are to identify essential competencies of future-ready accounting talent and areas where skills of accounting talent have lagged technological advancements, ethical demands, and strategic business roles and to propose potential solutions to bridge these skill gaps.

An analysis of essential accounting skills from the 1960s through the projected demands of the 2030s and those impacted by driving forces and trends of the 2020s and the 2030s identifies the evolving skillset required for future-ready accounting profession that balances enduring skills "across decades" such as ethical and technical foundations with "decade-specific" skills for emergent capabilities in such areas as blockchain and quantum computing. The skill classification criteria used in this study are described in **Table 2**.

Table 2 Skill Classification Criteria

Criteria	Across-Decade Skills	Decade-Specific Skills
Longevity of relevance	Enduring value across multiple technological or economic cycles	Tied to emerging trends or technologies likely to evolve or be replaced
Foundational vs. technical	Often foundational (e.g. ethics, critical thinking, communication, lifelong learning)	Often technical or tool-specific (e.g. blockchain auditing, quantum computing)
Rate of obsolescence	Low — skills remain relevant despite shifts in tools or platforms	High — skills may become outdated as tech or regulations change
Transferability across domains	Highly transferable across industries and roles	More specialized to a particular domain or function or task
Anchoring in professional standards	Frequently cited in IES, AACSB, CPA Core competencies	Often found in discipline-specific or emerging frameworks (e.g. CPA Tech Discipline)

In addition, to understand how the accounting-relevant competency frameworks, i.e., IFAC IES, AACSB Standards, CPA Evolution Model and IS2020 address the 159 literature-reviewed skills presented in **Appendix A** and **Appendix B**, this study first eliminated duplicate skills to avoid confusion and redundant analysis. The study then undertakes a mapping process by aligning the remaining 124 skills with the competencies specified in the said frameworks to address **RQ3**. Keyword alignment and conceptual interpretation (e.g., "Cloud accounting platforms & management" aligns conceptually with "Digital & Systems Intelligence") though not explicitly named in any standard formed the mapping basis. In accordance with the discussion in **Section 2.3**, these frameworks were selected

for analysis due to their balanced representation of global, academic, and professional perspectives, aligning with the purpose and scope of this study. Their comprehensive and timely skill coverage also facilitates effective mapping of skills relevant to the accounting profession. This alignment helps confirm the consistency of the literature-reviewed skills and the authoritative frameworks and highlight literature-reviewed competencies and skills that have not yet sufficiently addressed by the standards. However, these standards apply a competency-based model, a standard-harmonized set of competency domains and areas was defined (see **Appendix D**) before a mapping of literature-reviewed skills and standard-harmonized competencies was conducted. To construct the standard-harmonized competency table, a systematic crosswalk methodology was employed to align competency domain and competency areas stated in the IFAC IES, AACSB Standards, the CPA Evolution model, and IS2020. The inclusion criteria of the harmonized competency framework are competencies explicitly specified or implied in at least one framework and considered relevant to future industry needs, supported by stakeholder demand, or aligned with strategic direction or goals of the accounting profession. The criteria are employed to ensure comprehensive coverage across global, academic, and professional benchmarks.

The Framework also specifies a standard-emphasized level of each competency area, i.e., strong, partial, or weak. This approach enables stakeholders to clearly identify the relative importance and depth of coverage expected across different frameworks (IFAC IES, AACSB, CPA Evolution Model, and IS2020), facilitates curriculum design, assessment strategies, and accreditation alignment. It also supports comparative analysis and gap identification, ensuring that competency development is both targeted and responsive to evolving regulatory, academic, and professional expectations. Competency areas marked as **Strong** typically represent enduring, foundational capabilities that have remained essential across decades and are broadly recognized as core to the accounting profession (e.g., Financial Accounting and Reporting, Taxation, Governance, Risk Management, and Internal Controls, IS Foundations, Systems Analysis & Design, Business Laws and Regulations, Research Literacy for Business and Professional Development). **Partial** emphasis reflects transitional areas where standards are actively evolving to address emerging needs, yet still exhibit gaps (e.g., Ambiguity Resilience, Global and Cultural Awareness, Entrepreneurial Mindset) often due to lagging implementation, adherence to legacy principles, or limited interdisciplinary integration. Meanwhile, **Weak** emphasis often signals forward-looking competencies tied to decade-specific drivers and trends (i.e., Advanced Tax Planning & Structuring Continuous Auditing & Monitoring, Public Policy & Regulatory Advocacy) that standards acknowledge as important but have yet to fully incorporate, either due to uncertainty about their long-term relevance or a deliberate “wait-and-see” posture. This classification provides clarity for curriculum alignment, strategic planning, and future-proofing professional education.

Applying the standard-harmonized competency framework above, the results of the 124 literature-reviewed skills mapping and alignment are presented in **Appendix E**. **Table 3** below highlights a persistent gap between the standard-harmonized framework and the reviewed literature,

where 16 out of 52 framework competency areas were underrepresented in the reviewed literature. These consist of 12 strongly emphasized, three partially emphasized, and one weakly emphasized in the standards. Despite varying levels of emphasis, each competency area plays a critical role in shaping a future-ready accounting profession. Strongly emphasized areas such as Sustainability Strategy, Governance & Risk, Assurance Fundamentals, and Practical Accounting and Interdisciplinary Experience reflect evolving demands but remain inconsistently addressed due to curricular and research lifecycle inertia and narrow or siloed disciplinary focus. Partially emphasized areas such as Project and Engagement Management and Entrepreneurial Mindset are often displaced into broader business education, while the weakly emphasized area, Public Policy & Regulatory Advocacy, though traditionally peripheral, is increasingly vital for empowering accounting profession to shape ethical standards and influencing financial ethical leadership and public accountability. Its inclusion in the standard-harmonized framework signals the need for accountants to engage with regulatory environments and societal impact. Collectively, these competency areas regardless of the emphasis level are essential to align academic preparation with the profession's expanding role, increased stakeholder expectation, and public interest mandate and support their inclusion in the standard-harmonized competency framework. In addition, the discrepancies may reflect limitations in the literature search strategy, the selection criteria, and the mapping basis including conceptual interpretation. Future research could address this issue by structurally incorporating broader sources such as practitioner publications, interdisciplinary studies, focus-group interviews to ensure a more holistic alignment among academic inquiry, accounting-relevant frameworks and standards, and stakeholder expectations.

Table 3 Missing Standard-Harmonized Competency Areas in Literature

Competency Area	Standard-Emphasized Level	Basis and Rationale
1. Public Policy & Regulatory Advocacy	Weak	Advocacy is not a traditional accounting role and addressed minimally in curricular and research literature.
2. Management Accounting	Strong	Management accounting's role has been historically fragmented, context-dependent, and often overshadowed by financial reporting and assurance priorities.
3. Assurance Fundamentals	Strong	Only recently elevated in CPA Evolution and IFAC IES and literature still catching up with its expanded scope.

Table 3 Missing Standard-Harmonized Competency Areas in Literature (Cont.)

Competency Area	Standard-Emphasized Level	Basis and Rationale
4. Practical Accounting and Interdisciplinary Experience	Strong	Although emphasized, practical and interdisciplinary experience is not consistently operationalized in curricula or research, especially in siloed programs.
5. Accounting Research	Strong	Research is often treated as academic rather than professional skill, limiting its presence in practice-oriented literature.
6. Personal Effectiveness and Professional Commitment	Strong	Soft skills are acknowledged but not deeply explored in accounting-specific literature; often generalized.
7. Commitment to Public Interest	Strong	Ethical themes are present, but public interest framing is limited in scope and depth in literature.
8. Professional Attitudes and Dispositions	Strong	Attitudes are difficult to measure and often treated as implicit, leading to limited coverage in literature as a standalone competency.
9. Self-directed Development	Strong	Self-directed development is not consistently embedded or emphasized in accounting curricula or literature.
10. Career Readiness	Strong	Accounting-specific readiness is underexplored, often addressed in general employability literature.
11. Career Planning and Adaptability	Strong	Adaptability is acknowledged but not deeply explored in accounting research or textbooks.
12. Sustainability Strategy, Governance & Risk	Strong	ESG strategy is emerging but not yet mainstream in accounting literature and frameworks are still evolving.
13. ESG Data, Metrics & Performance	Strong	ESG metrics are not part of traditional accounting frameworks and are new and inconsistently defined.
14. Project and Engagement Management	Partial	Often treated as a business or consulting skill and thus inconsistently embedded in accounting education or literature.
15. Entrepreneurial Mindset	Partial	Entrepreneurship is not traditionally linked to accounting roles and is often addressed in broader business education instead of in accounting literature.

Table 3 Missing Standard-Harmonized Competency Areas in Literature (Cont.)

Competency Area	Standard-Emphasized Level	Basis and Rationale
16. Assessment of Competence	Partial	Competency-based assessment is recognized but lacks consistent implementation models in literature and curricula.

There are 69 out of 124 literature-reviewed skills that are mapped to the standard-harmonized competency framework. **Table 4** analyzes the other 55 accounting-related skills and reveals that 37 are partially mapped, 10 weakly mapped, and 8 unmapped skills due to their outdated, specific relevance or time-bound, or evolving or emerging nature. Many gaps stem from outdated skills rooted in the 1960s to the 1990s, such as COBOL programming, manual systems bridging, and traditional process flows, reflecting legacy paradigms no longer emphasized. Conversely, literature from the 2000s to the 2020s that has been driven by technological, economic, and social forces introduces emerging competencies such as AI governance, ESG advisory, and quantum computing, which frameworks acknowledge but fail to fully integrate. Framework-related gaps include limited depth in strategic modeling, ethical oversight, and interdisciplinary agility, despite their rising relevance. Rationales consistently highlight insufficient coverage of digital transformation, lack of structured evaluation models, and minimal emphasis on cross-domain problem-solving. This misalignment between evolving literature and accounting-relevant competency frameworks risks producing accounting talent unprepared for volatile, tech-driven environments. Bridging these gaps demands dynamic, future-ready standards and accounting learning and development programs that embed emerging technologies, ethical governance, and strategic foresight.

Table 4 Literature-Reviewed Skills and Standard-Harmonized Competency Framework Gaps

Literature-Reviewed Skill	Source	Type**	Mapping Status	Framework Domain	Framework Area	Rationale
1. Cybersecurity & data integrity	2000s, 2020s	AD	Partially Mapped	Integration of Emerging Technologies	Cybersecurity Governance, Risk, and Assurance	Integration of cybersecurity into core accounting competencies is limited.
2. API and system integration knowledge	2020s	AD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Frameworks lack depth in secure, scalable system design and integration and emerging technologies are not fully embedded in education standards
3. Blockchain	2020s	AD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Standards acknowledge blockchain but lack structured evaluation and assurance competencies.
4. Cloud accounting	Technological forces	AD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Frameworks mention cloud use but lack emphasis on control alignment and platform mastery.
5. Cloud computing awareness	2010s	AD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Frameworks offer surface-level cloud literacy but not architectural or strategic integration.
6. AI/ML development and application	2030s	AD	Partially Mapped	Integration of Emerging Technologies	Emerging Technologies	Frameworks acknowledge AI/ML but technical depth is not addressed and integration with business problem-solving is limited.
7. AI governance	2030s	AD	Partially Mapped	Integration of Emerging Technologies	Technology Ethics and Governance	Frameworks acknowledge AI but lack structured governance and accountability models.
8. Ethics in AIS (Accounting Information Systems)	2030s	AD	Partially Mapped	Integration of Emerging Technologies	Technology Ethics and Governance	Frameworks emphasize ethics in general but not on evaluation of tech-enabled accounting systems. The coverage is limited to algorithmic bias and accountability.

Table 4 Literature-Reviewed Skills and Standard-Harmonized Competency Framework Gaps (Cont.)

Literature-Reviewed Skill	Source	Type**	Mapping Status	Framework Domain	Framework Area	Rationale
9. Mentorship & knowledge transfer	Social forces	AD	Partially Mapped	Lifelong Learning and Continuing Professional Development	Professional Development	It is underrepresented in formal competency models. Frameworks emphasize self-development but not structured mentorship and transfer.
10. Analytical thinking to interpret financial data in general and the context of volatile markets	1970s, 1980s	AD	Partially Mapped	Professional Skills	Analytical and Systems Thinking	Standards promote critical thinking but do not fully address market volatility, dynamic, real-time financial modeling and scenario-based analytics.
11. Systemic thinking	Economic forces	AD	Partially Mapped	Professional Skills	Analytical and Systems Thinking	Frameworks focus on systems but lack depth in modeling long-term, multi-sector impacts, and cross-domain interdependencies.
12. Change management	2020s	AD	Partially Mapped	Professional Skills	Change Management	It is underdeveloped in frameworks, e.g., lacking agile and digital change management tools, limited coverage of tech-driven change processes.
13. Advanced communication (multi-modal)	2020s	AD	Partially Mapped	Professional Skills	Communication, Collaboration, and Relationship Management	Frameworks emphasize traditional formats but lag in multi-modal fluency across platforms.
14. Communication skills to explain financial data and results to stakeholders	1960s, 1970s, 1980s	AD	Partially Mapped	Professional Skills	Communication, Collaboration, and Relationship Management	Frameworks lack emphasis on tailoring financial narratives for varied audiences.

Table 4 Literature-Reviewed Skills and Standard-Harmonized Competency Framework Gaps (Cont.)

Literature-Reviewed Skill	Source	Type**	Mapping Status	Framework Domain	Framework Area	Rationale
15. Scenario modeling and planning	Economic forces	AD	Partially Mapped	Professional Skills	Strategic Advisory & Decision-Making	Frameworks lack emphasis on modeling tools for decision-making.
16. Purpose-driven leadership	Social forces	AD	Partially Mapped	Professional Skills	Strategic Organizational Leadership and Execution	Frameworks promote values-based leadership but lack purpose-centric alignment.
17. Socially responsible decision-making & stakeholder engagement	Social forces	AD	Partially Mapped	Sustainability and ESG Reporting	ESG Impact, Materiality & Stakeholder Engagement	Frameworks support ethics but lack cohesive ESG stakeholder engagement models.
18. ESG awareness and sustainability accounting	2010s	AD	Partially Mapped	Sustainability and ESG Reporting	Sustainability Foundations & ESG Frameworks	Frameworks lack unified sustainability accounting models and reporting integration as ESG standards are evolving.
19. ESG advisory (e.g., ESG-linked financial modelling)	Economic forces	AD	Partially Mapped	Sustainability and ESG Reporting	Sustainability Reporting & Assurance	Frameworks underrepresent ESG-linked strategy and assurance competencies.
20. Tax advisory and analytical expertise	2010s	AD	Partially Mapped	Technical Competence	Advanced Tax Planning & Structuring; Taxation	Advisory depth exceeds the focus and coverage of frameworks, e.g., limited integration of digital tools and global tax complexity.
21. Forensic accounting	2000s	AD	Partially Mapped	Technical Competence	Audit and Assurance	While fraud detection is covered, digital forensic methods and emerging tech tools are not fully embedded.

Table 4 Literature-Reviewed Skills and Standard-Harmonized Competency Framework Gaps (Cont.)

Literature-Reviewed Skill	Source	Type**	Mapping Status	Framework Domain	Framework Area	Rationale
22. Data privacy regulations	Regulatory Forces	AD	Partially Mapped	Technical Competence	Business Laws and Regulations	Frameworks lag behind evolving international regulations and tech-enabled compliance practices.
23. Deep knowledge of SOX and other new laws	2000s	AD	Partially Mapped	Technical Competence	Business Laws and Regulations	Standards address legal frameworks but do not fully incorporate IT-enabled controls and testing.
24. Regulation agility	2030s	AD	Partially Mapped	Technical Competence	Business Laws and Regulations	Frameworks are slow to adapt to regulatory innovation and agile compliance models.
25. Strategic foresight	Economic forces	AD	Partially Mapped	Technical Competence	Business Strategy and Management	Standards support strategy but do not fully integrate foresight methodologies or predictive and disruption modeling tools.
26. Strategic thinking	1990s, 2010s, 2020s	AD	Partially Mapped	Technical Competence	Business Strategy and Management	Frameworks promote strategic alignment but underemphasize digital transformation and tech-driven strategy
27. IT risk management	2000s	AD	Partially Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	IT-specific risk is not emphasized and limitedly linked to strategic risk frameworks.
28. IT SOX compliance	2000s	AD	Partially Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Frameworks lack emphasis on automated controls and IT audit integration.
29. SOX compliance	2000s	AD	Partially Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Frameworks cover compliance but not tech-enabled auditability integration design.

Table 4 Literature-Reviewed Skills and Standard-Harmonized Competency Framework Gaps (Cont.)

Literature-Reviewed Skill	Source	Type**	Mapping Status	Framework Domain	Framework Area	Rationale
30. Strategic risk management and analysis	Economic forces	AD	Partially Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Frameworks underrepresent predictive risk tools and strategic scenario planning.
31. Interdisciplinary agility (finance, tech, strategy) to solve complex business problems	2030s	AD	Partially Mapped	Technical Competence	Organizational Systems, Business Processes, and Strategic Integration	Frameworks lack structured competencies for solving complex problems across domains and cross-functional integration is not fully developed.
32. Architectural understanding of strategic AIS system design and optimization	2030s	AD	Partially Mapped	Technical Competence	Systems Analysis & Design	Frameworks lack depth in strategic AIS design and optimization.
33. ERP mastery to manage end-to-end processes	2020s	AD	Partially Mapped	Technical Competence	Systems Analysis & Design	Frameworks mention ERP but do not fully address end-to-end process fluency and integration and control alignment.
34. Human-centric design	Technological forces	AD	Partially Mapped	Technical Competence	Systems Analysis & Design	Frameworks underrepresent user-centered system and process design and design thinking is not fully embedded.
35. Systems analysis	1980s	AD	Partially Mapped	Technical Competence	Systems Analysis & Design	Frameworks lack structured tools for analyzing complex digital systems and have limited modeling depth for modern systems.
36. Tax regulatory adaptation and tax software proficiency	2000s	AD	Partially Mapped	Technical Competence	Taxation	Frameworks underrepresent digital tax systems and software fluency and integration of tax tech tools.

Table 4 Literature-Reviewed Skills and Standard-Harmonized Competency Framework Gaps (Cont.)

Literature-Reviewed Skill	Source	Type**	Mapping Status	Framework Domain	Framework Area	Rationale
37. Taxation foundation	1990s	AD	Partially Mapped	Technical Competence	Taxation	Frameworks lack emphasis on multijurisdictional compliance and digital adaptation and have basic coverage without global harmonization.
38. Quantum computing awareness and impact assessment	2030s	AD	Unmapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Frameworks do not yet address quantum paradigms or their accounting implications.
39. Ethical AI auditing	Regulatory Forces	AD	Unmapped	Integration of Emerging Technologies	Technology Ethics and Governance	Frameworks lack competencies for auditing algorithms and AI decision processes and it is not embedded in assurance frameworks
40. Cross-border tax strategy	Economic forces	AD	Unmapped	Technical Competence	Advanced Tax Planning & Structuring	This skill is highly specialized and context-dependent. Frameworks address taxation broadly, they do not provide guidance on international tax strategy or cross-border structuring.
41. COBOL or FORTRAN programming fundamentals	1960s	SD	Unmapped	Technical Competence	Application Development and Programming	Frameworks have shifted from legacy to modern languages and paradigms.
42. Digital asset accounting	Economic forces	AD	Unmapped	Technical Competence	Financial Accounting and Reporting	It is an emerging area with limited standardization. Frameworks do not yet fully address crypto and digital asset reporting and accounting-specific applications.
43. Manual and computer-based systems bridging	1960s	SD	Unmapped	Technical Competence	Systems Analysis & Design	Frameworks have shifted to digital-first systems, reducing emphasis on manual bridging which becomes legacy skill with low current relevance.

Table 4 Literature-Reviewed Skills and Standard-Harmonized Competency Framework Gaps (Cont.)

Literature-Reviewed Skill	Source	Type**	Mapping Status	Framework Domain	Framework Area	Rationale
44. Systems analysis and design (manual-to-batch transition)	1960s	SD	Unmapped	Technical Competence	Systems Analysis & Design	Frameworks emphasize real-time systems over batch processing which is a legacy process.
45. Systems analysis and design (traditional accounting/process flows)	1960s	SD	Unmapped	Technical Competence	Systems Analysis & Design	Traditional accounting flows are outdated and frameworks have evolved beyond traditional accounting flows.
46. AI collaboration	2030s	AD	Weakly Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Human-AI teaming is an emerging competency but not yet formalized.
47. Interoperability and ecosystem management	2030s	AD	Weakly Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Frameworks lack competencies for managing digital ecosystems and interoperability.
48. AI oversight	Technological forces	AD	Weakly Mapped	Integration of Emerging Technologies	Technology Ethics and Governance	This skill demands forward-looking, interdisciplinary, and ethically grounded capabilities that existing standards only limitedly address or have yet to formalize.
49. Strategic advisory	1980s, 2020s, 2030s, Technological forces	AD	Weakly Mapped	Professional Skills	Strategic Advisory & Decision-Making	Frameworks emphasize traditional accounting boundaries but lack structured integration of multidisciplinary, future-oriented, and ethically complex advisory capabilities.

Table 4 Literature-Reviewed Skills and Standard-Harmonized Competency Framework Gaps (Cont.)

Literature-Reviewed Skill	Source	Type**	Mapping Status	Framework Domain	Framework Area	Rationale
50. Interpreting AI-generated tax insights, policy forecasting, sustainability-related tax advisory	2030s	AD	Weakly Mapped	Technical Competence	Advanced Tax Planning & Structuring	Emerging skill in AI-generated tax forecasts and sustainability modeling and this is not yet standardized.
51. Tax digital integration and ethical judgment	2020s	AD	Weakly Mapped	Technical Competence	Advanced Tax Planning & Structuring	Frameworks lack structured competencies for ethical evaluation of digital tax outputs and have limited coverage of digital judgment frameworks.
52. Blockchain assurance	Technological forces	AD	Weakly Mapped	Technical Competence	Audit and Assurance	Assurance over blockchain systems is emerging and frameworks underrepresent transaction validation and audit in decentralized systems.
53. Global finance and regulations	Economic forces	AD	Weakly Mapped	Technical Competence	Economics	Frameworks underrepresent cross-border regulatory impacts and global financial systems and have limited macroeconomic integration focus.
54. PC & Spreadsheet literacy	1970s	SD	Weakly Mapped	Technical Competence	IS Foundations	Frameworks have evolved beyond basic literacy to enterprise systems fluency.
55. Manual-to-digital process bridging	1990s	SD	Weakly Mapped	Technical Competence	Systems Analysis & Design	Workflow transformation from manual to digital is weakly emphasized and transition skills underrepresented.

** AD – Across Decade Skills; SD – Specific Decade Skills

Based on the preceding analysis, including the analysis of the decade-based skills and the curriculum focus outlined in **Appendix A** and the influence of key drivers and trends in the accounting profession presented in **Appendix B**, the following issues of the undergraduate accounting curriculum have been identified as contributing to skill gaps among accounting talent.

1. **Outdated content and emphasis** from delayed adoption of emerging content into curricula, often due to regulatory or regional constraints (AICPA & NASBA, 2021), e.g., the requirement to align with national qualification frameworks, which may take years to revise, the need for approval from professional organizations, which have their own cycles, limitation of technology infrastructure or trained faculty to teach emerging topics. Noted evidence is the overlapping of curriculum contents from previous decades which indicates a need for curriculum evolution (Howard, 2013).
2. **Insufficient focus on soft skills to support the shift from compliance to strategic thinking**, giving priority to technical and compliance-oriented knowledge over crucial skills like communication, critical thinking, strategic advisory, business acumen, data-driven decision-making and ethical judgment, for example, adaptability to remain relevance, requiring integration of adaptability into accounting programs and syllabi to remain responsive to industry shifts (Hassan & Saleh, 2023). Graduates are ill-equipped for the interdisciplinary, leadership, and advisory roles they are expected to assume in the modern workplace.
3. **Fragmented and Siloed curricula and course structures design**, adding new, critical topics as isolated modules or courses, instead of integrating throughout the program, causing a disconnect between core accounting principles and their application in a modern technological and regulatory context, e.g., separation courses for theoretical knowledge and real-world technological applications course (Senik, Broadbent, & Manaf, 2013).
4. **Lagging Pedagogy**, often applying traditional (lecture-based) teaching methods and failing to keep pace with the rapid evolution of technology and the profession. Students lack the experiential, hands-on learning necessary to develop practical skills and the ability to adapt and solve real-world problems.
5. **Limited hands-on technology exposure**, for example, insufficient exposure to emerging technologies and tools and enterprise systems, negatively affecting learner preparedness (Yao, 2023). This especially happens in schools where AIS courses are elective or lecture-based with the focus on technical foundation.
6. **Curriculum gaps to support workforce readiness**, varying by the 2025 status of undergraduate cohorts by decade as presented in **Table 5** (American Institute of CPAs & NASBA, 2021; Bowles et al., 2020; Mahambo, 2020; Nie & Mastor, 2024; Phan et al., 2020). Although retirees and near-retirees are no longer actively participating in the workforce, the impact level of the 2020s and the 2030s characteristics on their cohorts can be high to very high because those gaps affect their entire career trajectories after retirement which include such

common post-retirement career paths as encore career, part-time or freelance, entrepreneurs, volunteering and mentoring. With the current trends and attempts to modernize and innovate accounting curriculum and accounting pedagogy, the curriculum gaps severity for undergraduates from the 2020s and the 2030s generations are expected to be low to very low. The workforce that needs to reskill and retrain by themselves, their employers, and other organizations, e.g., not-for-profit organizations, public organizations, and relevant government agencies are those student cohorts of the 1990s-2010s. If this is not done, it may impact on the work quality and work life of younger staff through mentoring and leadership using outdated practices or principles.

Table 5 Impact of Curriculum Gaps on Workforce Readiness by the Decade of Undergraduate Entry**

Decade of Entry	Current Status	Curriculum Gap Severity	Key Gaps	Impact on Workforce Readiness*
1960s	Retiree	Very High	Manual accounting, lack of IT integration	Limited relevance to modern systems; retired before digital shift
1970s	Retiree	Very High	Minimal exposure to global standards, technologies	Retired with legacy knowledge; limited adaptability
1980s	Nearing retirement/ Retiree	High	Early AIS exposure, fragmented IT training	Mid-career adaptation; some retraining needed
1990s	Mid-career professional	Moderate to High	Limited data analytics, outdated AIS modules	Struggles with tech-driven roles; upskilling required
2000s	Established professional	Moderate	Basic AIS, low emphasis on automation & ESG	Adaptable but needs deeper tech and regulatory fluency
2010s	Young/Early-career professional/ Graduates	Low to Moderate	Inconsistent integration of AI, cloud, ESG	Better prepared; still catching up with rapid tech shifts
2020s	Undergraduate/ High school	Low	Curriculum evolving but uneven globally	High adaptability; exposed to hybrid and AI tools
2030s	Pre school/ Elementary/ Middle school	Projected Very Low	Future-ready, modular, tech-embedded learning	Expected to be highly agile and digitally fluent

** Assuming individuals begin university at age 18, retire at age 60, and acquire most of their skills through formal education.

In conclusion, the evolution of accounting curriculum for undergraduate students reflects the broader transformation of the accounting profession in the digital age. These changes are driven by the need to integrate modern technologies, adapt to changing business needs, and prepare students for the evolving demands of the profession. To bridge these evolving gaps, the following actions have been discussed in literature (Accounting Insights Team, 2024; Berg, 2007; Brabete et al., 2024; Johnson, 2024; Lindsay, 2016).

1. **Curriculum Transformation**: Pursuing holistic curriculum redesign that focuses on integration among courses and adopts backward design approach. It goes beyond curriculum modernization which focuses only on updating content to reflect current and emerging knowledge.
2. **Experience Learning Enhancement**: Establishing a dedicated hands-on learning infrastructure and ecosystem for students to practice with real-world and simulated scenarios, cases, and data and implementing project-based learning requiring students to work on complex, real-world case studies, use technology, collaborate, and present their findings.
3. **Priority of Soft & Interdisciplinary Skills**: Embedding communication and collaboration in coursework, integrating ethical conducts and decision-making module in each course, promoting cross-disciplinary mindset and practice in coursework.
4. **Faculty Development Investment**: Offering regular workshops and training for faculty to master modern technologies and pedagogical methods, and rewarding and recognizing faculty who design and implement new ways of teaching and learning.
5. **Pedagogical Innovations**: Transform teaching methods on how accounting/AIS undergraduates are taught to enhance engagement and learning to achieve more interactive, inclusive, and learner-centered experience, e.g., by adopting active learning, flipped classrooms, project-based learning approaches, by using AI and other technologies, and by requiring facilitation, adaptability, and empathy skills of teachers.
6. **Lifelong Learning**: Equip students not just with technical know-how, but with the mindset, adaptability, and tools to keep growing professionally long after graduation by having necessary infrastructure and tools for student and faculty training and industry partnerships such as AI, search engines, and knowledgebases, and integrating or embedding lifelong learning outcomes as part of the development of such core skills and teaching pedagogy as follows.
   - Critical thinking and problem-solving: Encourage analysis beyond rote memorization through case studies, simulations, and industry collaboration to co-develop modules to ensure relevance and future-readiness
   - Information and data literacy: Emphasize technical concepts and methods to locate, evaluate, and use data and information effectively and ethically
   - Adaptability: Focus interdisciplinary awareness and application to blend accounting with economics, IT, business strategy, and other sciences and practices.
   - Ethical reasoning: Integrate ethics modules to prepare students for real-world dilemmas.

- Self-directed learning and self-reflection: Independently explore topics and refine understanding through interdisciplinary modules and projects that require independent research and reflection.

7. **Collaboration with Industry**: Partnering with professional accounting bodies, local firms, and technology companies to co-develop curriculum and projects, and establishing a formal process and repository to gather regular feedback from employers to ensure the curriculum is aligned with current and future market demands.

5. Defining A Unified Competency framework for Future-Ready Accounting Talent

This Section proposes a unified competency framework for future-ready accounting talent which can be tailored to provide the foundation for the design, development, and implementation of accounting learning and development programs to address RQ4. The aim is to minimize redundancy and fragmentation across existing competency frameworks relevant for accounting profession. This unified approach also seeks to bridge the gap between academic preparation and professional readiness, ensuring that accounting talent is not only competent in traditional domains but also resilient in the face of emerging challenges. The following describes guiding principles for the development of a unified competency framework for future-ready accounting talent.

1. It is a scalable and generic competency framework but specific enough to provide foundation for the design, development, and implementation of learning and development programs for future-ready accounting talent. It thus does not provide structure and description of proficiency levels, which some standards imply but do not explicitly define.
2. It should not specify competencies at a very granular level which may cause crosswalk ambiguity.
3. Domains and competency areas were synthesized based on conceptual overlap and functional similarity across the most recent published accounting-relevant accounting framework versions though these frameworks may lag current and future expectations of the accounting profession.
4. It should be robust and resilient to respond to current and emerging technologies, innovations, drivers and trends, and opportunities of accounting profession.
5. It should support modular curriculum design, competency-based assessment, and cross-disciplinary integration.
6. It should reflect both traditional but essential accounting competencies and emerging accounting capabilities, ensuring relevance in digital and strategic contexts.
7. It should support the bridging of skills and competencies by structurally organizing into meaningful and coherent skill cluster-based competency areas that highlight their practical relevance and the expected learning outcomes or competencies that mirror professional demands. In the context of a future-ready accounting talent, competency areas provide a

scalable foundation for integrating emerging technologies, interdisciplinary knowledge, and evolving industry demands into learning and development programs.

Applying the above principles and the analysis results from **Section 3**, **Table 6** presents **a Unified Competency Framework for Future-Ready Accounting Talent** by extending the standard-harmonized competency framework with competency classification and representative competencies. The aim of the Framework is to provide a generic competency blueprint that could be adopted or efficiently customized by academic and non-academic organizations to suit their purposes and objectives for the design, development, and implementation of learning and development programs for future-ready accounting talent.

Table 6 A Unified Competency framework for Future-Ready Accounting Talent

Competency Area	Description	Classification	Rationale	Representative Competency
Domain 1: Technical Competence				
1. Financial Accounting and Reporting	Applying accounting principles and frameworks to prepare financial statements	Layer 1	Core technical accounting skills - foundational to professional practice	See **Appendix F**
2. Management Accounting	Budgeting, forecasting, cost control, and performance evaluation	Layer 1	Budgeting, forecasting, and cost control - essential for all accounting professionals	
3. Financial Analysis and Management	Financial strategy, valuation, and investment decision-making	Layer 2	Advanced valuation, financial modeling, and strategic decision-making	
4. Taxation	Tax compliance, ethics, and legal principles	Layer 1	Covers core tax compliance and legal principles - essential for all accounting professionals	
5. Advanced Tax Planning & Structuring	Multijurisdictional tax planning and optimization	Layer 2	Specialized, multijurisdictional tax strategies and advisory roles	
6. Audit and Assurance	Audit lifecycle, standards, and reporting	Layer 1	Core audit lifecycle and standards are foundational to accounting practice	
7. Continuous Auditing & Monitoring	Use of automation and real-time data to perform ongoing audit procedures and risk assessments.	Layer 3	Involve automation and real-time data - aligned with tech disruption	

Table 6 A Unified Competency framework for Future-Ready Accounting Talent (Cont.)

Competency Area	Description	Classification	Rationale	Representative Competency
8. Governance, Risk Management, and Internal Controls	Enterprise and IT risks and controls, risk management, internal control, and governance frameworks	Layer 1	Core to professional ethics and internal control systems	
9. IS Foundations	IS architecture and IS design and management including IS infrastructure, enterprise systems and network architecture and design, cloud-based platforms and accounting systems, IS risks and opportunities for business	Layer 1	Cover essential IS architecture and enterprise systems - critical for modern accounting foundation	
10. Application Development and Programming	Programming paradigms and automation	Layer 2	Require specialized programming skills for automation and analytics	
11. Systems Analysis & Design	Modeling and designing business information systems	Layer 2	Advanced modeling and system design for business processes	
12. Business Laws and Regulations	Legal frameworks and data governance	Layer 1	Legal frameworks and data governance are foundational to ethical accounting	
13. Economics	Micro and macroeconomic principles	Layer 1	Core economic principles underpin business and accounting decisions	
14. Organizational Systems, Business Processes, and Strategic Integration	Business models, workflows, and strategic alignment	Layer 2	Integrate cross-functional knowledge - supports strategic alignment	
15. Business Strategy and Management	Strategic planning, organizational design, and behavior	Layer 2	Strategic planning and organizational behavior - advanced competencies	
16. Assurance Fundamentals	Core assurance principles and judgment	Layer 1	Core assurance principles and professional judgment - foundational	
17. Practical Accounting and Interdisciplinary Experience	Applying accounting in real-world scenarios	Layer 2	Real-world application and integration of multiple domains	

Table 6 A Unified Competency framework for Future-Ready Accounting Talent (Cont.)

Competency Area	Description	Classification	Rationale	Representative Competency
18. Research Literacy for Business and Professional Development	Designing, conducting, and applying research using credible data and tools to generate actionable insights for accounting, business, and professional development	Layer 2	Involve research design, AI tools, and business application	
Domain 2: Professional Skills				
19. Ambiguity Resilience	Adapting to uncertainty and complexity	Layer 0	Develop adaptability and problem-solving under uncertainty to prepare students for Layer 1 scenarios	See **Appendix F**
20. Project and Engagement Management	Managing projects and engagements effectively	Layer 2	Requires structured methodologies and leadership	
21. Change Management	Leading and adapting to organizational change	Layer 3	Responds to dynamic environments and organizational transformation	
22. Innovation and Impact	Applying innovation to solve problems and create value	Layer 3	Emphasizes emerging technologies and value creation	
23. Global and Cultural Awareness	Operating effectively in diverse global contexts	Layer 0	Builds inclusive thinking and cross-cultural sensitivity - foundational for ethical and global accounting practice	
24. Communication, Collaboration, and Relationship Management	Communicating and collaborating across contexts	Layer 0	Foundational interpersonal and communication skills - essential for all professional contexts	
25. Personal Effectiveness and Professional Commitment	Managing responsibilities with discipline and ethics	Layer 0	Build discipline, ethics, and accountability - core traits for professional readiness.	
26. Strategic Organizational Leadership and Execution	Leading teams and executing tasks strategically	Layer 3	Involve team leadership and strategic execution	

Table 6 A Unified Competency framework for Future-Ready Accounting Talent (Cont.)

Competency Area	Description	Classification	Rationale	Representative Competency
27. Entrepreneurial Mindset	Creating value through innovation and initiative	Layer 0	Encourage initiative and creativity - foundational for innovation in accounting and business	
28. Analytical and Systems Thinking	Applying critical thinking and systems analysis and having ability to analyze and evaluate alternatives and make reasonable and ethical decision-making	Layer 2	Critical thinking and systems analysis - supports specialization	
29. Strategic Advisory & Decision-Making	Integrating insights for high-impact decisions	Layer 2	High-level decision-making and scenario planning	
Domain 3: Professional Values, Ethics, and Attitudes				
30. Ethical Principles and Professional Conducts	Applying ethical principles and global codes	Layer 1	Core ethical standards and global codes – foundational to professional practice and behaviors	See **Appendix F**
31. Professional Skepticism and Judgment	Exercising skepticism and ethical reasoning	Layer 1	Essential for audit, assurance, and ethical decision-making	
32. Commitment to Public Interest	Acting in the public interest and promoting trust	Layer 1	Upholding public trust and transparency - core professional value	
33. Professional Attitudes and Dispositions	Upholding fairness, empathy, and moral courage	Layer 1	Fairness, empathy, and moral courage - foundational behaviors	
34. Public Policy & Regulatory Advocacy	Ability to engage with regulatory bodies, contribute to policy development, and advocate for ethical and transparent financial systems.	Layer 3	Engaging with policy and regulation - aligned with emerging leadership roles.	
Domain 4: Lifelong Learning and Continuing Professional Development				
35. Professional Development	Sustaining competence through learning and reflection	Layer 1	Lifelong learning and competence maintenance – foundational to learning and development	See **Appendix F**

Table 6 A Unified Competency framework for Future-Ready Accounting Talent (Cont.)

Competency Area	Description	Classification	Rationale	Representative Competency
36. Assessment of Competence	Evaluating and reflecting on professional capabilities	Layer 0	Support metacognition and self-evaluation - essential for reflective learning and improvement	
37. Lifelong Learning Mindset and Orientation	Embracing continuous learning and adaptability	Layer 0	Cultivate adaptability and openness to change - foundation for continuous competence	
38. Self-directed Development	Managing one's own learning and growth	Layer 0	Encourage independent learning and goal-setting - critical for navigating academic and professional growth.	
39. Career Readiness	Demonstrating readiness for evolving professional roles	Layer 0	Prepare students for transition into professional roles - supports employability and engagement	
40. Career Planning and Adaptability	Navigating career transitions and aligning goals	Layer 1	Navigating career transitions - foundational for evolving roles	
Domain 5: Integration of Emerging Technologies				
41. Digital & Systems Intelligence	Applying digital technologies and systems and technology-enabled decision making by using digital tools	Layer 2	Applying digital tools and systems - supports specialization	See **Appendix F**
42. Data and Information Management and Governance	Managing and governing data assets	Layer 2	Managing data assets – advanced technical competency	
43. Data and Business Analytics	Using analytics to support business analysis and decision-making and communicating insights through visualizations	Layer 2	Using analytics for decision-making - specialized and cross-functional	
44. Technology Ethics and Governance	Governing technology use ethically	Layer 2	Ethical tech use and governance - advanced and interdisciplinary.	

Table 6 A Unified Competency framework for Future-Ready Accounting Talent (Cont.)

Competency Area	Description	Classification	Rationale	Representative Competency
45. Emerging Technologies	Adapting to and integrating modern technologies	Layer 3	Evaluating and adapting to emerging technology impact - advanced and interdisciplinary	
46. Cybersecurity Governance, Risk, and Assurance	Managing cybersecurity risks and controls	Layer 2	Managing cybersecurity risks - specialized technical domain.	
47. Secure Computing and System Security	Ensuring system security and data protection	Layer 2	System protection and controls - advanced technical competency	
Domain 6: Sustainability and ESG Reporting				
48. Sustainability Foundations & ESG Frameworks	Understanding sustainability as a systemic concept and ESG as a reporting subset	Layer 2	ESG standards and sustainability - specialized reporting knowledge	See **Appendix F**
49. Sustainability Strategy, Governance & Risk	Integrating ESG into strategy, governance, and risk management	Layer 3	Integrating ESG into strategy - adaptive and future-focused	
50. Sustainability Reporting & Assurance	Preparing and assuring ESG disclosures using global standards	Layer 2	Require cross-disciplinary and specialized sustainability-relevant skills for reporting and assurance purposes	
51. ESG Data, Metrics & Performance	Managing ESG data and evaluating performance indicators	Layer 3	Evaluating ESG impact - emerging and stakeholder-driven	
52. ESG Impact, Materiality & Stakeholder Engagement	Assessing ESG impact and engaging stakeholders ethically	Layer 3	Ethical ESG engagement - aligned with global shifts	

The competency classification presented in **Table 6** is based on the **Adaptive Competency Layer Model (ACLM) for Classification of Accounting Talent Competency**, a nuance curriculum-oriented model developed to support seamless cascading of future-ready accounting competencies into program learning outcomes, course objectives, and instructional design. It integrates elements from multiple well-established models described in **Table 7** but reconfigures them into a layered structure that is uniquely suited for accounting talent development in a volatile, uncertain, complex, and ambiguous world.

Table 7 Competency Classification Models for Forming ACLM

Framework	Purpose	Rationale
Bloom's Taxonomy	Align learning objectives with cognitive complexity: from foundational knowledge ("Remember") to innovation ("Create"). While a competency area can support learning outcomes at all Bloom levels, its classification into a layer depends on the dominant cognitive demand and curriculum role	Universally recognized, easy to apply to learning outcomes and assessments.
PCMM (Professional Competency Maturity Model)	Provide levels of student and professional journey and growth from general readiness to strategic and future-oriented leadership	Align with IFAC's International Education Standards (IES 1–8) and create a structured pathway for learners to grow in capability and readiness
T-Shaped Professional Model	Support horizontal breadth and vertical depth	Learners build horizontal breadth (Layer 0 and 1) before choosing vertical depth (Layer 2 and 3).
Agile Design	Support robustness and sustainability of the competency framework	Layer 3 uses sprint-based updates and industry feedback loops

Based on the integration of the models, the ACLM classifies competencies based on their curriculum role, cognitive depth, and update frequency, ensuring foundational knowledge remains consistent while emerging skills evolve responsively. The model is structured into four interlocking layers designed to be modular, scalable, and responsive to change suitable for undergraduate programs and lifelong learning. Each layer is aligned with tier structure such as Bloom's Taxonomy: from remembering to creating, professional maturity stages such as IFAC IES's implied professional competency maturity model of Entry-Staff-Supervisor-Manager- Executive, T-shaped Model of vertical depth (specialization) and horizontal breadth (enabling skills), and agile design of curriculum governance cycles as described in **Table 8**. Unlike traditional models, ACLM embeds curriculum agility by design minimizing unnecessary revisions while maximizing relevance. It supports automated mapping to course types (e.g., core, major, elective), assessment strategies, and lifelong learning pathways. The model is designed to be robust and sustainable through the application of modularity where competencies are grouped into flexible layers that can be updated independently, scalability that it can be applied across undergraduate, postgraduate, and CPD programs and scaled to different institutions, industries, and national frameworks, and feedback-driven evolution, especially in Layer 3 which is explicitly designed to absorb emerging trends and industry feedback and institutions can revise Layer 3 competencies annually based on market signals, tech disruptions, or regulatory shifts.

Table 8 Adaptive Competency Layer Model (ACLM) for Classification of Accounting Talent Competency Area

Description	Basis & Rationale	Curriculum Role	Update Cycle**	Reference
Layer 0: Foundational Readiness				
Competencies that support general academic, cognitive, digital, and interpersonal development. In the context of an undergraduate accounting program, it represents general foundational competencies that underpin and prepare students for Layer 1 and beyond competencies. These are not discipline-specific but are essential for success in accounting education and practice.	Ensure learners possess cognitive and digital fluency before engaging with domain-specific content. Aligns with PCMM Level 1 and Bloom's "Remembering" and "Understanding" levels.	General education and academic preparation embedded in Year 1 introductory courses, orientation, entry courses, onboarding modules or bridging courses.	Every 5 years	Joynt, 2022; Biggs, 1996
Layer 1: Core Professional Foundations				
Stable, universal accounting competencies essential for all professionals. Includes financial reporting, ethics, audit, taxation, and governance.	These competencies form the horizontal base of the T-shaped model. They are relatively stable and align with and aligns with PCMM Level 2, IAESB's IES and Bloom's "Apply" and "Analyze" levels.	Discipline-specific technical and ethical foundations delivered in Year 1 and 2 Core courses.	Every 3–5 years	IAESB, 2019; Barile et al., 2015

Table 8 Adaptive Competency Layer Model (ACLM) for Classification of Accounting Talent Competency Area (Cont.)

Description	Basis & Rationale	Curriculum Role	Update Cycle**	Reference
Layer 2: Differentiation & Specialization				
Advanced competencies for career distinction. Includes forensic accounting, public sector finance, advanced audit/tax, and sustainability reporting.	Represents vertical depth in the T-shaped model. Supports specialization and aligns with PCMM Level 3 and Bloom's "Analyze" and "Evaluate."	Advanced technical, analytical, and strategic competency development delivered in Year 2 and 3 major or specialization courses	Every 3 years	Barile et al., 2012; IMA, 2023; IMA, 2025
Layer 3: Adaptive & Emerging Frontiers				
Competencies for responding to VUCA, tech disruption, and global shifts. Includes AI in accounting, ESG, blockchain, agile finance, and integrated reporting.	Reflects agile curriculum design and Bloom's "Create" level. Requires annual review to remain relevant. Supports PCMM Level 4 and possibly Level 5 and future-readiness.	Future-ready, agile, and transformative competency delivered in electives, capstones, integration courses, experiential learning, or micro-credentials.	Annually using sprint-based updates and industry feedback loops	Siemens, 2005; Hatano & Inagaki, 1986; IAESB, 2019

** The competency update cycle follows a regular, routine schedule to ensure consistency and alignment with ongoing operational needs. However, significant changes such as curriculum strategy and purpose change, regulatory shifts, changed compliance obligations, or shifts in professional standards and role expectations require prompt review and revision of affected competencies to ensure continued relevance, effectiveness, and adherence to current industry and regulatory standards.

While ACLM empowers educators to design accounting programs that are coherent, scalable, and future-ready, overly strict layer boundaries may limit interdisciplinary integration or hybrid course design. In addition, annual Layer 3 updates demand agile curriculum processes that may strain academic committees or accreditation cycles and effective implementation requires digital infrastructure, faculty training, and governance support, which may not be uniformly available. Collaboration between academia, industry, and regulators, effective faculty training, and leveraging digital tools for competency-course-learning outcome mapping will help overcome the challenges for first-time implementation.

6. Strategic Application of the Unified Competency Framework

The development of a meaningful and robust competency framework tailored to the needs of individual organizations is a strategic imperative in preparing future-ready accounting talent. While this study offers a Unified Competency Framework, its true value lies in not only the provision of a comprehensive reference model that aligns with harmonized competencies from globally recognized standards and integrates additional capabilities derived from key driving forces and emerging trends for accounting education and professional development, but also the replicable methodology used to construct it, one that can be adapted by institutions, firms, and regulators to suit their unique contexts. Below addresses RQ5 by outlining a structured methodology for applying and adapting the framework to support the design, development, and implementation of accounting curriculum and learning and development programs.

1. Institutional Review and Strategic Fit

Application begins with an internal review of the institution's mission, stakeholder expectations, compliance requirements, and existing competency models. This includes identifying the roles and capabilities most critical to their future workforce and assessing alignment of the inclusive harmonized frameworks, the domains, and of competency domains and areas that are most critical to their learners and organizational goals. The objective is to ensure that the customized framework reflects both global standards and local and specific relevance. This step ensures that the adoption of the framework aligns with the organization's strategic direction and supports its unique positioning in accounting education or professional development and to identify any gaps for required customization of the reference model.

2. Customization of the Unified Competency Framework

The Unified Competency Framework enables institutions to bypass the need to build their competency models from scratch by offering a well-structured, harmonized reference that synthesizes and aligns competencies from internationally recognized frameworks and literature which significantly reduces time, effort, and resources in developing an institute-specific competency framework. Customization of the Unified Competency Framework is required because not all competency domains and areas carry equal weight across institutions. In addition, the classification may be varied among institutions subject to competency area relevance to their learners, industry partners, and regional and compliance demands and the competencies specified are only representative. For example, universities may emphasize foundational academic competencies, while professional firms may prioritize applied skills, digital agility, and advisory capabilities. Stakeholder engagement through faculty workshops, employer consultations, and learner feedback should be involved in this prioritization process.

3. Mapping to Curriculum and Development Programs

Once priority competency domains and areas and targeted competencies are identified, institutions map them to the existing curriculum components or L&D modules. This involves:

- Aligning competencies with course learning outcomes and instructional strategies
- Identifying gaps where new content, experiential learning, or micro-credentials may be needed
- Ensuring vertical integration across proficiency levels (e.g., from undergraduate to postgraduate, or from entry-level to leadership development).

4. Customization of Proficiency Levels and Assessment Criteria

Institutions may define their own proficiency benchmarks to reflect learner profiles and performance expectations. For example, a university might adopt a three-tiered model (introductory, intermediate, advanced), while a firm might use role-based progression (associate, senior, manager). Assessment criteria should be adapted to reflect contextual applications of each competency, using tools such as rubrics, simulations, and reflective portfolios.

5. Continuous Feedback, Iterative Refinement, and Environmental Scanning

Effective application of the framework requires ongoing evaluation and refinement. Institutions should establish periodic review mechanisms to:

- Monitor learner outcomes and competency attainment
- Obtain and incorporate feedback from learners, educators, and industry partners
- Monitoring significant changes in professional standards and regulatory requirements, technological an social shifts, and local and global trends and update competency priorities and learning strategies accordingly.

Environmental scanning should be conducted regularly to identify emerging technologies, evolving reporting standards, and shifts in stakeholder expectations. This ensures that the customized framework remains aligned with the future trajectory of the accounting profession.

7. Implications of this Study for Future Research

Future-ready accounting competency framework is an evolving area with high impact as it has direct impact on the sustainability of both accounting profession and human capital learning and development programs. It thus is worthwhile for further research and study. First, the proposed framework and guiding principles could assist practitioners, educators, and policymakers in evaluating, directing, monitoring, designing, and implementing an educational program designed to prepare accounting talent for competencies required to cope with evolving demands of the profession shaped by evolving technology, changing business and regulatory landscapes, shifting workforce value and expectation, and emerging risks and ESG issues. Addressing RQ6, below presents a list of potential research and study topics relevant to the future-ready accounting competency framework.

1. Validity and practicality assessment of the proposed future-ready accounting competency framework
2. Strategy, approach and methodology to apply the proposed future-ready accounting competency framework to the design, development, and implementation of accounting learning and development programs
3. Development of automated tools to implement the proposed future-ready accounting competency framework
4. Leveraging the research results and the proposed competency framework to develop a curriculum framework for future-ready accounting profession

Second, to address RQ6, this study explored the potential for researcher–AI collaboration by engaging Microsoft Copilot as an experimental research associate within a dual-role framework. The lead researcher, serving as principal investigator and author, directed the study's conceptual design, scholarly framing, and strategic orientation. In parallel, Microsoft Copilot contributed substantively to the research process, supporting data collection and synthesis, conceptual refinement and rationalization, framework harmonization and alignment, and the drafting and revision of report content. Collaborating with Microsoft Copilot throughout this research study proved conceptually effective in supporting both exploratory and integrative tasks, specifically as follows.

1. Exploratory Data Retrieval

Copilot enabled efficient and targeted data gathering on the evolution of the accounting profession from the 1960s to the 2030s, as well as on the drivers and trends shaping the profession between the 2020s and 2030s and their impacts. This included synthesizing information on technological transformations, emerging challenges, essential skill sets, and curriculum developments.

2. Contextual Source Integration

Copilot's capacity to process and contextualize diverse source types including academic literature, professional reports, and grey materials enhanced the identification of education and competency frameworks relevant to accounting, as well as skill classification criteria and systemic drivers of accounting profession.

3. Framework Design Support

Copilot's structured reasoning and semantic mapping capabilities were instrumental in the conceptual development of a Standard-Harmonized Competency Framework. It facilitated the alignment of competencies across in-scope frameworks, generated rationale for standard-emphasized level assignments, and identified gaps between standard-specified competencies and literature-reviewed skills.

4. Unified Competency Framework Construction

Copilot assisted in defining representative competencies for a Unified Competency Framework by mapping and aligning them with the in-scope frameworks and designing a competency classification model. This provided a foundational scaffold for competency-based, outcome-driven curriculum development.

5. Scholarly Drafting and Refinement

Copilot demonstrated the ability to generate and revise content in accordance with guided rules and intended messaging, ensuring coherence, clarity, and alignment with academic communication standards.

While human oversight remained essential for source validation and interpretive depth, Copilot's collaborative role significantly enhanced the study's methodological rigor, conceptual integration, and productivity. However, despite its speed and versatility, Copilot's responses frequently exhibit errors and omissions such as overlooked skills or competency areas, inconsistent outputs for identical prompts and inputs due to varying analysis bases, and occasional misinterpretations or misalignments with the intended input. These issues lead to cognitive overload and mental fatigue for the researcher, especially when validating and reconciling outputs across iterations. Nevertheless, the tool's use meaningfully enhances the researcher's domain knowledge by exposing them to diverse perspectives and conceptual linkages, thereby improving the likelihood of generating innovative ideas, frameworks, and solutions. At this stage, sole reliance on Copilot to conduct and deliver a research study is not advisable. The appropriate approach is to collaborate with the tool through guided direction and critical validation of its outputs by a researcher who possesses sufficient expertise in the domain and a clear understanding of the risks and limitations associated with AI-assisted research. Potential research and study topics in this area are the following.

1. Learning and development model for AI-enabled researchers
2. Innovation Acceleration Through AI Collaboration in Research
3. A Human-AI Research Collaboration Blueprint Design

8. Conclusion

This research has examined the profound transformation underway in the accounting profession, driven by technological disruption, globalization, evolving regulatory frameworks, and shifting societal expectations. By tracing the evolution of accounting skills and curricula from the 1960s to the projected demands of the 2030s, the study identified both enduring and emerging competencies essential for future-ready accounting talent. The analysis revealed persistent gaps in current competency frameworks and educational programs, particularly in areas such as digital fluency, sustainability, strategic advisory, and lifelong learning. The findings underscore the importance of ongoing research and collaboration between academia, industry, and technology partners to refine competency frameworks and enhance accounting education. To address these challenges, the

study proposed a Unified Competency Framework for Future-Ready Accounting Talent, synthesizing elements from globally recognized standards and recent literature. This framework is designed to be scalable, adaptable, and robust, supporting modular curriculum design, competency-based assessment, and cross-disciplinary integration. It emphasizes the integration of foundational accounting competencies with emerging capabilities, ensuring relevance in a dynamic and technology-driven business environment.

The methodology outlined for framework adaptation and implementation provides a replicable approach for curriculum transformation, faculty development, and stakeholder engagement. Strategic application of the framework enables institutions and organizations to customize competency models to their unique contexts, align educational programs with industry demands, and foster continuous professional development. In addition, the integration of AI and digital tools in research and competency framework development offers significant opportunities to accelerate innovation, improve learning outcomes, and prepare accounting talent for future challenges. Ultimately, the adoption of a future-ready competency framework is essential for sustaining the relevance, resilience, and impact of the accounting profession in an increasingly complex and interconnected world.

9. References

Abbasi, N. (n.d.). *Competency approach to accounting education: A global view*. Academic and Business Research Institute. Retrieved June 30, 2025, from https://aabri.com/manuscripts/131566.pdf

Abdullah, A., Wan, N. Z. N., Saidi, N., Hussin, S. N. A., Razak, S., & San, S. (2024). Adapting to the digital era: Key skills for future accounting professionals. *Advanced International Journal of Business, Entrepreneurship and SMEs, 6*(20), 228–241. https://doi.org/10.35631/AIJBES.620020

Accounting Insights Team. (2024, June 1). The evolution of accounting: History, innovations, and future trends. Accounting Insights. https://accountinginsights.org/the-evolution-of-accounting-history-innovations-and-future-trends/

AccountingWEB. (2024, November 26). How will accountants' roles change in 2025? AccountingWEB. https://www.accountingweb.co.uk/community/industry-insights/how-will-accountants-roles-change-in-2025

American Institute of Certified Public Accountants (AICPA), & Chartered Institute of Management Accountants (CIMA). (2020). Reimagining the finance function: How to stay relevant in the digital age. AICPA.

American Institute of Certified Public Accountants (AICPA), & National Association of State Boards of Accountancy (NASBA). (2020). CPA Evolution Model Curriculum. AICPA.

American Institute of Certified Public Accountants (AICPA), & National Association of State Boards of Accountancy (NASBA). (2021). Accounting program curriculum gap analysis report. AICPA. https://evolutionofcpa.org/Documents/Accounting%20Program%20Curriculum%20Gap%20Analysis%20Report%203.15.2021.pdf

American Institute of Certified Public Accountants (AICPA). (2019). Core competency framework. AICPA.

American Psychological Association. (2017). APA guidelines for the undergraduate psychology major: Version 2.0. https://www.apa.org/education-career/undergrad/guidelines

Amin, H. M. G., Hassan, R. S., Ghoneim, H., & Abdallah, A. S. (2025). A bibliometric analysis of accounting education literature in the digital era: Current status, implications and agenda for future research. *Journal of Financial Reporting and Accounting, 23*(2), 742–768. https://doi.org/10.1108/JFRA-12-2023-0802

Anandarajan, A., Srinivasan, C. A., & Anandarajan, M. (2004). Historical overview of accounting information systems. In Business intelligence techniques (pp. 1–20). Springer. https://doi.org/10.1007/978-3-540-24700-5_1

Arkhipova, D., Montemari, M., Mio, C., & Marasca, S. (2024). Digital technologies and the evolution of the management accounting profession: A grounded theory literature review. *Meditari Accountancy Research, 32*(7), 35–64. https://doi.org/10.1108/MEDAR-07-2023-2097

Arias, V. S., & Punyanunt-Carter, N. M. (2017). Family, culture, and communication. In Oxford research encyclopedia of communication. Oxford University Press. https://doi.org/10.1093/acrefore/9780190228613.013.504

Association of Chartered Certified Accountants (ACCA). (2016). Professional accountants – the future: Drivers of change and future skills. https://www.accaglobal.com/content/dam/members-beta/images/campaigns/pa-tf/pi-professional-accountants-the-future.pdf

Association of Chartered Certified Accountants (ACCA), & Institute of Management Accountants (IMA). (2016). 100 drivers of change for the global accountancy profession. https://www.accaglobal.com/content/dam/acca/global/PDF-technical/other-PDFs/drivers-for-change-5mins.pdf

Association of Chartered Certified Accountants (ACCA). (2020). Future ready: Accountancy careers in the 2020s. ACCA. https://www.accaglobal.com/content/dam/ACCA_Global/professional-insights/FutureReady2020s/JamieLyon.FutureCareersAccoutancy2020s.fullreport.pdf

Association of Chartered Certified Accountants (ACCA). (2022). Accounting for a better world: Priorities for a transforming profession. ACCA. https://www.accaglobal.com/content/dam/ACCA_Global/professional-insights/Accountingforabetterworld/PI-AFABW%20v8.pdf

Association of Chartered Certified Accountants (ACCA). (2023). Digital horizons: Technology, innovation, and the future of accounting. ACCA. https://www.accaglobal.com/content/dam/ACCA_Global/professional-insights/digital-horizons2023/PI-DIGITAL-HORIZONS%20v5.pdf

Association to Advance Collegiate Schools of Business (AACSB). (2022). 2022 accounting accreditation standards. AACSB. https://www.aacsb.edu/-/media/documents/accreditation/2020-aacsb-business-accreditation-standards-jul-1-2022.pdf

Association to Advance Collegiate Schools of Business (AACSB). (2023). 2020 business accreditation standards. AACSB. https://www.aacsb.edu/-/media/documents/accreditation/2020-aacsb-business-accreditation-standards-june-2023.pdf

Barile, S., Saviano, M., Polese, F., & Caputo, F. (2015). T-shaped people for addressing the global challenge of sustainability. Paper presented at the Naples Forum on Service. Naples Forum on Service. https://naplesforumonservice.com/wp-content/uploads/2021/02/Barile-S.-Saviano-M.-Polese-F.-Caputo-F.1.pdf

Berg, M. C. (2007). Continuing professional development: The IFAC position. *Accounting Education, 16*(4), 319–327. https://doi.org/10.1080/09639280701646430

Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education, 32*(3), 347–364. https://teaching.helsinki.fi/system/files/inline-files/Biggs1996_Article_EnhancingTeachingThroughConstr.pdf

Bloom, B. S. (Ed.). (1956). Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain. David McKay.

Boritz, J. E., & Carnaghan, C. (2016). Competence-based education and assessment in the accounting profession in Canada and the USA. In M. Mulder (Ed.), Competence-based vocational and professional education (pp. 273–296). Springer. https://doi.org/10.1007/978-3-319-41713-4_13

Bowles, M., Ghosh, S., & Thomas, L. (2020). Future-proofing accounting professionals: Ensuring graduate employability and future readiness. *Journal of Teaching and Learning for Graduate Employability, 11*(1), 1–18. https://files.eric.ed.gov/fulltext/EJ1245097.pdf

Brabete, V., Sichigea, M., Cîrciumaru, D., & Goagără, D. (2024). Bibliometric mapping of the relationships between accounting, professional accountants, and sustainability issues. *Sustainability, 16*(21), Article 9508. https://doi.org/10.3390/su16219508

Carnaghan, C. (2017). Competency-based education and assessment in the accounting profession in Canada and the USA. In M. Mulder (Ed.), Competence-based vocational and professional education (pp. 273–296). Springer. https://doi.org/10.1007/978-3-319-41713-4_13

Chen, X. (2012). Culture, peer interaction, and socioemotional development. *Child Development Perspectives, 6*(1), 27–34. https://doi.org/10.1111/j.1750-8606.2011.00187.x

Confederation of Asian and Pacific Accountants (CAPA). (2014). Professional competency maturity model. CAPA. https://www.capa-apac.org/wp-content/uploads/2017/02/CAPA_MaturityModel_2014_FINAL_S.pdf

Dazeley, R., Goriss-Hunter, A., Meredith, G., Firmin, S., Burke, J., Panther, B., & Sellings, P. (2024). Agile backward design: A framework for planning higher education curriculum. The Australian Educational Researcher. Advance online publication. https://doi.org/10.1007/s13384-024-00772-7

de las Fuentes, C. (2024, April 1). Poverty, discrimination, cultural norms influence community well-being. Monitor on Psychology, 55(3). https://www.apa.org/monitor/2024/04/structural-competence-community-well-being

European Commission. (2023). Proposal for a regulation laying down harmonised rules on artificial intelligence (Artificial Intelligence Act). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0206

Forbes Finance Council. (2025, March 18). Mind the gap: Addressing the finance and accounting talent gap in 2025. Forbes. https://www.forbes.com/councils/forbesfinancecouncil/2025/03/18/mind-the-gap-addressing-the-finance-and-accounting-talent-gap-in-2025/

García, J. L., & de los Ríos, I. (2021). Model to develop skills in accounting students for a 4.0 industry and 2030 agenda: From an international perspective. Sustainability, 13(17), Article 9699. https://doi.org/10.3390/su13179699

Gardner, P., & Estry, D. (2017). A primer on the T-professional. Collegiate Employment Research Institute, Michigan State University. https://ceri.msu.edu/_assets/pdfs/t-shaped-pdfs/Primer-on-the-T-professional.pdf

Global Accounting Network. (n.d.). Closing the skills gap: Key strategies for the next wave of finance talent. Retrieved July 3, 2025, from https://www.globalaccountingnetwork.net/articles/closing-the-skills-gap-key-strategies-for-the-next-wave-of-finance-talent

Hassan, R., & Saleh, M. (2023). A bibliometric analysis of accounting education literature in the digital era: Current status, implications, and agenda for future research. *Accounting Education Review, 32*(2), 101–130.

Hatano, G., & Inagaki, K. (1986). Two courses of expertise. In H. W. Stevenson, H. Azuma, & K. Hakuta (Eds.), Child development and education in Japan (pp. 262–272). W. H. Freeman. https://eprints.lib.hokudai.ac.jp/dspace/bitstream/2115/25206/1/6_P27-36.pdf

HighRadius. (n.d.). Future trends in the accounting industry. Retrieved November 21, 2025, from https://www.highradius.com/resources/Blog/future-trends-in-accounting-industry/

Howard, A. (2013). Exploring the curriculum gap: Some thoughts on management accounting education and curriculum design. *MSOR Connections, 13*(1), 22–29. https://doi.org/10.11120/MSOR.2013.00010

Institute of Certified Public Accountants (AICPA), & National Association of State Boards of Accountancy (NASBA). (2021). Accounting program curriculum gap analysis report. American Institute of CPAs. https://evolutionofcpa.org/Documents/Accounting%20Program%20Curriculum%20Gap%20Analysis%20Report%203.15.2021.pdf

Institute of Management Accountants (IMA). (2023). IMA management accounting competency framework. https://prodcm.imanet.org/-/media/IMA/Files/Home/Career-Resources/Management-Accounting-Competencies/IMA-Framework-11-28-23.ashx

Institute of Management Accountants (IMA). (2025). IMA expanded management accounting competency framework: Advancing competencies for the 21st-century management accountant. https://www.imanet.org/~/media/ima/files/home/career-resources/competency-framework/competency-framework-white-paper.pdf

Institute of Singapore Chartered Accountants (ISCA). (n.d.). Making accountancy education fit-for-purpose for the new economy: Executive summary. Retrieved July 15, 2025, from https://www.isca.org.sg/docs/default-source/i-p--our-future-together/making-accountancy-education-fit-for-purpose-for-the-new-economy-executive-summary.pdf

International Accounting Education Standards Board (IAESB). (2019). 2019 handbook of international education standards. International Federation of Accountants. https://www.ifac.org/education/publications/2019-handbook-international-education-standards

International Federation of Accountants (IFAC). (2019). Future-fit accountants: Roles for the next decade. https://www.ifac.org/knowledge-gateway/attractiveness-profession/publications/future-fit-accountants-roles-next-decade

International Federation of Accountants (IFAC). (2020). Accountancy skills evolution: Impact of COVID-19 & the path forward. https://www.micpa.com.my/v2/wp-content/uploads/2020/11/IFAC-Accountancy-Skills-Evolution.pdf

International Federation of Accountants (IFAC). (2025). IFAC enhances international education standards to equip professional accountants for sustainability reporting. IFAC News. https://www.ifac.org/news-events/2025-03/ifac-enhances-international-education-standards-equip-professional-accountants-sustainability

International Integrated Reporting Council (IIRC). (2021). The international framework. https://www.integratedreporting.org

Islam, M. A. (2017). Future of accounting profession: Three major changes and implications for teaching and research. International Federation of Accountants. https://www.ifac.org/knowledge-gateway/discussion/future-accounting-profession-three-major-changes-and-implications-teaching-and-research

Johnson, B. (2024). Addressing organizational challenges in the accounting industry through academic-industry collaboration: A literature review. *The Scholarship Without Borders Journal, 3*(1), Article 5. https://doi.org/10.57229/2834-2267.1057

Johnson, B. (2025). The impact of regulatory changes on corporate board responsibilities. ResearchGate. Retrieved July 11, 2025, from https://www.researchgate.net/publication/388928193_The_Impact_of_Regulatory_Changes_on_Corporate_Board_Responsibilities

Joynt, C. (2022). How to assess the effectiveness of accounting education interventions: Evidence from the assessment of a bridging course before introductory accounting. *Meditari Accountancy Research, 30*(7), 237–255. https://doi.org/10.1108/MEDAR-01-2022-1571

Kamaruzaman, M. F., Osman, S., & Hamid, N. A. (2020). Industrial Revolution 4.0 (IR 4.0) competencies: A literature review of manufacturing industry. *Academy of Strategic Management Journal, 19*(6), 1–10. https://www.abacademies.org/articles/industrial-revolution-40-ir-40-competencies-a-literature-review-of-manufacturing-industry.pdf

Karbon. (n.d.). The future of the accounting industry: 7 important trends in 2025. Retrieved June 30, 2025, from https://karbonhq.com/resources/future-of-accounting/

Kee, R. (1993). Data processing technology and accounting: A historical perspective. Accounting Historians Journal, 20(2), 1–20. https://www.accountingin.com/accounting-historians-journal/volume-20-number-2/data-processing-technology-and-accounting-a-historical-perspective/

KPMG. (2024, March 1). Emerging regulatory focus: Operational resilience. KPMG. Retrieved July 3, 2025, from https://kpmg.com/kpmg-us/content/dam/kpmg/pdf/2024/emerging-regulatory-focus-operational-resilience-reg-alert.pdf

Kroon, N., & Alves, M. do C. (2023). Fifteen years of accounting professional's competencies supply and demand: Evidencing actors, competency assessment strategies, and 'top three' competencies. *Administrative Sciences, 13*(3), Article 70. https://doi.org/10.3390/admsci13030070

Kroon, N., Alves, M. C., & Martins, I. (2021). The impacts of emerging technologies on accountants' role and skills: Connecting to open innovation—A systematic literature review. Journal of Open Innovation: Technology, Market, and Complexity, 7(3), Article 163. https://doi.org/10.3390/joitmc7030163

Leidig, P. M., & Salmela, H. (2022). The ACM/AIS IS2020 competency model for undergraduate programs in information systems: A joint ACM/AIS task force report. Communications of the Association for Information Systems, 50, Article 21. https://doi.org/10.17705/1CAIS.05021

Leidig, P., Salmela, H., Anderson, G., Babb, J., Gardner, L., Nunamaker, J. F., Scholtz, B., Shankararaman, V., Sooriamurthi, R., & Thouin, M. (2020). IS2020: A competency model for undergraduate programs in information systems. Association for Computing Machinery. https://www.acm.org/binaries/content/assets/education/curricula-recommendations/is2020.pdf

Lindsay, H. (2016). More than "continuing professional development": A proposed new learning framework for professional accountants. *Accounting Education, 25*(1), 1–13. https://doi.org/10.1080/09639284.2015.1125295

Mahambo, C. T. (2020). Accounting curriculum in the digital era: Suggestions for preparing Botswana's tertiary accounting graduates. *Research Journal of Finance and Accounting, 11*(16), 8–17. https://www.iiste.org/Journals/index.php/RJFA/article/view/53678

McBride, K., Bigoni, M., & Gomes, D. (2025). How does accounting history shape the past, present and future of society? *Accounting History, 30*(2), 139–158. https://doi.org/10.1177/10323732251334815

National Institute of Standards and Technology (NIST). (2023). AI risk management framework (AI RMF 1.0). https://www.nist.gov/itl/ai-risk-management-framework

NetSuite. (2025). 18 accounting trends to pay attention to in 2025. NetSuite. https://www.netsuite.com/portal/resource/articles/accounting/accounting-trends.shtml

Nie, Y., & Mastor, N. H. (n.d.). Accounting employability: A systematic review of skills, challenges, and initiatives. Cogent Business & Management. Advance online publication. Retrieved July 3, 2025, from https://doi.org/10.1080/23311975.2024.2433161

Organisation for Economic Co-operation and Development (OECD). (2020, November 16). Shaping the future of regulators. OECD. Retrieved July 3, 2025, from https://www.oecd.org/en/publications/shaping-the-future-of-regulators_db481aa3-en.html

Organisation for Economic Co-operation and Development (OECD). (2021). Principles on artificial intelligence. OECD. Retrieved July 3, 2025, from https://www.oecd.org/going-digital/ai/principles/

Onyshchenko, O. (2023). Industry 4.0 and accounting: Directions, challenges, opportunities. *Independent Journal of Management & Production, 14*(2), 1–15. https://doi.org/10.14807/ijmp.v13i3.1993

Osborne Training. (2025, January 10). The most in-demand accounting skills for 2025. Osborne Training. https://www.osbornetraining.org/the-most-in-demand-accounting-skills-2025/

Phan, D., Yapa, P., & Nguyen, H. T. (2020). Accounting graduate readiness for work: A case study of South East Asia. *Education + Training, 63*(3), 392–416. https://doi.org/10.1108/et-02-2019-0036

Qasim, A., & Kharbat, F. F. (2020). Blockchain technology, business data analytics, and artificial intelligence: Use in the accounting profession and ideas for inclusion into the accounting curriculum. *Journal of Emerging Technologies in Accounting, 17*(1), 107–117. https://doi.org/10.2308/jeta-52649

Rosley, N. A., Muhammad, K., Ali, M. M., Ghani, E. K., & Ilias, A. (2023). Accounting curriculum in the sustainability era: Employability of future accountants. *European Proceedings of Social and Behavioural Sciences, 11*, 93–101. https://doi.org/10.15405/epsbs.2023.11.93

Safian, N., Ngah, N. S., Hussain, A. M., Yaacob, M. A., Ramdan, M. R., & Rahmat, N. H. (2023). Is there a relationship between internal and external factors in learning? *International Journal of Academic Research in Business and Social Sciences, 13*(9), 1–15. https://doi.org/10.6007/IJARBSS/v13-i9/18541

Sage. (2025, January 6). Sage reveals five bold predictions for the future of accounting by 2030. International Accounting Bulletin. https://www.internationalaccountingbulletin.com/features/sage-reveals-five-bold-predictions-for-the-future-of-accounting-by-2030/

Sangster, A. (2022). Revolutionising the accounting curriculum in higher education: A vision of the future. *Accounting and Management Review, 26*(Special Issue), 49–75. https://doi.org/10.55486/amrrcg.v26i.3a

Senik, R., Broadbent, J., & Manaf, N. A. A. (2013). Accountants in academia: A study of role conflict and role ambiguity. *Asian Academy of Management Journal, 18*(2), 93–113. https://doi.org/10.21315/aamj2013.18.2.5

Shamsudin, A., Ali Khan, M. N. A., & Jusoh, A. (2025). Unveiling challenges and opportunities in the integration of emerging technologies in the accounting profession: A preliminary investigation. *Jurnal Pengurusan, 73*, 1–15. https://doi.org/10.17576/pengurusan-2025-73-1

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning, 2*(1). http://www.edtechpolicy.org/AAASGW/Session2/siemens_article.pdf

Smith, D. (2024, December 6). Charting change: A 50-year journey through the evolution of accountancy. Accounting for Everyone. https://accountingforeveryone.com/charting-change-50year-journey-through-evolution-accountancy/

Smith, D. (2025, May 23). The future of accountancy: Predictions for the next decade. Accounting for Everyone. https://accountingforeveryone.com/future-accountancy-predictions-next-decade/

Sustainability Accounting Standards Board (SASB). (2017). SASB conceptual framework. SASB.

Sydle. (2023, September 21). ESG: The impact of corporate governance and its emerging trends. Sydle. Retrieved July 3, 2025, from https://www.sydle.com/blog/esg-governance-650c4f96118e9e7c1a5d0b6e

Tan, L. M., & Laswad, F. (2019). Key employability skills required of tax accountants. *Journal of the Australasian Tax Teachers Association, 14*, 211–230. https://classic.austlii.edu.au/au/journals/JlATaxTA/2019/12.pdf

Thottoli, M. M., Islam, M. A., Abdullah, A. B. M., Hassan, M. S., & Ibrahim, S. (2024). Enricher learning: Bridging the gap between academics and practicing accounting professionals. *Journal of Education for Business, 99*(5), 300–311. https://doi.org/10.1080/08832323.2024.2366787

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/10.1080/09639284.2021.1938616

Wilke CPAs & Advisors. (2023, March 30). The evolution of accounting: Looking back at the last 25 years. Wilke CPAs & Advisors. https://wilkecpa.com/the-evolution-of-accounting-looking-back-at-the-last-25-years/

William & Mary, Mason School of Business. (2024, October 17). Evolution of the accounting profession: A modern transformation. Mason School of Business Blog. Retrieved July 11, 2025, from https://online.mason.wm.edu/blog/the-evolution-of-the-accounting-profession

World Economic Forum (WEF). (2020). The future of jobs report 2020. World Economic Forum. https://www.weforum.org/reports/the-future-of-jobs-report-2020

World Economic Forum (WEF). (2024, September 5). AI governance trends: How regulation, collaboration, and skills demand are shaping the industry. World Economic Forum. Retrieved July 3, 2025, from https://www.weforum.org/stories/2024/09/ai-governance-trends-to-watch/

Yao, J. (2023). Exploring the impact of technology-enhanced learning on accounting education: A comparative study. *International Journal of Accounting Pedagogy, 5*(1), 45–62. https://www.academia.edu/109871100

Zeff, S. A. (2003). How the U.S. accounting profession got where it is today: Part I. *Accounting Horizons, 17*(3), 189–205. https://www.ruf.rice.edu/~sazeff/PDF/Horizons,%20Part%20I%20(print).pdf

Appendix A

The Evolution of Accounting Profession from the 1960s to the 2030s

Decade	Technology Landscape	Emerging Issues	Essential Skills	Curriculum Focus
1960s	- Mainframe computing - Punch card data entry - Batch processing - Custom-built software - COBOL and FORTRAN programming - Magnetic tape storage - No user interfaces	- Demand for global financial data comparability - The Accounting Principles Board (APB) faced criticism on clarity and authority - Financial misstatements lawsuits - More assertive in shaping accounting practices by U.S. SEC - Emphasis on earnings per share, mergers, and financial transparency - A push for equity in the profession - Growing concerns about unauthorized access and data loss - Learning gaps in computing - Challenges in regulating and auditing computerized financial systems	- GAAP and cost accounting - Financial analysis - Auditing proficiency and independence - Ethics and public responsibility - Communication skills to explain financial data to non-specialists - AIS skills related to systems analysis and design on traditional accounting and business processes and basic information flows, manual-to-batch” transition, programming fundamentals such as COBOL or FORTRAN, internal controls to ensure data integrity and auditability, and adaptability to bridge the gap between manual processes and emerging computer-based systems	- Largely procedural accounting (i.e., doing accounting correctly) rather than conceptual accounting education (i.e., understanding accounting deeply) - Focus on manual bookkeeping, GAAP, and basic auditing - Minimal exposure to technology—mostly theory and limited access to mainframes - Discussion on ethics and professional responsibility but not deeply embedded in curricula
1970s	- Minicomputers - Early accounting software - Mainframe computing used by large firms for payroll, general ledger, and inventory systems - Batch processing - Punch cards for data entry	- Creation of FASB - Inflation reporting - Audit litigation risk - A series of corporate failures and banking crises leading to calls for greater transparency and accountability in the	- Regulatory compliance - Inflation accounting and reporting - Deep knowledge of Generally Accepted Accounting Principles - Audit independence - Analytical thinking to interpret	- Still focus on traditional accounting cycles - Introduction of financial management, inflation accounting, basic regulatory frameworks, and ethics

Decade	Technology Landscape	Emerging Issues	Essential Skills	Curriculum Focus
	- Custom-built programs began replacing manual ledgers in large organizations. - Spreadsheets tools like VisiCalc (released in 1979) were on the horizon, poised to revolutionize accounting in the next decade - Magnetic tape storage replaced paper	profession - Demands to reduce inconsistencies in financial reporting - Economic consequences and influence of financial reporting: a concept that reshaped standard-setting - Growing demand for standardized accounting information systems and consistent design	financial data in the context of volatile markets. - Communication skills to explain financial results to stakeholders - AIS skills related to internal control design, data integrity, how to work with IT teams, spreadsheet literacy	
1980s	- Personal computers and spreadsheet tools like Lotus 1-2-3, early versions of Microsoft Excel entering the workplace - Widespread adoption early database system, and off-the-shelf accounting software like Peachtree and QuickBooks	- High-profile scandals and corporate failures - Rise of Big 8 firms, fraud detection and IT auditors - Audit independence and ethic reform - Push for stronger self-regulation and transparency in financial reporting - Global standardization pressure for harmonized accounting standards - Beginning of integrating AIS into a broader business strategy	- Technical proficiency in GAAP - Auditing expertise on audit sampling, professional judgment, and independence - Ethical integrity - Analytical thinking to interpret financial data, not just record it - Communication skills to explain financial reports to non-accountants - Strategic advisory - AIS skills related to PC literacy, spreadsheet literacy and modeling, systems analysis	- Introduction of computerized accounting labs - Integration of spreadsheet tools (e.g., Lotus 1-2-3), accounting information systems, and internal controls. - Emphasis of ethics and independence in courses
1990s	- Widespread adoption of accounting software - ERP platforms like SAP and Oracle to integrate finance, HR,	- Globalization, harmonization of accounting standards - Y2K concerns - Continued concerns on	- International GAAP/IFRS alignment - Taxation Foundation - Risk management	- Inclusion of international standards (IAS/IFRS), forensic accounting, ERP systems, and IT auditing

Decade	Technology Landscape	Emerging Issues	Essential Skills	Curriculum Focus
	and operations - Windows-based interfaces - Email and early internet for communication and data sharing	corporate governance, audit independence and ethics - Outsourcing and offshoring of accounting functions - Starting of automation and digital tools to replace manual accounting tasks - Early internet use raising new security and data-sharing concerns - Global economy and regulatory environments became increasingly complex.	- Strategic thinking to contribute to business planning - Communication, teamwork, and other soft skills to perform cross-functional roles - Ethical judgment - Continuous learning to keep pace with evolving standards and technologies - AIS skills related to ERP implementation, IT literacy to navigate ERP systems and collaborate across departments, manual-to-digital process bridging	- Greater emphasis on internal control frameworks
2000s	- Cloud computing - XBRL - Data warehousing - Mature ERP systems - Emergence of cloud computing and cloud-based accounting solutions - More adoption of data analytics tools such as Excel, SAS and Crystal Reports - Increased use of automated workflows for routine tasks	- Global financial crisis (2007–2008) and Enron/WorldCom fallout - Corporate governance reform - Introduction of Sarbanes-Oxley Act (2002) - Ethics in accounting - Fair value accounting debates - Push for convergence of U.S. GAAP and IFRS - Increased reliance on IT - Outsourcing of accounting functions - Global economy and regulatory environments continued increasingly complex.	- SOX compliance - Forensic accounting - Internal control design to prevent fraud and ensure compliance - Tax regulatory adaptation and software proficiency - Deep knowledge of new laws like the Sarbanes-Oxley Act (SOX) - Risk management - Understand cybersecurity, data integrity, and system audits - Ethical decision-making - Global mindset - AIS skills related to ERP	- Focus on corporate governance, risk management, regulatory compliance, and XBRL - Emergence of courses on forensic accounting and cloud accounting

Decade	Technology Landscape	Emerging Issues	Essential Skills	Curriculum Focus
			systems, databases, and emerging analytics tools, and IT SOX compliance, IT risk management, and data analysis	
2010s	- Cloud-based accounting - Mobile accounting apps - AI-assisted audits - Big data - Automation & AI - Cybersecurity tools - Integrated ERP and CRM platforms	- Cybersecurity - Real-time reporting - Regulatory complexity - Sustainability reporting and disclosures - Blockchain and cryptocurrency: issues on valuation, auditability, and regulatory oversight - Shortage of talent with both technology and analytical skills	- Integrated reporting - Tax advisory and analytical expertise - ESG awareness and sustainability accounting - Adaptability, flexibility, and continuous learning - Collaboration, communication, and cross-functional teamwork - Ethical leadership - Strategic thinking to contribute to business strategy, not just compliance - AIS skills related to basic database concepts, data analytics and interpretation using tools like Excel, Power BI, and Tableau data visualization, foundational understanding of and operate accounting software and ERP systems and data flows, cloud computing awareness, data integrity and controls, advanced spreadsheet proficiency, system implementation awareness	- Expansion into sustainability reporting, integrated reporting, and cybersecurity - Introduction of big data, AI, and blockchain concepts - Emphasis on strategic advisory, communication, and interdisciplinary fluency - Fragmented and weakly integrated curricula; IT-accounting silo - Still focus on traditional accounting systems and processes and compliance over agility - Limited exposure to hands-on experience with ERP systems and data analytics tools - Limited coverage on digital compliance and data security, reg tech, and audit trails - Limited coverage on soft skills and adaptability to hybrid roles

Decade	Technology Landscape	Emerging Issues	Essential Skills	Curriculum Focus
2020s	- AI & machine learning - Blockchain - Robotic process automation (RPA) - Cloud-based platforms for real-time collaboration and remote working - Integrated ecosystems with seamless connections between accounting, CRM, and supply chain systems - Real-time dashboards	- Pandemic-driven operations and resilience - Remote audits - Climate risk - Continued shortage of talent with both accounting and technology skills shortages - Growing concern on AI ethics and auditability to ensure transparency and accountability in AI-driven decisions - Real-time compliance - Cybersecurity. - Regulatory complexity - Informed decision-making based on real-time financial intelligence - Remote & hybrid work changing how teams collaborate, audit, and manage compliance - Increasing involvement of accountants in measuring and reporting environmental impact	- ESG assurance - Sustainability & integrated reporting - Tax digital integration and ethical judgment - Adaptability and continuous learning - Holistic risk management - Change management - Complex problem-solving - Advanced communication - Strategic thinking - Strategic advisory - AIS skills on AI literacy, digital collaboration, digital literacy related to cloud accounting platforms and management, RPA, AI/ML tools, blockchain, integration technologies such as API and ERP systems, cybersecurity, data privacy, ERP mastery to navigate platforms to manage end-to-end business processes, process automation and workflow design using RPA and other technologies, advanced data analytics and modelling using such tools as Python, SQL, and advanced visualization software, API and system integration knowledge	- Inclusion of AI literacy, blockchain applications, data visualization, and ethical technology use - Greater integration of experiential learning and employability modules - Education pedagogy reform and teaching resources outpaced by technology growth, high-impact changes, and regulation complexity - Fragmented and weakly integrated curricula of IT, ESG, risk management, and AIS into accounting - Insufficient focus on adaptability, ethics, ethical technology use, technology-related regulations, digital literacy, communication, real-time data interpretation for agile decision-making

Decade	Technology Landscape	Emerging Issues	Essential Skills	Curriculum Focus
2030s (projected)	- Quantum computing - Autonomous accounting systems - NLP-driven interfaces and analytics - AI-powered continuous accounting replacing periodic closes - Blockchain integration to enhance audit trails, smart contracts, and asset tracking - Predictive analytics and digital twins to simulate financial outcomes before they happen - Ethical AI frameworks	- AI ethics and accountability - Real-time assurance - Stakeholder capitalism - ESG regulations and global ESG convergence - Cyber-resilience - Talent transformation requiring fewer bookkeepers and more strategic thinkers and tech-savvy advisors - New standards for ESG, AI auditing, and real-time reporting - Expectations for instant insights, personalized dashboards, and 24/7 access - Increased taxation complexity	- Sustainability and ESG - Interpreting AI-generated tax insights, policy forecasting, sustainability-related tax advisory - Interdisciplinary agility to combine finance, technology, and strategy to solve complex business problems - Ethical leadership - Lifelong learning mindset - Strategic advisory - Innovation and creativity - Regulation agility - AIS Skills related to AI and data governance, AI/ML development and application, predictive modeling, emerging technology and quantum computing awareness and impact assessment, AI collaboration and oversight to validate outputs and ensure ethical use, interpretation of continuous data flows and act on insights instantly, ethics in AIS, architectural understanding of strategic AIS system design and optimization, proactive cybersecurity	- Emphasis on ethical AI, climate finance, autonomous auditing, and predictive analytics - To be cross-disciplinary, blending accounting with sustainability science, tech governance, IT, AIS, strategic advisory, and global digital standards and regulations - Focus on continuous, tech-driven learning models, human-centered decision-making, and UN SDG alignment - Experience in curricula lag, cultural inertia, and insufficient emphasis in AIS pedagogy - Continued gaps in exposure to advanced finance technology and related accounting concepts, e.g., tokenized assets, smart contracts, and real-time reporting - Continued gaps in AI governance, algorithm auditing, cybersecurity, and ethical technology use - Focus on fostering critical thinking, problem-solving, and the ability to leverage technology for strategic insights

Decade	Technology Landscape	Emerging Issues	Essential Skills	Curriculum Focus
			leadership for financial systems, interoperability and ecosystem management, automated control design and audit	- Move towards experienced-based and hands-on learning approach

Source: Abdullah et al., 2024; ACCA, 2016; ACCA & IMA, 2016; Accounting Insights Team, 2024; Amin et al., 2025; Anandarajan et al., 2004; Karbon, n.d.; Kee, 1993; Kroon et al., 2021; McBride, 2025; Osborne Training, 2025; Shamsudin et al., 2025; Zeff, 2003; Tan & Laswad, 2019

Appendix B

Key Trends and Drivers of Accounting Profession and Their Impacts

Theme	Drivers	Trends	Impact on Skills	Impact on Curriculum
Technological forces: Speed of Technology Advancement and Adoption	- AI and automation - Blockchain - Cloud Computing - Cybersecurity - Big Data and Data Analytics - Digital Transformation	- Continuous emergence of new business and operating models challenging traditional accounting frameworks - Automation of routine tasks - Integration of AI in audit and accounting - Real-time financial ecosystems - Cloud-based accounting platforms - Predictive analytics - Shifting accountant roles to strategic advisors - Human-Machine Collaboration - Human-centric, security, and ethics by design focus	- Business transformation - Digital and technology literacy - Cybersecurity awareness and basics - Business process redesign - Cloud accounting - Tech-enabled auditing - Blockchain assurance - Data literacy - Data analytics - Strategic advisory - AI oversight - Ethical judgment - Ethical technology governance - Human-centric design - Continuous learning	- Invest in digital infrastructure such as cloud-native platforms, data analytics and visualization tools, real-time financial ecosystem sandboxes - Increased focus on emerging digital and technological concepts such as cybersecurity and ethical AI frameworks and tools such as AI-assisted auditing, into the curriculum either by including courses on the topics or by embedding them in each course - Incorporate hands-on learning on digital technologies, ethics, sustainability, and other emerging developments such as ethics in automation - Integration of technical knowledge and concepts across disciplinaries and subject areas creating a hybrid, cross-disciplinary program - Include lifelong learning outcomes and embrace it by making available tools and infrastructure such as

Theme	Drivers	Trends	Impact on Skills	Impact on Curriculum
				learning management systems (LMS), digital libraries and databases, simulation software, budgeting, and financial modeling, collaborative technology. faculty training and industry partnerships: and by emphasizing self-directed learning, e.g., include projects that require independent research and reflection - Partner and collaborate with academia, industry, and professionals
Economic Forces: Volatile Global Economic and Business Landscapes	- Geopolitical Shifts - Economic Nationalism - Price level dynamics - Emerging economic risks	- Shifts in government policy, and international trade agreements - Focus on operational resilience and adaptive leadership - Adoption of digital currencies - Geopolitical uncertainty	- Strategic risk management and analysis - Scenario modeling and planning - Global finance and financial regulations - Global and local accounting standards - ESG reporting - Digital asset accounting - Cross-border tax strategy - ESG advisory such as ESG-linked financial modeling - Adaptability - Agility - Systemic thinking - Strategic foresight	- Fund academic research - Extend the course coverage to include change landscapes such as digital asset and cryptocurrency accounting, global risk analysis, adaptive financial leadership, tax system integration - Embed real-time reporting, scenario modeling, and risk management and analytics - Use case-based learning - Employ real-life project-based learning - Use blended-learning, flipped classrooms, and competency-based education approach

Theme	Drivers	Trends	Impact on Skills	Impact on Curriculum
				- Partner and collaborate with academia, industry, and professionals for knowledge transfer and support for such tools as crypto tracking, real-time risk monitoring
Regulatory Forces: Increased Regulation and Governance	- Sustainability and ESG Governance - Data Governance - Ethical AI Requirements - Cybersecurity	- Legal reforms, e.g., tax and tariff, cybersecurity, and privacy - Emphasis on ethical use of technology and data - Move towards Adaptive, risk-based, principle-based regulation - Enhancement of Corporate Governance and accountability - Global regulatory divergence and convergence - RegTech and automated and real-time compliance	- Regulatory literacy including global regulatory harmonization, ethics and governance - Compliance automation - Risk management - Internal control system - Sustainability assurance - Ethical decision-making - Integrated reporting - Ethical AI auditing - Business acumen - Data skills - Data Privacy	- Cover cross-disciplinary governance, compliance and assurance standards, regulations, compliance, and ethics - Embed special topic areas such as regulation reform, RegTech, global regulatory harmonization, frameworks, and principles, automated compliance systems, ESG reporting and simulation tools, ethical AI auditing, privacy governance - Use case-based learning - Partner and collaborate with academia, industry, and professionals
Social Forces: Changing Societal Expectations, and evolving scope and nature	- Shifting stakeholder expectations and values - Growing aging populations - Gen Z workforce	- Emphasis on transparency, sustainability, ethical leadership and business practice, and accountability in financial reporting and auditing - Growth in sustainability assurance and integrated reporting	- Ethical leadership - Purpose-driven leadership - DEI and Sustainability assurance - Communication - Adaptability - Collaboration - Social responsible decision-making	- Embed cross-disciplinary technical concepts - Embed special topic areas such as integrated reporting, DEI in financial governance, sustainability assurance, ethical leadership - Employ learning approaches

Theme	Drivers	Trends	Impact on Skills	Impact on Curriculum
		- Rise of flexible, hybrid work models - Talent Shortages and decline of CPA - Increased emphasis on lifelong learning, succession planning, knowledge transfer and mentorship - Emphasis on resilience, well-being, diversity, equity, and inclusive cultures - Transformation of accountant's role to strategic advisors requiring roles and training redesign - Increasing focus on skill-based instead of degree-based or credential-based hiring - Increasing adoption of skills-based, flexible, and purpose-driven career path	- Stakeholder engagement - Inclusive reporting - Mentorship & knowledge transfer	and tools such as flexible, modular learning, integrated ESG dashboards, AI ethics labs, cross-disciplinary capstones, and social impact metrics & career pathing tools - Focus on lifelong learning - Partner and collaborate with academia, industry, and professionals for knowledge transfer and support for such tools as social impact tracking, career pathing, integrated reporting systems

Source: ACCA, 2020, ACCA, 2022, ACCA, 2023; AccounitngWEB, 2024; Arkhipova et al., 2024; European Commission , 2023; HighRadius, n.d.; IFAC, 2025; ISCA, n.d.; John, 2024; Karbon, n.d.; KPMG, 2024; NetSuite, 2025; NIST, 2023; OECD, 2020; OECD, 2021; Qasim and Kharbat, 2020; Rosley et al, 2023; Sydle, 2023, TCS, n.d.; Tsiligiris and Bowyer, 2021; World Economic Forum, 2020; World Economic Forum, 2024

Appendix C

Competency Framework Comparison

Criterion	IFAC IES	AACSB Standards	CPA Evolution Model	Sustainability Accounting Competency Model	4IR Framework	IS2020
Outcome Orientation	Strong – Defines learning outcomes across technical, ethical, and behavioral domains	Moderate – Focuses more on program-level goals than individual outcomes	Strong – Built on outcome-based licensure pathways	Strong – Emphasizes ESG-related performance outcomes	Strong – Focuses on demonstrable future-of-work skills	Strong – Specifies performance-based outcomes across six competency realms including data, technology, and systems integration
Skills Integration	Strong – Combines technical, ethical, and professional skills	Moderate – Encourages integration but lacks granularity	Strong – Integrates core and discipline-specific skills	Strong – Blends ESG, ethics, and leadership	Strong – Merges digital, emotional, and adaptive skills	Strong – Embeds technical, analytical, and interpersonal skills across domains
Industry Alignment	Strong – Developed with global professional bodies	Moderate – Encourages relevance but not industry-specific	Strong – Co-developed with regulators and firms	Growing – Increasing demand for ESG assurance	Growing – Aligns with future workforce needs	Strong – Co-created with industry partners to reflect current and emerging IS roles
Adaptability & Flexibility	Moderate – Periodically updated but slower to respond	High – Flexible for innovation and curriculum redesign	High – Designed for evolving CPA roles and tech	High – Responsive to SDGs and Industry 4.0	High – Built for rapid change and hybrid roles	High – Modular design supports institutional tailoring and interdisciplinary use
Global Relevance	High – Adopted across 130+ countries	High – International accreditation body	Moderate – U.S.-centric but globally influential	High – ESG standards are globally recognized	High – Applicable across borders and sectors	High – Globally informed with relevance across diverse educational contexts

Criterion	IFAC IES	AACSB Standards	CPA Evolution Model	Sustainability Accounting Competency Model	4IR Framework	IS2020
Assessment Compatibility	Strong – Supports competency-based assessment (IES 6)	Strong – Emphasizes assurance of learning	Strong – Aligns with CPA licensure exams	Moderate – Less formalized assessment guidance	Moderate – Focuses on traits, not structured assessments	Strong – Supports authentic assessment through project-based and experiential learning
Pedagogical Soundness	Strong – Outcome-based and instructional design aligned	Strong – Encourages evidence-based teaching and continuous improvement	Strong – Supports modular and adaptive learning	Moderate – Emerging pedagogical models	Moderate – Less formalized instructional strategies	Strong – Emphasizes active learning, collaboration, and real-world problem solving
Stakeholder Inclusiveness	Strong – Developed with input from global regulators and educators	Strong – Includes academic and industry voices	Strong – Built with firms, educators, and regulators	Moderate – Developed through academic research networks	Moderate – Driven by thought leaders, less institutional input	Strong – Inclusive of academia, industry, and professional bodies in design and review
Comprehensive Scope	Broad – Covers ethics, audit, reporting, and behavior	Moderate – Focuses on governance and quality assurance	Broad – Includes core and specialized domains	Moderate – Focused on ESG and sustainability	Moderate – Emphasizes future skills but not accounting-specific	Broad – Covers six domains including data, systems, strategy, and human-centered design
Discipline Fit	Strong – Tailored for accounting professionals	Strong – Designed for accounting programs	Strong – Direct fit for CPA licensure	Moderate – Best as a supplement to core accounting	Moderate – Enhances accounting with tech and human skills	Strong – Purpose-built for Information Systems programs with cross-disciplinary relevance and explicitly adaptable to accounting curriculum
Total Score**	28	23	28	22	22	30

** Score code rubric is Strong or Broad or High = 3, Moderate = 2, and Growing = 1

Appendix D

Standard-Harmonized Competency Framework of 6 Domains 52 Competency Areas

Competency Area	Description	Standard-Emphasized Level	Rationale
Domain 1: Technical Competence			
1. Financial Accounting and Reporting	Applying accounting principles and frameworks to prepare financial statements	Strong	Direct emphasis by all except IS2020
2. Management Accounting	Budgeting, forecasting, cost control, and performance evaluation	Strong	Direct emphasis by all except IS2020
3. Financial Analysis and Management	Financial strategy, valuation, and investment decision-making	Strong	Direct emphasis by all except IS2020
4. Taxation	Tax compliance, ethics, and legal principles	Strong	Direct emphasis by IFAC IES and CPA Evolution Model and implied by AACSB
5. Advanced Tax Planning & Structuring	Multijurisdictional tax planning and optimization	Weak	Only emphasis by TCP discipline of CPA Evolution Model
6. Audit and Assurance	Audit lifecycle, standards, and reporting	Strong	Direct emphasis by all except IS2020
7. Continuous Auditing & Monitoring	Use of automation and real-time data to perform ongoing audit procedures and risk assessments.	Weak	Mentioned in CPA and IS2020, but not emphasized across standards
8. Governance, Risk Management, and Internal Controls	Enterprise and IT risks and controls, risk management, internal control, and governance frameworks	Strong	Direct emphasis by all
9. IS Foundations	IS architecture and IS design and management including IS infrastructure, enterprise systems and network architecture and design, cloud-based platforms and accounting systems, IS risks and opportunities for business	Strong	Direct emphasis by all

Competency Area	Description	Standard-Emphasized Level	Rationale
10. Application Development and Programming	Programming paradigms and automation	Strong	Direct emphasis by IS2020 and implied by others
11. Systems Analysis & Design	Modeling and designing business information systems	Strong	Direct emphasis by IS2020 and implied by others
12. Business Laws and Regulations	Legal frameworks and data governance	Strong	Direct emphasis by all except implied by IS2020
13. Economics	Micro and macroeconomic principles	Strong	Direct emphasis by all except IS2020
14. Organizational Systems, Business Processes, and Strategic Integration	Business models, workflows, and strategic alignment	Strong	Direct emphasis by all
15. Business Strategy and Management	Strategic planning, organizational design, and behavior	Strong	Direct emphasis by all
16. Assurance Fundamentals	Core assurance principles and judgment	Strong	Direct emphasis by IFAC IES and CPA Evolution Model and implied by AACBS
17. Practical Accounting and Interdisciplinary Experience	Applying accounting in real-world scenarios	Strong	Direct emphasis by all
18. Research Literacy for Business and Professional Development	Designing, conducting, and applying research using credible data and tools to generate actionable insights for accounting, business, and professional development	Strong	Direct emphasis in IFAC IES and AACSB, partial in CPA Evolution Model, and weak in IS2020
Domain 2: Professional Skills			
19. Ambiguity Resilience	Adapting to uncertainty and complexity	Partial	Implied by all
20. Project and Engagement Management	Managing projects and engagements effectively	Partial	Implied by all
21. Change Management	Leading and adapting to organizational change	Partial	Implied by all

Competency Area	Description	Standard-Emphasized Level	Rationale
22. Innovation and Impact	Applying innovation to solve problems and create value	Strong	Direct emphasis by all
23. Global and Cultural Awareness	Operating effectively in diverse global contexts	Partial	Implied by all
24. Communication, Collaboration, and Relationship Management	Communicating and collaborating across contexts	Strong	Direct emphasis by all
25. Personal Effectiveness and Professional Commitment	Managing responsibilities with discipline and ethics	Strong	Direct emphasis by all
26. Strategic Organizational Leadership and Execution	Leading teams and executing tasks strategically	Strong	Direct emphasis by all
27. Entrepreneurial Mindset	Creating value through innovation and initiative	Partial	Emphasis in AACSB, implied in IS2020 and CPA Evolution Model
28. Analytical and Systems Thinking	Applying critical thinking and systems analysis and having ability to analyze and evaluate alternatives and make reasonable and ethical decision-making	Strong	Direct emphasis by all
29. Strategic Advisory & Decision-Making	Integrating insights for high-impact decisions	Strong	Direct emphasis by all
Domain 3: Professional Values, Ethics, and Attitudes			
30. Ethical Principles and Professional Conducts	Applying ethical principles and global codes	Strong	Direct emphasis by all
31. Professional Skepticism and Judgment	Exercising skepticism and ethical reasoning	Strong	Direct emphasis by all
32. Commitment to Public Interest	Acting in the public interest and promoting trust	Strong	Direct emphasis by all

Competency Area	Description	Standard-Emphasized Level	Rationale
33. Professional Attitudes and Dispositions	Upholding fairness, empathy, and moral courage	Strong	Direct emphasis by IFAC IES and implied by others
34. Public Policy & Regulatory Advocacy	Ability to engage with regulatory bodies, contribute to policy development, and advocate for ethical and transparent financial systems.	Weak	Implied in IFAC and AACSB, but not a core focus in CPA or IS2020
Domain 4: Lifelong Learning and Continuing Professional Development			
35. Professional Development	Sustaining competence through learning and reflection	Strong	Direct emphasis by all
36. Assessment of Competence	Evaluating and reflecting on professional capabilities	Partial	Implied by all
37. Lifelong Learning Mindset and Orientation	Embracing continuous learning and adaptability	Strong	Direct emphasis by all
38. Self-directed Development	Managing one’s own learning and growth	Strong	Direct emphasis by all
39. Career Readiness	Demonstrating readiness for evolving professional roles	Strong	Direct emphasis by all
40. Career Planning and Adaptability	Navigating career transitions and aligning goals	Strong	Direct emphasis by all
Domain 5: Integration of Emerging Technologies			
41. Digital & Systems Intelligence	Applying digital technologies and systems and technology-enabled decision making by using digital tools	Strong	Direct emphasis by IS2020 and implied by others
42. Data and Information Management and Governance	Managing and governing data assets	Strong	Direct emphasis by IS2020 and implied by others
43. Data and Business Analytics	Using analytics to support business analysis and decision-making and communicating insights through visualizations	Strong	Direct emphasis by IS2020 and CPA Evolution Model and implied by others
44. Technology Ethics and Governance	Governing technology use ethically	Strong	Direct emphasis by IS2020 and IFAC IES and implied by others

Competency Area	Description	Standard-Emphasized Level	Rationale
45. Emerging Technologies	Adapting to and integrating modern technologies	Strong	Direct emphasis by all and implied by AACSB
46. Cybersecurity Governance, Risk, and Assurance	Managing cybersecurity risks and controls	Strong	Direct emphasis by IS2020 and IFAC IES and implied by others
47. Secure Computing and System Security	Ensuring system security and data protection	Strong	Direct emphasis by IS2020 and implied by others
Domain 6: Sustainability and ESG Reporting			
48. Sustainability Foundations & ESG Frameworks	Understanding sustainability as a systemic concept and ESG as a reporting subset	Strong	Direct emphasis by IFAC IES and implied by others
49. Sustainability Strategy, Governance & Risk	Integrating ESG into strategy, governance, and risk management	Strong	Direct emphasis by IFAC IES and implied by others
50. Sustainability Reporting & Assurance	Preparing and assuring ESG disclosures using global standards	Strong	Direct emphasis by IFAC IES and implied by others
51. ESG Data, Metrics & Performance	Managing ESG data and evaluating performance indicators	Strong	Direct emphasis by IFAC IES and implied by others
52. ESG Impact, Materiality & Stakeholder Engagement	Assessing ESG impact and engaging stakeholders ethically	Strong	Direct emphasis by IFAC IES and implied by others

Appendix E

Aligned Literature-Reviewed Skills by the Standard-Harmonized Competency Framework

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
1. Cybersecurity & data integrity	2000s, 2020s	AD	Partially Mapped	Integration of Emerging Technologies	Cybersecurity Governance, Risk, and Assurance	Identify and respond to cybersecurity risks; protect digital assets
2. Cybersecurity awareness and basics	Technological forces	AD	Mapped	Integration of Emerging Technologies	Cybersecurity Governance, Risk, and Assurance	Understand governance, risk and basic protective measures
3. Proactive cybersecurity leadership for financial systems	2030s	SD	Mapped	Integration of Emerging Technologies	Cybersecurity Governance, Risk, and Assurance	Identify and respond to cybersecurity risks; align security with objectives
4. Advanced data analytics and modelling (Python, SQL, advanced visualization)	2020s	SD	Mapped	Integration of Emerging Technologies	Data and Business Analytics	Acquire, model, predict, and visualize data outcomes
5. Advanced spreadsheet proficiency	2010s	SD	Mapped	Integration of Emerging Technologies	Data and Business Analytics	Programmatic modelling and analysis using advanced tools
6. Data analytics and interpretation using Excel, Power BI, Tableau	1980s, 2000s, 2010s, Technological forces	SD	Mapped	Integration of Emerging Technologies	Data and Business Analytics	Analyze, visualize, interpret data for decisions and apply analysis and predictive techniques and tools

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
7. Data literacy	Technological forces	AD	Mapped	Integration of Emerging Technologies	Data and Business Analytics	Interpret, model, and use data for decisions
8. Data skills	Regulatory Forces	AD	Mapped	Integration of Emerging Technologies	Data and Business Analytics	Demonstrate practical and technical abilities to collect, analyze, manipulate, clean, transform, model, and present data using specific tools and methods such as SQL, Python, or Excel
9. Interpretation of continuous data flows and acting on insights instantly	2030s	AD	Mapped	Integration of Emerging Technologies	Data and Business Analytics	Acquire, analyze, and interpret streaming data for decisions
10. Predictive modeling	2030s	AD	Mapped	Integration of Emerging Technologies	Data and Business Analytics	Apply statistical reasoning and predictive analytics
11. Data governance	2030s	AD	Mapped	Integration of Emerging Technologies	Data and Information Management and Governance	Understand and implement data governance frameworks
12. AI collaboration	2030s	AD	Weakly Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Evaluate reliability and relevance of tech outputs; apply judgment
13. API and system integration knowledge	2020s	AD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Understand interoperable, secure, scalable system integrations; Design integrations and APIs
14. Blockchain	2020s	SD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Understand and evaluate blockchain use

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
15. Cloud accounting	Technological forces	AD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Understand and use cloud accounting platforms and align controls
16. Cloud accounting platforms & management	2020s	AD	Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Operate cloud accounting systems and align with strategy
17. Cloud computing awareness	2010s	AD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Navigate cloud platforms and architectures
18. Digital and technology literacy	Technological forces	AD	Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Understand and apply digital technologies and platforms
19. Digital collaboration	2020s	AD	Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Use digital tools and platforms for collaborative work
20. Interoperability and ecosystem management	2030s	AD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Design interoperable systems and manage ecosystems
21. Quantum computing awareness and impact assessment	2030s	SD	Partially Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Understand implications of emerging compute paradigms
22. IT literacy to navigate ERP systems and collaborate across departments	1990s	AD	Mapped	Integration of Emerging Technologies	Digital & Systems Intelligence	Apply digital tools and enterprise systems knowledge

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
23. AI literacy	2020s	AD	Mapped	Integration of Emerging Technologies	Emerging Technologies	Understand and apply AI, automation; assess implications
24. AI/ML development and application	2030s	AD	Partially Mapped	Integration of Emerging Technologies	Emerging Technologies	Evaluate and apply AI/ML to business problems
25. Compliance automation	Regulatory Forces	AD	Mapped	Integration of Emerging Technologies	Emerging Technologies	Automate compliance processes; align controls
26. RPA, AI/ML tools	2020s	AD	Mapped	Integration of Emerging Technologies	Emerging Technologies	Automate processes; apply ML tools for analytics
27. Tech-enabled auditing	Technological forces	AD	Mapped	Integration of Emerging Technologies	Emerging Technologies	Apply tech to enhance audit processes and assurance
28. System audits	2000s	AD	Mapped	Integration of Emerging Technologies	Secure Computing and System Security	Identify and respond to risks; protect digital assets
29. AI governance	2030s	AD	Partially Mapped	Integration of Emerging Technologies	Technology Ethics and Governance	Implement AI governance frameworks and ethical oversight
30. AI oversight	Technological forces	AD	Weakly Mapped	Integration of Emerging Technologies	Technology Ethics and Governance	Evaluate reliability and relevance of AI outputs; Evaluate and govern AI risks and use
31. Ethical AI auditing	Regulatory Forces	AD	Unmapped	Integration of Emerging Technologies	Technology Ethics and Governance	Audit algorithms and AI decision processes

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
32. Ethical technology governance	Technological forces	AD	Mapped	Integration of Emerging Technologies	Technology Ethics and Governance	Implement governance frameworks for ethical tech use
33. Ethics in AIS (Accounting Information Systems)	2030s	AD	Partially Mapped	Integration of Emerging Technologies	Technology Ethics and Governance	Evaluate algorithmic bias, data privacy, accountability
34. Continuous learning	1990s, 2010s, 2020s, Technological forces	AD	Mapped	Lifelong Learning and Continuing Professional Development	Lifelong Learning Mindset and Orientation	Engage in continuous learning and reskilling; Pursue CPD
35. Lifelong learning mindset	2030s	AD	Mapped	Lifelong Learning and Continuing Professional Development	Lifelong Learning Mindset and Orientation	Engage in continuous reskilling and reflective practice
36. Mentorship & knowledge transfer	Social forces	AD	Partially Mapped	Lifelong Learning and Continuing Professional Development	Professional Development	Develop others; manage career readiness and learning
37. Adaptability	2010s, 2020s, Economic Forces, Social forces	AD	Mapped	Professional Skills	Ambiguity Resilience	Maintain effectiveness in change; Ability to adjust to new conditions, roles, or environments
38. Agility	Economic forces	AD	Mapped	Professional Skills	Ambiguity Resilience	Timely and efficiently respond to change
39. Flexibility	2010s	AD	Mapped	Professional Skills	Ambiguity Resilience	Ability to be open and responsive to variation

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
40. Analytical thinking to interpret financial data in general and the context of volatile markets	1970s, 1980s	AD	Partially Mapped	Professional Skills	Analytical and Systems Thinking	Apply critical thinking, systems analysis, and reasoning
41. Complex problem-solving	2020s	AD	Mapped	Professional Skills	Analytical and Systems Thinking	Synthesize across domains; implement evidence-based solutions
42. Systemic thinking	Economic forces	AD	Partially Mapped	Professional Skills	Analytical and Systems Thinking	Ability to understand complex systems, interdependencies, and long-term impacts across organizational, technological, and societal domains and to analyze complex systems
43. Change management	2020s	AD	Partially Mapped	Professional Skills	Change Management	Lead, plan, and implement organizational change
44. Advanced communication (multi-modal)	2020s	AD	Partially Mapped	Professional Skills	Communication, Collaboration, and Relationship Management	Communicate across written, oral, visual, digital forms
45. Communication skills to explain financial data and results to stakeholders	1960s, 1970s, 1980s	AD	Partially Mapped	Professional Skills	Communication, Collaboration, and Relationship Management	Communicate clearly across formats; adapt to audience
46. Communication, teamwork, cross-functional skills, collaboration	1990s, 2010s, Social forces	AD	Mapped	Professional Skills	Communication, Collaboration, and Relationship Management	Communicate effectively; Engage stakeholders; Collaborate and manage relationships across functions
47. Global mindset	2000s	AD	Mapped	Professional Skills	Global and Cultural Awareness	Operate effectively in diverse cultural and global contexts

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
48. Business transformation	Technological forces	AD	Mapped	Professional Skills	Innovation and Impact	Drive measurable change through tech and process redesign
49. Innovation and creativity	2030s	AD	Mapped	Professional Skills	Innovation and Impact	Evaluate emerging tech and create measurable organizational impact
50. Strategic advisory	1980s, 2020s, 2030s, Technological forces	AD	Weakly Mapped	Professional Skills	Strategic Advisory & Decision-Making	Demonstrate abilities for scenario planning, stakeholder framing, governance advising, influence and negotiation, and ethical trade off analysis; Integrate multidisciplinary insights into high-impact decision-making
51. Scenario modeling and planning	Economic forces	AD	Partially Mapped	Professional Skills	Strategic Advisory & Decision-Making	Use modelling and scenario planning for decisions
52. Purpose-driven leadership	Social forces	AD	Partially Mapped	Professional Skills	Strategic Organizational Leadership and Execution	Lead and align organizations to purpose
53. Ethical decision-making	2000s, Regulatory Forces	AD	Mapped	Professional Values, Ethics, and Attitudes	Ethical Principles and Professional Conducts	Lead responsibly in complex, tech-driven environments
54. Ethical integrity and independence	1980s	AD	Mapped	Professional Values, Ethics, and Attitudes	Ethical Principles and Professional Conducts	Uphold ethics, objectivity, due care
55. Ethical leadership	2010s, 2030s, Social forces	AD	Mapped	Professional Values, Ethics, and Attitudes	Ethical Principles and Professional Conducts	Champion integrity and ethical foresight, Anticipate ethical challenges in tech and sustainability, Lead ethically

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
56. Ethics and public responsibility	1960s	AD	Mapped	Professional Values, Ethics, and Attitudes	Ethical Principles and Professional Conducts	Apply ethical principles and core professional values
57. Ethical judgment	1990s, Technological forces	AD	Mapped	Professional Values, Ethics, and Attitudes	Professional Skepticism and Judgment	Exercise professional judgment, skepticism, ethical reasoning
58. Socially responsible decision-making & stakeholder engagement	Social forces	AD	Partially Mapped	Sustainability and ESG Reporting	ESG Impact, Materiality & Stakeholder Engagement	Engage stakeholders
59. ESG awareness and sustainability accounting	2010s	AD	Partially Mapped	Sustainability and ESG Reporting	Sustainability Foundations & ESG Frameworks	Understand sustainability standards and reporting
60. Sustainability and ESG	2030s	AD	Mapped	Sustainability and ESG Reporting	Sustainability Foundations & ESG Frameworks	Understand standards (ISSB, GRI), ESG strategy and governance
61. ESG advisory (e.g., ESG-linked financial modelling)	Economic forces	AD	Partially Mapped	Sustainability and ESG Reporting	Sustainability Reporting & Assurance	Integrate ESG into financial models and strategy
62. ESG and Sustainability assurance	2020s, Social forces, Regulatory Forces	AD	Mapped	Sustainability and ESG Reporting	Sustainability Reporting & Assurance	Assure sustainability reporting; Assure ESG disclosures using standards and materiality

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
63. Sustainability & integrated reporting, inclusive reporting	2010s, 2020s, Economic Forces, Social forces, Regulatory Forces	AD	Mapped	Sustainability and ESG Reporting	Sustainability Reporting & Assurance	Prepare and interpret sustainability and integrated reports and disclosures; report inclusively
64. Interpreting AI-generated tax insights, policy forecasting, sustainability-related tax advisory	2030s	AD	Weakly Mapped	Technical Competence	Advanced Tax Planning & Structuring	Apply tax research; evaluate predictive outputs
65. Tax digital integration and ethical judgment	2020s	AD	Weakly Mapped	Technical Competence	Advanced Tax Planning & Structuring	Apply digital tools to tax; apply judgment to digital outputs
66. Cross-border tax strategy	Economic forces	AD	Unmapped	Technical Competence	Advanced Tax Planning & Structuring	Apply multijurisdictional tax principles and structuring
67. Tax advisory and analytical expertise	2010s	AD	Partially Mapped	Technical Competence	Advanced Tax Planning & Structuring; Taxation	Design structures; apply tax research and advisory skills
68. COBOL or FORTRAN programming fundamentals	1960s	SD	Weakly Mapped	Technical Competence	Application Development and Programming	Apply programming concepts across paradigms; algorithmic thinking; control structures
69. Audit independence	1960s, 1970s	AD	Mapped	Technical Competence	Audit and Assurance	Apply ethical and professional standards; Independence judgment and reporting
70. Audit sampling	1980s	AD	Mapped	Technical Competence	Audit and Assurance	Assess risk, perform procedures, evaluate evidence

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
71. Auditing proficiency	1960s	AD	Mapped	Technical Competence	Audit and Assurance	Apply standards; execute audit lifecycle
72. Blockchain assurance	Technological forces	SD	Weakly Mapped	Technical Competence	Audit and Assurance	Evaluate blockchain implications; assure transactions
73. Forensic accounting	2000s	AD	Partially Mapped	Technical Competence	Audit and Assurance	Evaluate fraud, noncompliance; perform investigative procedures
74. Professional judgment	1980s	AD	Mapped	Technical Competence	Analytical and Systems Thinking	Ability to analyze and evaluate alternatives and make reasonable and ethical decision-making
75. Data privacy regulations	Regulatory Forces	AD	Partially Mapped	Technical Competence	Business Laws and Regulations	Identify and respond to data privacy risk and apply privacy regulations and standards
76. Deep knowledge of SOX and other new laws	2000s	AD	Partially Mapped	Technical Competence	Business Laws and Regulations	Apply legal/regulatory frameworks; ensure compliance
77. Ethics and governance	Regulatory Forces	AD	Mapped	Technical Competence	Business Laws and Regulations	Understand evolving global regulatory frameworks
78. Global regulatory harmonization	Regulatory Forces	AD	Mapped	Technical Competence	Business Laws and Regulations	Understand evolving global regulatory frameworks
79. Regulation agility	2030s	AD	Partially Mapped	Technical Competence	Business Laws and Regulations	Understand evolving regulatory frameworks and compliance
80. Regulatory compliance	1970s	AD	Mapped	Technical Competence	Business Laws and Regulations	Understand legal and regulatory frameworks and data governance
81. Regulatory literacy	Regulatory Forces	AD	Mapped	Technical Competence	Business Laws and Regulations	Understand evolving global regulatory frameworks

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
82. Strategic foresight	Economic forces	AD	Partially Mapped	Technical Competence	Business Strategy and Management	Ability to anticipate future trends, disruptions, and opportunities, long term consequences and align strategy
83. Strategic thinking	1990s, 2010s, 2020s	AD	Partially Mapped	Technical Competence	Business Strategy and Management	Apply strategic processes to align resources and change, Align organizational capabilities and strategy
84. Global finance and regulations	Economic forces	AD	Weakly Mapped	Technical Competence	Economics	Understand macro impacts, including impact of cross-border regulations
85. Deep knowledge of GAAP	1970s	AD	Mapped	Technical Competence	Financial Accounting and Reporting	Prepare financial statements using applicable frameworks
86. Digital asset accounting	Economic forces	AD	Unmapped	Technical Competence	Financial Accounting and Reporting	Account for digital assets and crypto-related instruments
87. GAAP and cost accounting	1960s	AD	Mapped	Technical Competence	Financial Accounting and Reporting	Prepare financial statements using applicable frameworks, apply accounting principles to specific accounts
88. Global and local accounting standards	Economic forces	AD	Mapped	Technical Competence	Financial Accounting and Reporting	Understand and apply financial statements using applicable global and local accounting standards
89. Inflation accounting and reporting	1970s	AD	Mapped	Technical Competence	Financial Accounting and Reporting	Apply accounting principles to specific accounts and disclosures
90. International GAAP / IFRS alignment	1990s	AD	Mapped	Technical Competence	Financial Accounting and Reporting	Prepare statements using applicable frameworks; evaluate disclosures
91. Technical proficiency in GAAP	1980s	AD	Mapped	Technical Competence	Financial Accounting and Reporting	Prepare and evaluate financial statements and disclosures
92. Financial analysis	1960s	AD	Mapped	Technical Competence	Financial Analysis and Management	Evaluate financial strategies; ratio, trend, cash flow, valuation, modelling

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
93. Automated control design and audit	2030s	AD	Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Design automated controls and provide assurance over them
94. Data integrity and controls	2010s	AD	Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Ensure data quality and internal control effectiveness
95. Holistic risk management	2020s	AD	Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Assess enterprise, IT, and IS risk and mitigation
96. Internal control design and data integrity	1970s	AD	Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Assess and design internal controls and controls to ensure data integrity
97. Internal control design to prevent fraud and ensure compliance	2000s	AD	Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Assess governance; implement internal controls
98. Internal control system	Regulatory Forces	AD	Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Understand internal control frameworks and principles sufficient to design, assess, and implement enterprise internal control system
99. Internal controls to ensure data integrity and auditability	1960s	AD	Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Identify, assess, and mitigate risks; assess governance structures and controls
100. IT risk management	2000s	AD	Partially Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Align IT controls with regulatory requirements

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
101. IT SOX compliance	2000s	AD	Partially Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Align IT controls with regulatory requirements
102. Risk management	1990s, 2000s, Regulatory Forces	AD	Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Identify, assess, mitigate enterprise and IT risks
103. SOX compliance	2000s	AD	Partially Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Design controls to ensure compliance and auditability
104. Strategic risk management and analysis	Economic forces	AD	Partially Mapped	Technical Competence	Governance, Risk Management, and Internal Controls	Analyze and assess strategic financial risk; scenario planning
105. ERP systems, databases, emerging analytics tools	2000s, 2010s	AD	Mapped	Technical Competence	IS Foundations	Understand, operate and use enterprise systems and analytics tools; Understand and apply IS concepts related to data and data management to effectively use, assess, design, and implement data management systems and services in enterprise and accounting contexts
106. PC & Spreadsheet literacy	1970s	AD	Partially Mapped	Technical Competence	IS Foundations	Understand and use PC and spreadsheet effectively
107. Understanding and use of accounting software and ERP systems and data flows	2010s	AD	Mapped	Technical Competence	IS Foundations	Understand accounting data flows and apply enterprise and accounting systems
108. Working with IT teams	1970s	AD	Mapped	Technical Competence	IS Foundations	Ability to effectively working with IT teams

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
109. Business acumen	Regulatory Forces	AD	Mapped	Technical Competence	Organizational Systems, Business Processes, and Strategic Integration	Apply business judgment; govern data; apply privacy law
110. Interdisciplinary agility (finance, tech, strategy) to solve complex business problems	2030s	AD	Partially Mapped	Technical Competence	Organizational Systems, Business Processes, and Strategic Integration	Integrate cross functional knowledge to design solutions
111. Architectural understanding of strategic AIS system design and optimization	2030s	AD	Partially Mapped	Technical Competence	Systems Analysis & Design	Design integrated, scalable, and secure accounting systems
112. Business process redesign	Technological forces	AD	Mapped	Technical Competence	Systems Analysis & Design	Analyze and model business processes; recommend improvements
113. ERP implementation	1990s	AD	Mapped	Technical Competence	Systems Analysis & Design	Understand enterprise systems; design and implement systems
114. ERP mastery to manage end-to-end processes	2020s	AD	Partially Mapped	Technical Competence	Systems Analysis & Design	Understand and design integrated enterprise systems
115. Human-centric design	Technological forces	AD	Partially Mapped	Technical Competence	Systems Analysis & Design	Design user-centered systems and processes
116. Manual and computer-based systems bridging	1960s	SD	Partially Mapped	Technical Competence	Systems Analysis & Design	Maintain effectiveness under incomplete info and change

Literature-Reviewed Skill	Source	Type	Mapping Status	Competency Domain	Competency Area	Representative Competency
117. Manual-to-digital process bridging	1990s	SD	Partially Mapped	Technical Competence	Systems Analysis & Design	Design systems; adapt to change
118. Process automation and workflow design using RPA and other technologies	2020s	AD	Mapped	Technical Competence	Systems Analysis & Design	Design automation and workflows; implement reusable components
119. System implementation awareness	2010s	AD	Mapped	Technical Competence	Systems Analysis & Design	Design, implement scalable and user-centered systems
120. Systems analysis	1980s	AD	Partially Mapped	Technical Competence	Systems Analysis & Design	Analyze, model, and design business systems
121. Systems analysis and design (manual-to-batch transition)	1960s	SD	Weakly Mapped	Technical Competence	Systems Analysis & Design	Analyze, model, and design business information systems
122. Systems analysis and design (traditional accounting/process flows)	1960s	SD	Partially Mapped	Technical Competence	Systems Analysis & Design	Analyze, model, and design business information systems
123. Tax regulatory adaptation and tax software proficiency	2000s	AD	Partially Mapped	Technical Competence	Taxation	Navigate tax procedures; operate tax software within systems
124. Taxation foundation	1990s	AD	Partially Mapped	Technical Competence	Taxation	Apply taxation methods across contexts; ensure compliance

Appendix F

Representative Competency by Unified Competency Area

Competency Area	Description	Classification	Representative Competency**
Domain 1: Technical Competence			
1. Financial Accounting and Reporting	Applying accounting principles and frameworks to prepare financial statements	Layer 1	Prepare financial statements using applicable frameworks, apply accounting principles to specific accounts, record and evaluate select transactions and events, evaluate disclosures and reporting frameworks
2. Management Accounting	Budgeting, forecasting, cost control, and performance evaluation	Layer 1	Apply strategic planning and resource allocation, budgeting, forecasting, performance measurement, cost analysis and control, and decision-making techniques
3. Financial Analysis and Management	Financial strategy, valuation, and investment decision-making	Layer 2	Evaluate financial strategies, assess organizational performance, and support investment decision-making through advanced financial analysis and valuation techniques, compare sources of financing across capital markets and instruments, analyze cash flow and working capital needs, assess financial position using ratio, trend, and cash flow analysis, evaluates cost of capital components and apply capital budgeting methods to guide investment decisions, explain and apply income, asset-based, and market valuation approaches, financial modeling, market analysis, and industry benchmarking to support business planning and long-term financial management
4. Taxation	Tax compliance, ethics, and legal principles	Layer 1	Demonstrate understanding of ethical and legal responsibilities in tax practice, apply various taxation methods across individual and corporate contexts, navigate tax procedures and ensure regulatory compliance, interpret and apply legal principles in tax-related matters, evaluate tax consequences of asset acquisition and disposition, prepare and review tax returns for individuals and entities

Competency Area	Description	Classification	Representative Competency**
5. Advanced Tax Planning & Structuring	Multijurisdictional tax planning and optimization	Layer 2	Apply multijurisdictional tax principles to ensure compliance and optimize outcomes across different tax regimes, design and evaluate entity structures to support operational, legal, and tax efficiency, structure cross-border transactions to manage tax exposure, ensure compliance, and support international growth, conduct tax research using authoritative sources to resolve complex issues and support advisory recommendations
6. Audit and Assurance	Audit lifecycle, standards, and reporting	Layer 1	Apply regulatory, ethical, and professional standards throughout audit engagements, execute audit lifecycle: plan engagements, assess risk, perform procedures, and report findings, evaluate internal controls, IT systems, and entity environments to identify audit risks, assess fraud, noncompliance, and material misstatement indicators, apply materiality concepts to guide audit strategy and reporting, address complex audit areas (e.g., estimates, related parties) and evaluate evidence, prepare audit reports and communicate conclusions clearly, conduct review, compilation, and attestation engagements, evaluate post-reporting events for financial impact.
7. Continuous Auditing & Monitoring	Use of automation and real-time data to perform ongoing audit procedures and risk assessments.	Layer 3	Design and implement continuous audit systems, monitor controls in real time, and respond to anomalies proactively.
8. Governance, Risk Management, and Internal Controls	Enterprise and IT risks and controls, risk management, internal control, and governance frameworks	Layer 1	Demonstrate the ability to understand and apply enterprise, IT, and IS concepts related to governance, risk assessment, risk management, and internal control system, to identify, assess, and mitigate risks in enterprise, IT, and IS contexts, assess governance structures and controls
9. IS Foundations	IS architecture and IS design and management including IS infrastructure, enterprise systems and network architecture and design, cloud-based platforms and accounting systems, IS risks and opportunities for business	Layer 1	Demonstrate the ability to understand and apply IS concepts and technological tools related to enterprise and accounting systems, system integration, IS and network architectures, configuration and management of computing and cloud infrastructure and platforms, hardware, software, and data sufficient to effectively and efficiently use, assess, design, and implement information systems and services in enterprise and accounting contexts

Competency Area	Description	Classification	Representative Competency**
10. Application Development and Programming	Programming paradigms and automation	Layer 2	Demonstrates the ability to apply programming concepts across multiple paradigms including procedural, object-oriented, functional, and declarative approaches and algorithmic thinking to solve accounting and business problems, understand how to design and structure programs using appropriate languages and tools to automate tasks, process data, and support decision-making, apply basic data types, operators, and control structures such as sequence, selection, and repetition to manage and transform data in memory, use algorithmic logic to break down problems into clear, step-by-step solutions, and organize program functionality into reusable components like functions or methods, select suitable data structures to store and manage related information, and select the most effective programming approach based on task complexity, system requirements, and accounting context such as applying object-oriented principles to model business processes while also using procedural and functional techniques for scripting, analytics, and automation
11. Systems Analysis & Design	Modeling and designing business information systems	Layer 2	Demonstrates the ability to analyze, model, and design business information systems that support accounting and organizational processes, apply structured and agile methodologies to gather requirements, evaluate workflows, and assess system feasibility, develop logical and physical models to represent data flows, system components, and user interactions, collaborate with stakeholders to define system specifications, identify risks, and recommend solutions that align with business objectives, regulatory requirements, and internal controls, understand how systems integrate across platforms and functions, and contributes to the design of scalable, secure, and user-centered systems that enhance decision-making and operational efficiency
12. Business Laws and Regulations	Legal frameworks and data governance	Layer 1	Demonstrate understanding of the legal and regulatory frameworks that govern business entities, professional accounting practice, and data governance, explain the laws applicable to different forms of legal entities and the regulatory environment in which accountants operate, including ethical, compliance, and professional standards, apply data protection and privacy regulations when collecting, storing, accessing, and sharing financial and non-financial information, ensuring responsible and lawful use of data in accounting contexts

Competency Area	Description	Classification	Representative Competency**
13. Economics	Micro and macroeconomic principles	Layer 1	Demonstrate understanding of core economic principles and their impact on business and accounting decisions, describe the fundamental concepts of microeconomics and macroeconomics, including supply and demand, market equilibrium, inflation, interest rates, and GDP, explain how changes in macroeconomic factors and indicators influence business activity, financial performance, and strategic planning, identify and compare different types of market structures such as perfect competition, monopolistic competition, monopoly, and oligopoly and evaluate their implications for pricing, competition, and regulatory oversight
14. Organizational Systems, Business Processes, and Strategic Integration	Business models, workflows, and strategic alignment	Layer 2	Demonstrates the ability to understand organizational strategy, structures, operations, functions, and environments, and apply knowledge of markets, industries, business models, operating models, economic drivers, business principles, organizational dynamics, and strategic business insight to support value creation and informed decision-making, analyze and model business processes and workflows to evaluate efficiency, assess risks and performance, identify opportunities, and recommend improvements, integrate knowledge of core business disciplines including finance, operations, marketing, strategy, and economics to support process design, process alignment with strategic and operational goals and stakeholder expectations, and cross-functional decision-making, apply systems thinking and cross-functional collaboration to design solutions that enhance performance, innovation, governance, and strategic alignment
15. Business Strategy and Management	Strategic planning, organizational design, and behavior	Layer 2	Demonstrates the ability to understand and apply strategic management principles, organizational design, and behavioral theory to support sustainable performance and value creation, explain how business, organization, and IT operations may be structured or modelled to achieve strategic and operational objectives, and articulates the purpose and interrelationships of functional and operational areas, analyze internal and external factors including market conditions, stakeholder expectations, and organizational capabilities that influence strategic direction, apply strategic planning and implementation processes to align resources, manage change, and achieve competitive advantage, use theories of organizational behavior to enhance individual, team, and organizational effectiveness through improved motivation, leadership, and culture

Competency Area	Description	Classification	Representative Competency**
16. Assurance Fundamentals	Core assurance principles and judgment	Layer 1	Demonstrate understanding of core assurance concepts and foundational capabilities by evaluating risk and control environments, exercising professional judgment, ensuring ethical compliance, and applying assurance principles across domains
17. Practical Accounting and Interdisciplinary Experience	Applying accounting in real-world scenarios	Layer 2	Demonstrate practical accounting and other relevant interdisciplinary experience by applying accounting and knowledge of accounting information systems, internal controls, risk management, and related domains to resolve real-world financial and operational challenges such as exercising professional judgment in varied business contexts, interpreting and applying accounting and other relevant standards to organizational scenarios, analyze financial and non-financial data to support decisions, evaluating the implications of accounting treatments, and communicating insights effectively to stakeholders, integrating technical expertise, ethical reasoning, and contextual awareness within dynamic organizational environments to enhance professional judgment, adaptability, and readiness for evolving roles in the accounting profession
18. Research Literacy for Business and Professional Development	Designing, conducting, and applying research using credible data and tools to generate actionable insights for accounting, business, and professional development	Layer 2	Demonstrate the ability to formulate relevant research questions, identify and evaluate credible information sources, and apply appropriate research methodologies including digital and AI-enabled tools and search engines to gather, analyze, and interpret data. It includes the capacity to validate assumptions, synthesize findings, and translate research outcomes into actionable insights that support decision-making, innovation, and strategic development in accounting, business, and professional contexts
Domain 2: Professional Skills			
19. Ambiguity Resilience	Adapting to uncertainty and complexity	Layer 0	Demonstrates resilience and adaptability in ambiguous, uncertain, and rapidly changing environments. Maintains effectiveness and sound judgment when facing incomplete information, shifting priorities, or complex problems. Responds constructively to ambiguity by reframing challenges, exploring alternatives, and remaining professionally composed under pressure
20. Project and Engagement Management	Managing projects and engagements effectively	Layer 2	Understand and apply project and engagement management principles, standards, approaches, methodologies, techniques, and tools to effectively and efficiently plan, lead, execute, and monitor projects or engagements

Competency Area	Description	Classification	Representative Competency**
21. Change Management	Leading and adapting to organizational change	Layer 3	Understand, lead, manage, and adapt to organizational change in dynamic business environments by recognizing the drivers of change such as technological innovation, regulatory shifts, and market disruption and evaluating their impact on financial and operational performance, applying change management principles to support strategic initiatives, align stakeholder interests, and manage risk, contributing to planning and implementing change initiatives, communicating effectively across functions, and fostering resilience and agility within the organization
22. Innovation and Impact	Applying innovation to solve problems and create value	Layer 3	Demonstrate the ability to evaluate emerging technologies and their impacts, apply innovative thinking to solve complex problems, and create measurable impact through the design, improvement, and transformation of financial, operational, and digital systems within organizational and societal contexts
23. Global and Cultural Awareness	Operating effectively in diverse global contexts	Layer 0	Understand global business environments and international standards, demonstrate the ability to operate effectively in diverse cultural and global contexts by applying inclusive communication, ethical sensitivity, and international business understanding to support collaboration, decision-making, and professional practice across financial, operational, and digital domains Demonstrate cultural sensitivity and inclusive communication
24. Communication, Collaboration, and Relationship Management	Communicating and collaborating across contexts	Layer 0	Demonstrates the ability to communicate clearly and effectively in written, oral, visual, and digital forms, adapting style to audience, purpose, and cultural context, collaborate constructively, and manage professional relationships with empathy, integrity, and strategic intent, engage others through active listening, inclusive dialogue, and consultative techniques to foster understanding, resolve conflict, and support shared decision-making, build and sustain trust-based relationships across diverse interpersonal and organizational settings, apply negotiation, facilitation, and coordination skills to align perspectives, strengthen stakeholder engagement, and advance collective goals

Competency Area	Description	Classification	Representative Competency**
25. Personal Effectiveness and Professional Commitment	Managing responsibilities with discipline and ethics	Layer 0	Demonstrates personal effectiveness by consistently managing responsibilities with precision, accountability, and ethical awareness. Executes tasks in a disciplined manner—adhering to professional standards, meeting deadlines, and following established procedures even under pressure. Manages time and resources to fulfill professional obligations, anticipates challenges, and plans appropriate solutions. Sets high standards for personal performance and seeks feedback to improve outcomes. Applies an open and agile mindset to explore new opportunities and adapt to evolving demands
26. Strategic Organizational Leadership and Execution	Leading teams and executing tasks strategically	Layer 3	Demonstrate the ability to contribute to organizational goals through effective task management, team collaboration, and ethical leadership, undertake assignments in accordance with established practices and meets prescribed deadlines, review own work and that of others to ensure compliance with quality standards, apply people management and delegation skills to motivate, develop, and coordinate team members in delivering assignments use appropriate tools and technologies to enhance efficiency, effectiveness, and decision-making. Influences others through initiative, adaptability, empathy, and conflict resolution to foster inclusive teamwork and drive strategic outcomes
27. Entrepreneurial Mindset	Creating value through innovation and initiative	Layer 0	Demonstrates initiative and opportunity recognition to create value through innovation, apply creative thinking and resourcefulness to proactively explore and experiment new ideas, navigate uncertainty and dynamic environments, and pursue sustainable impact
28. Analytical and Systems Thinking	Applying critical thinking and systems analysis and having ability to analyze and evaluate alternatives and make reasonable and ethical decision-making	Layer 2	Apply critical thinking, systems analysis, and intellectual reasoning to analyze problems, synthesize information across domains, evaluate alternatives, and develop and implement evidence-based solutions that consider organizational interdependencies and long-term impact, e.g., apply judgment and reasoning to accounting scenarios

Competency Area	Description	Classification	Representative Competency**
29. Strategic Advisory & Decision-Making	Integrating insights for high-impact decisions	Layer 2	Ability to serve as a strategic advisor by integrating multidisciplinary insights, stakeholder dynamics, and systems thinking into high-impact decision-making by anticipating long-term consequences, navigating ambiguity, and framing decisions within broader economic, social, and technological contexts, applying influence, negotiation, and scenario planning to guide leadership and governance conversations while balancing ethical considerations, sustainability goals, and enterprise resilience
Domain 3: Professional Values, Ethics, and Attitudes			
30. Ethical Principles and Professional Conducts	Applying ethical principles and global codes	Layer 1	Understand and apply ethical principles and core professional values and conducts including confidentiality, due care, objectivity, independence, and professional behavior in accordance with global codes of ethics and demonstrate ethical agility and strategic moral reasoning to lead responsibly in complex, technology-driven, and globally diverse environments beyond compliance and professional codes by anticipating emerging ethical challenges in areas such as artificial intelligence, sustainability, digital finance, and stakeholder activism, applying ethical foresight, cultural intelligence, and systems thinking to navigate dilemmas that span jurisdictions, technologies, and social expectations, fostering ethical innovation, facilitates inclusive decision-making, and championing integrity as a driver of trust, resilience, and long-term value creation
31. Professional Skepticism and Judgment	Exercising skepticism and ethical reasoning	Layer 1	Exercise professional judgment, skepticism, and ethical reasoning to analyze business issues and make informed decisions under uncertainty or dilemmas, evaluate evidence, and resolve complex interdisciplinary problems in accordance with professional standards and societal expectations

Competency Area	Description	Classification	Representative Competency**
32. Commitment to Public Interest	Acting in the public interest and promoting trust	Layer 1	Act in the public interest by promoting transparency, inclusiveness, and responsible stewardship of resources and societal trust and demonstrate the ability to promote audit quality and uphold compliance with professional standards and regulatory requirements in service of the public interest by applying ethical reasoning to support social responsibility, sound business practices, and good governance, understanding and evaluating the interrelationship between ethics and law, including how laws and regulations safeguard the public interest, assessing and responding to the consequences of unethical behavior for individuals, the profession, and society, reinforcing trust and accountability in a dynamic global environment
33. Professional Attitudes and Dispositions	Upholding fairness, empathy, and moral courage	Layer 1	Exhibit respect, fairness, openness, empathy, and moral courage to challenge unethical behavior and uphold professional standards under pressure and cultural sensitivity in professional contexts
34. Public Policy & Regulatory Advocacy	Ability to engage with regulatory bodies, contribute to policy development, and advocate for ethical and transparent financial systems.	Layer 3	Interpret regulatory trends, participate in standard-setting discussions, and advocate for public interest in financial policy.
Domain 4: Lifelong Learning and Continuing Professional Development			
35. Professional Development	Sustaining competence through learning and reflection	Layer 1	Demonstrate a sustained commitment to developing and enhancing professional competence through intentional learning, reflective practice, and strategic engagement with emerging trends through proactively identifying evolving industry expectations, pursuing relevant development opportunities, and integrating new knowledge, skills, and ethical standards into the professional roles to support lifelong learning, career resilience, and the capacity to contribute meaningfully to a dynamic and globally connected accounting profession

Competency Area	Description	Classification	Representative Competency**
36. Assessment of Competence	Evaluating and reflecting on professional capabilities	Layer 0	Demonstrate competencies through valid assessment methods Demonstrate the ability to evaluate and reflect on their own professional capabilities through valid assessment methods including structured self-assessment, feedback interpretation, and evidence-based judgment, applying assessment literacy to identify learning gaps, monitor progress, and align personal development with evolving professional standards and stakeholder expectations to support ethical accountability, continuous improvement, and readiness for formal and informal evaluations across academic, workplace, and regulatory contexts
37. Lifelong Learning Mindset and Orientation	Embracing continuous learning and adaptability	Layer 0	Demonstrate ability to continuously learn, adapt, and reskill, learning agility, resilience, feedback integration, openness to change, innovation mindset, engage in continuous learning and self-improvement to maintain and enhance competence
38. Self-directed Development	Managing one's own learning and growth	Layer 0	Demonstrate the capacity to take ownership of learning and independently manage their learning and professional growth through goal setting, personal strength self-evaluation, learning need identification, reflective practice, pursuit of CPD activities and strategic engagement with emerging knowledge and skills, to seek relevant opportunities, and adapt learning pathways to align with evolving industry expectations and career aspirations
39. Career Readiness	Demonstrating readiness for evolving professional roles	Layer 0	Demonstrate readiness for employability, lifelong growth, and evolving professional roles by exhibiting the knowledge, skills, and behaviors necessary to transition effectively into professional roles such as awareness of industry expectations, ethical standards, and emerging trends in technology, data, and sustainability, integrated technical competence, professional skills, and interdisciplinary knowledge
40. Career Planning and Adaptability	Navigating career transitions and aligning goals	Layer 1	Demonstrate the ability to proactively plan and manage career development includes the capacity to navigate career transitions, embrace change, and maintain relevance in a dynamic global business environment through reflective self-assessment, strategic goal setting, and continuous learning, cultivating adaptability to evolving professional roles, technologies, and market expectations by engaging in lifelong learning, seeking feedback, and aligning personal growth with emerging opportunities

Competency Area	Description	Classification	Representative Competency**
Domain 5: Integration of Emerging Technologies			
41. Digital & Systems Intelligence	Applying digital technologies and systems and technology-enabled decision making by using digital tools	Layer 2	Demonstrate the ability to understand, evaluate, and apply digital technologies and enterprise systems to enhance organizational performance, governance, and decision-making and the capacity to navigate interconnected platforms, architectures, and controls including the ethical use of digital tools, awareness of system risks and opportunities, and the ability to align technology solutions with strategic business objectives in a continuously evolving digital landscape
42. Data and Information Management and Governance	Managing and governing data assets	Layer 2	Demonstrate the ability to manage, evaluate, and govern data and information assets ethically and strategically by applying data and information management and governance concept such as data modeling, metadata, database design and principles of data quality, integrity, security, and lifecycle management including the ability to navigate emerging technologies, implement data governance frameworks, and ensure responsible stewardship of information in dynamic digital environments
43. Data and Business Analytics	Using analytics to support business analysis and decision-making and communicating insights through visualizations	Layer 2	Demonstrate the ability to acquire, validate, manage, analyze, transform, interpret and visualize data using analytical and business intelligence techniques and tools to support strategic, operational, and financial decision-making and applying statistical reasoning, data modeling, and predictive analytics to uncover insights, evaluate performance, and forecast outcomes across business functions including the ability related to ethical data stewardship, governance awareness, and the integration of emerging technologies to transform data into actionable intelligence that enhances organizational value, accountability, and agility
44. Technology Ethics and Governance	Governing technology use ethically	Layer 2	Demonstrate ability to understand technology ethics and governance frameworks, standards, and models, ethical and responsible technology use, to evaluate, apply, and govern technologies in a manner that upholds ethical standards, regulatory compliance, stakeholder expectations, and organizational integrity, and to implement governance frameworks, assess technology risks, and ensure responsible stewardship of technological systems

Competency Area	Description	Classification	Representative Competency**
45. Emerging Technologies	Adapting to and integrating modern technologies	Layer 3	Demonstrate the ability to understand the implications of technological innovation on accounting workflows, risks, controls, and stakeholder expectations including critical assessment of technology trends, ethical and governance considerations, to evaluate, integrate, and adapt to emerging technologies including artificial intelligence, automation, blockchain, and cloud platforms to enhance financial reporting, decision-making, and organizational performance, and to align digital solutions with strategic business objectives
46. Cybersecurity Governance, Risk, and Assurance	Managing cybersecurity risks and controls	Layer 2	Demonstrate understanding of apply cybersecurity governance, risk, and assurance frameworks and the ability to identify, assess, and respond to cybersecurity risks within financial and operational systems by applying the cybersecurity governance and risk management concepts and principles and assurance mechanisms to protect digital assets and sensitive information, evaluate threats and vulnerabilities, implement control frameworks, and align cybersecurity practices with organizational objectives and stakeholder expectations
47. Secure Computing and System Security	Ensuring system security and data protection	Layer 2	Demonstrate the ability to apply principles of secure computing and system security to protect financial data, digital assets, and enterprise systems through understanding of the architecture, controls, and governance mechanisms that ensure confidentiality, integrity, and availability of information across accounting systems, identification of system vulnerabilities, implementation of preventive and detective controls, and alignment with security practices with ethical standards, regulatory requirements, and organizational objectives
Domain 6: Sustainability and ESG Reporting			
48. Sustainability Foundations & ESG Frameworks	Understanding sustainability as a systemic concept and ESG as a reporting subset	Layer 2	Demonstrate understanding of sustainability as a broad, systemic concept including ESG as a subset alongside global sustainability standards and rating frameworks (e.g., SDGs, ISSB, GRI, TCFD), reporting and disclosure standards, principles of equity, inclusion, and human rights, and lead in modeling ethical behavior, exhibiting cultural awareness, navigating ethical dilemmas in ESG reporting, and influencing others ethically

Competency Area	Description	Classification	Representative Competency**
49. Sustainability Strategy, Governance & Risk	Integrating ESG into strategy, governance, and risk management	Layer 3	Integrate sustainability into organizational strategy, governance, and risk management by identifying ESG risks, fostering innovation, and transforming business or operating models while demonstrating cultural intelligence, global awareness, transparency, and effective stakeholder engagement across diverse contexts
50. Sustainability Reporting & Assurance	Preparing and assuring ESG disclosures using global standards	Layer 2	Prepare, interpret, and assure sustainability and ESG disclosures using global standards, materiality principles, and assurance frameworks for both financial and non-financial information
51. ESG Data, Metrics & Performance	Managing ESG data and evaluating performance indicators	Layer 3	Engage stakeholders in sustainability and ESG dialogues and demonstrate awareness of societal challenges, societal value creation, and commitment to responsible action and accountability through transparent reporting, and measurement and analysis of social and environmental impact
52. ESG Impact, Materiality & Stakeholder Engagement	Assessing ESG impact and engaging stakeholders ethically	Layer 3	Apply data analytics and visualization tools to interpret, present, and communicate ESG and sustainability performance effectively

** The competencies listed are representative and have been extracted, adapted, and expanded from IFAC IES, AACSB, CPA Evolution Model, and IS2020 frameworks. Some phrases may appear verbatim to preserve alignment with the original standards; however, care has been taken to avoid infringement by rewording and contextualizing most descriptions for academic and research purposes.