



Challenges in Sustainability-related Education for Professional Accountants

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Abstract The growing interest of international and national accounting organisations in sustainability-related education has led to the creation of specific frameworks for professional accountants. This study examines the challenges in providing education in sustainability-related capacity building for Certified Public Accountants and Chartered Accountants to enhance the credibility of sustainability reporting. Assessing relevant documents provided by international and national professional accounting organisations facilitates organising compelling arguments on this matter and clarifies future research questions. The documents from international and national accounting professional organisations recommending professional accountants' contribution towards sustainability and sustainability accounting and reporting have little focus on the quality of accountability and responsibility of companies for the social and environmental impacts produced by their corporate activities. Rather than this substantive discussion of the significance of sustainability accounting and reporting based on accountability towards sustainability, the focus has likely been on the technical ability to meet investors' demands for disclosure of sustainability-related risks and opportunities affecting the company's finances. Furthermore, consensus on the extent, definition, and execution of sustainability accounting and reporting is lacking, resulting in increased uncertainty regarding the role of sustainability accounting and professional accountants. These findings necessitate a further understanding the relationship between sustainability and accounting in designing sustainability-related education for professional accountants. The findings of this study contribute to the development of sustainability-related education for professional accountants.

Key words reporting, assurance, competencies, capacity building, Certified Public Accountants

April 10, 2024 accepted

I Introduction

In January 2024, the International Federation of Accountants (IFAC) published a document titled ‘Educating Accountants for a Sustainable Future: A Literature Review of Competencies, Education Strategies, and Challenges for Sustainability Reporting and Assurance’, which defines the competencies needed for professional accountants to provide services such as sustainability reporting and assurance at a global level. This document also encourages the introduction of education for capacity building to national and regional accounting professional bodies and stakeholders and has been published based on the establishment of various laws and regulations on sustainability disclosure in capital markets in different countries and regions, including the European Union (EU), the United Kingdom (UK), the United States of America (USA), and Japan. Efforts are ongoing to set sustainability-related standards by the International Sustainability Standards Board, the International Auditing and Assurance Standards Board, the International Ethical Standards for Accountants Council, and the International Ethics Standards Board for Accountants. The demand for sustainability reporting and assurance from capital market participants is increasing. Thus, there is a growing need for credible sustainability information.

Considering the important role that professional accountants play in ensuring credibility, there is an international consensus on the need for sustainability-related education and capacity building to meet the demands of stakeholders, especially those in the capital markets.

What competencies are required for professional accountants working in sustainability reporting and assurance, and what educational strategies and challenges are necessary for developing these competencies for professional accounting organisations remain the central questions that must be addressed. Although the literature on sustainability education in accounting within higher education institutions is abundant, focusing on sustainability-related education for the accounting profession remains limited. Furthermore, the answers to the two questions

above remain inconclusive at an international level despite references to arguments in previous literature. However, practical documents related to this capacity building have been previously published by accounting professional bodies at a national level, such as in Japan and Singapore. Therefore, there is a need to minimise this gap.

This study examines the challenges in sustainable capacity development for professional accountants and identifies future research questions through a literature review. This review significantly contribute to the literature since it provides a basis for policy discussions on sustainability-related education for professional accountants. The remaining sections of the paper are structured as follows: Section 2 discusses the competencies required for sustainability-related services and educational strategies and issues; Section 3 raises the challenges in sustainability capacity development for professional accountants; Section 4 concludes the review.

II Methods

In this study, we answer the research questions by reviewing the literature provided by accounting professional bodies at the international and national levels. A literature review is a valuable method for evaluating theories and evidence in a specific field and assessing the validity and accuracy of competing theories (Snyder, 2019). We selected this methodology owing to the rapid changes in the business sector, particularly in accounting, where there remain fragmented issues related to the education of accounting professionals. Additionally, we explored the changes in knowledge production in a field with interdisciplinary characteristics of sustainability. In the context of education for accounting professionals on sustainability, it is increasingly challenging to stay at the forefront of research and gather and assess comprehensive evidence nationally and internationally. Therefore, using literature reviews as a method is fundamental in this field. Literature reviews help to identify research gaps, develop additional research hypotheses and questions, and enhance research quality (Snyder, 2019). In this study, we adopted an integrative literature review, which is useful when the review aims not to cover all previously published articles systematically but to combine perspectives and derive a new theoretical model

(Snyder, 2019). This study identifies the challenges in establishing a foundation for developing a theoretical model related to accounting professionals and their education.

IFAC's report, 'Educating Accountants for a Sustainable Future: A Literature Review of Competencies, Educational Strategies, and Challenges for Sustainability Reporting and Assurance', was used as the international reference for research materials. This report reviews literature from academia, professional accounting organisations, and audit firms over the past five years regarding the education of professional accountants, presents the most relevant competencies for sustainability reporting and assurance, and discusses the challenges in developing their education.

Literature published by professional accounting organisations in Japan (JICPA, 2022, 2023) and Singapore (ISCA et al., 2022) were included for comparison at the country level. These organisations are active in the Asian region and are involved in developing the accounting profession's competencies related to sustainability work. The goal is to examine and compare these different sources of literature. An effective literature review, such as the one mentioned, will help advance knowledge in the field and create a foundation for the development of necessary theories (Webster and Watson, 2002).

III Competencies and Education for Sustainability Reporting and Assurance

1. The contribution of professional accountants to sustainability

When determining the skills needed for professional accountants to offer sustainability reporting and assurance services, it is essential to examine the role of professional accountants in sustainability within the context of sustainability accounting and reporting. The discussion tends to focus on the benefits of the reports to investors and companies rather than on the accountant's contribution to sustainability. The reports must have support and be used by the most critical users, including investors and companies. The document from the Japanese Institute of Certified Public Accountants (JICPA, 2023) focuses on emphasising the disclosure of sustainability impacts on corporate finances, accounting reporting, and assurance. It

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considers understanding the concerns of stakeholders, such as investors, customers, employees, local communities, and governments, important in evaluating the impact of sustainability-related risks and opportunities on corporate value. There has been limited discussion of corporate accountability, double materiality, and social responsibility for the social and environmental impacts caused by companies in the context of sustainability accounting and reporting. Moreover, although there are descriptions of professional ethics and independence, there is a lack of emphasis on ethical thinking and equity in addressing sustainability issues. In other words, the importance of engaging with stakeholders other than investors and considering their diverse information needs has been partly ignored. This may be due to the assumption that investors are the primary target audience for sustainability accounting reports. The list of stakeholders in the document mainly focuses on professional accounting organisations, companies, and investors. The document primarily discusses the technical aspects of the accounting profession's competence to meet the information requirements of investors, but it lacks broader perspectives on working with a wider range of stakeholders. Thus, it does not provide a comprehensive view of the competencies required for the accounting profession.

The Institute of Singapore Chartered Accountants (ISCA) published a document on sustainability-related practices and competencies of professional accountants in 2022, emphasising the need for professional accountants to possess additional competencies, including professional and business ethics. However, the document does not extensively cover wider ethics related to sustainability and the complexity of ethical choices between single and double materiality methods that are acceptable in practice within the country. It highlights the importance of establishing a structure for sustainability governance and appointing individuals with titles such as Chief Sustainability Officer (CSO), Chief Impact Officer, or Head of Environmental, Social, and Governance (ESG) within companies to ensure accountability for sustainability. The document also suggests that professional accountants can actively contribute to measuring sustainability indicators and translating them into financial impacts to promote sustainable business development and accountability for the environmental impact of corporate activities.

Conversely, the ISCA et al. (2022) document emphasises engagement with stakeholders both inside and outside the company as part of corporate responsibility, in addition to engagement with shareholders and stresses the need for the active involvement of CSOs and Chief Financial Officers (CFOs) in stakeholder communication. In addition, the document emphasises the pressure on investors from other stakeholders to incorporate sustainability into corporate strategy. This suggests that investors and non-investor stakeholders must understand the context of value maximisation.

The IFAC (2024) has examined the competence and ethics of professional accountants performing sustainability-related work at an international level through IFAC and the International Panel on Accountancy Education. However, the IFAC (2024) does not provide an original and explicit explanation of the ethics required in the profession. Lozano et al. (2017) indicated that justice, responsibility, and ethics are included among the 'Education for Sustainable Development Competencies'. However, the authors did not address what justice, responsibility, and ethics are expected of professional accountants. Little is mentioned regarding improved the quality of social and environmental accountability generated from corporate activities.

This document introduces educational strategies to develop critical thinking skills by Sharma (2013) and Sharma and Stewart (2022). The strategies include essay writing on ethical and sustainability issues, critiquing environmental and social issue literature, and analysing companies' responses to social pressures. However, the IFAC (2024) does not indicate whether these methods can be integrated into educational programmes to promote ethics among professional accountants. It is important to understand the integration of educational methods to promote ethics, as different educational methods have limitations in supporting the acquisition of learning levels. While this issue may be technical, recommendations on the preferred methods to acquire certain learning levels to promote ethics can create levelled methods in teaching across jurisdictions.

2. Competencies

The competencies needed by professional accountants to offer sustainability

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disclosure, reporting, and assurance services encompass both current and new skills (IFAC, 2024). According to the IFAC (2024), stakeholders have identified five key competencies, namely systems thinking, interpersonal competence, critical thinking and problem-solving, adaptability and flexibility, and technical competence, as most relevant to sustainability reporting and assurance.

Systems thinking involves understanding the various effects of sustainability indicators, such as greenhouse gas emissions, on financial statements, recognising the interconnectedness of different topics, and proposing new solutions to manage the risks associated with these indicators. This capacity can also be seen as the ability to gain a comprehensive understanding of the social and economic impacts of various sustainability issues based on integrated knowledge. In a broader sense, systems thinking involves analysing complex systems and sustainability challenges across environmental, social, and economic domains from local to global scales. This includes understanding chain effects, inertia, feedback loops, and other system dynamics and analysing the impact of action plans and interventions on complex systems and problems. Additionally, this ability will aid in analysing complex systems using different measurement units.

Interpersonal competence refers to the ability to communicate across different groups and disciplines to understand the factors that contribute to sustainability indicators (Carvalho and Almeida, 2022; IFAC, 2024; JICPA, 2022; Lozano et al., 2017; Redman and Wiek, 2021). This includes engaging in focused and constructive dialogue with management, directors, and investors regarding crucial sustainability trends and their impacts on industries and companies (JICPA, 2022). In a broader sense, interpersonal competence involves successfully collaborating in interdisciplinary and professional teams, engaging diverse stakeholders to drive sustainability change (Redman and Wiek, 2021), and achieving sustainability goals. This can also be seen as the ability to motivate, enable, and facilitate cooperation (Wiek et al., 2021).

Critical thinking and problem-solving skills involve the ability to assess non-financial data and associated risks and translate them into financial statement data (IFAC, 2024; Lozano et al., 2017; Rieckmann, 2018; Sharma and Stewart, 2022; Tran and Herzig, 2023). Rieckmann (2018) emphasised the importance of this critical

thinking and problem-solving capacity in sustainable development education. Furthermore, Gray (2019) highlighted the challenges associated with time and space in accounting education devoted to critical thinking and problem-solving skills, which were often referred to as sustainability competencies. Technical competence is the ability to analyse non-financial data and large datasets (AICPA, 2022; Carvalho and Almeida, 2022; Deloitte, 2022; IFAC, 2024).

In addition to the five competencies stated by the IFAC (2024), Redman and Wiek (2021) highlighted two more competencies: strategic thinking and implementation. Strategic thinking capacity involves developing and testing feasible strategies, interventions, transitions, and transformations for sustainability and includes understanding the fundamental framework of the relationships among sustainability, corporate management, and corporate value (IFAC, 2024; JICPA, 2022). Conversely, implementation capacity refers to effectively and efficiently translating sustainability strategies into action, involving implementation, adaptation, transfer, and expansion (Redman and Wiek, 2021), and requires knowledge of sustainability-related disclosure requirements, regulations, standards, and the objectives and basic framework of assurance work (IFAC, 2024; JICPA, 2022).

The seven competencies described above have been examined based on literature from the IFAC (2024) and Redman and Wiek (2021). The nature of these competencies may vary based on the nature of the work and the level of responsibility. Therefore, it is possible to organise and present the competencies by job (ISCA et al., 2022). The ISCA et al. (2022) have outlined a set of competencies required for each job, assuming that accounting professionals would be engaged in seven types of work in three areas: ‘corporate’ (related to the job of senior finance officers, finance managers, and internal auditors), ‘assurance and tax services’, and ‘new work’ (related to the job of senior finance and sustainability officers and ESG specialists). The ISCA et al. (2022) suggested that competencies in assurance work include those related to accounting and assurance practice standards. Additionally, the authors indicated that the additional competencies required include understanding key climate-related policy concepts and the pledges of governments and leading companies towards carbon accounting and carbon markets. Furthermore, they explained that

the competencies for senior finance and sustainability officers, as well as ESG professionals, include those related to business partnering on sustainability, such as sustainability reporting, target setting, integration of sustainability into corporate strategy, and stakeholder engagement. They also suggested that the capabilities include those related to business partners on sustainability, such as sustainability governance and internal controls, sustainability policy implementation, sustainability risk management, and stakeholder engagement (ISCA et al., 2022).

3. Education strategies and challenges

Three educational strategies have been identified to effectively develop sustainability competencies (IFAC, 2024). The first strategy involves integrating sustainability education with existing education rather than treating it as an add-on. The second strategy emphasises project-based, case-based, and experimental learning to enhance critical thinking skills instead of relying on technical memorisation (Evans, 2019; Lee and Perdana, 2023; Tran and Herzig, 2023). This approach immerses students in real-life scenarios and is the most practical and effective (Evans, 2019). The third strategy combines various forms of learning—curricular, extra-curricular, work experience, and internships—to create an integrated learning experience (Caldana et al., 2023). Additionally, competency-focused education and rapid training programmes, such as continuous professional development programmes that offer digital badges, micro-credentials, and stackable credentials, are essential (Deloitte, 2022; Fenlon and Fitzgerald, 2021).

According to the IFAC (2024), sustainability reporting and assurance education face three main challenges. First, there are resource constraints due to a shortage of qualified lecturers, lack of textbooks, and the core curriculum being at full capacity to cover qualifications. Additionally, there is a lack of framework specifying the required type of training (Al-Hazaima et al., 2022). The second challenge relates to the recognition of qualifications and standard conditions with restrictions on the curriculum. When sustainability education is not well integrated into qualification criteria, students may perceive it as non-specialised and irrelevant (Wong et al., 2021). The third challenge involves the lack of consensus on the scope,

definition, and implementation of sustainability accounting reporting, leading to widespread uncertainty regarding the role of accounting in sustainability (Al-Hazaima et al., 2022; Eugénio et al., 2022; Gray, 2019; Wong et al., 2021). This lack of consensus hinders the advancements of sustainability-related education (IFAC, 2024).

IV Discussion

The primary challenge in developing sustainability skills of professional accountants, as identified by the IFAC (2024), is the absence of consensus on the extent, definition, and application of sustainability accounting and the general uncertainty about accounting's contribution to sustainability (Gray, 2019). In addition to grasping the role of accounting in sustainability, the IFAC (2024) also emphasises the importance of understanding the link between sustainability and accounting, as indicated by the following:

'This conundrum is reflected at its most basic in the contrasting questions: do we take accounting, management and corporations and ask, "how can they contribute to sustainability"? Or do we take society and ecology as our starting point and ask, "what must be done to approach sustainability?" The first takes corporations and accounting as essential to our discussion; the second allows for the possibility that accounting and corporations may be the problem and any answer may decide that we need no accounting or corporations— at least as we currently know them (Milne et al., 2009; Russell et al., 2017).' (Gray, 2019, 44).

The role of accounting in sustainability is not clearly defined; however, one potential solution is environmental accounting education, which is closely related to sustainability accounting. Modern accounting education may inadvertently promote intellectual and ethical erosion, and environmental accounting education could help to address this issue (Gray et al., 2014). Including environmental accounting education in sustainability programmes could enhance the ethical aspects of professional accountants. The IFAC (2024) document lacks a clear definition of the scope of

sustainability reporting, which may lead to a lack of understanding of the significance of sustainability accounting, especially when the focus is mainly on capital market participants as the primary stakeholders. Whether sustainability accounting inherently serves to sustain and mitigate corporate survival risks and investment risks for investors related to corporate sustainability issues remains debatable. According to the ISAC et al. (2022), if human rights and communication with stakeholders other than investors, particularly those affected by the social and environmental impacts of corporate activities, are considered, it will be crucial to enhance ethics education. Furthermore, if both the scope of stakeholders and the content of explanations to them are structured based on ethical aspects, including consideration of vulnerable groups and the global environment, the educational objectives will require revisions.

The IFAC (2024) argued that as the role of professional accountants expands, aspiring and existing professional accountants require specific education, learning, and capacity building to meet stakeholder demands, as indicated by the ISCA et al. (2022), and the competencies they are currently considered to possess. This will help in setting the goals of education programmes to identify and list the competencies currently considered to be in place and those that will be additionally required in the future. It will also be necessary to effectively compare the competencies required by the current qualification examination system with those additionally required, as in the ISAC et al. (2022), to demonstrate to stakeholders. The five competencies the IFAC (2024) indicated should be limited to those that can be measured using the current Certified Public Accountant (CPA) examinations. In addition to the changes made to the current qualification examination system, capacity building in education and training programmes provided by professional accountancy bodies after successful examination and the inclusion of sustainability education in accounting education in high schools and universities must also be considered. The JICPA has released two important documents related to sustainability education: the ‘JICPA Sustainability Education Project Discussion Paper: Integrating Sustainability into Professional Accountants’ Competency’ (JICPA, 2022) and the ‘JICPA Sustainability Education Special Committee Report: Sustainability Capacity-Building Policy and Actions’

(JICPA, 2023). These publications reflect the organisation's dedication to enhancing professionals' competencies in sustainability.

The educational programme focuses on developing an ethical understanding of sustainability and recognising the internal contradictions within sustainable development. The main challenge is determining how educational programmes can effectively address the ethical issues related to environmental development. As highlighted by the UNHRC (2011), it is important to consider the perspective of the affected parties rather than solely focusing on the company's viewpoint. This approach is crucial in both corporate social responsibility and sustainability education. Understanding the double materiality approach adopted in EU legislation is essential.

In terms of methods for teaching sustainability-related education, the IFAC (2024) indicated that experiential, intensive, and non-classroom training approaches should be incorporated. However, resource constraints may limit the allocation of training resources, the measurement of success in achieving the intended learning levels, and cost-effectiveness. The IFAC (2024) suggested that to overcome resource constraints, a uniform training programme should be provided under the authority of a prescribed international body, along with a worldwide digitally based system of accreditation. They also proposed using digital badges, micro-credentials, and stackable credentials for sustainability-related education, which could significantly contribute to its widespread development.

Micro-credentials can divide learning into detailed units and authenticate each unit, while stackable credentials combine various learning modules and are integrated into a digital badge certifying the learner's specific competencies and skills. This approach can allow for the accreditation of sustainability education for professional accountants belonging to various accounting professional bodies across countries at a uniform level (IFAC, 2024). A similar mechanism is partially in place in the JICPA's Continuing Professional Development Scheme, which can potentially address the resource constraints that challenge sustainability education.

However, concerns have been raised regarding centralised personal data management and information leakage in this digital education management method (Kerver and Riksen, 2016; Pirkkalainen et al., 2023). Additionally, how to measure the

impact of different methods remains to be determined.

Compared with the IFAC (2024), which focused on sustainability reporting and assurance services, the ISCA et al. (2022) presented a competency map for various tasks, providing helpful information in line with the expansion and diversification of the professional accountant's field of activities. Different competencies are required for different jobs, such as in the work of information disclosure companies (CFOs, financial managers, and internal auditors), assurance provision and tax services, and new sustainability-related roles (Chief Financial and Sustainability Officers and ESG specialists) (ISCA et al., 2022). The importance of capacity development in various existing or new tasks (ISCA et al., 2022) and the reference to tax services is particularly noteworthy, especially in view of their potential involvement in sustainability.

There is currently a lack of consensus on the scope and content of sustainability accounting, leading to increased uncertainty about the role of accounting in sustainability. This uncertainty could potentially impact discussions regarding building sustainability capacity. The accounting profession and professional accountancy bodies should carefully assess the role of accounting in achieving genuine sustainability. They can focus on their capacity development and create educational programmes related to sustainability for professional accountants. This study significantly contributes to the future development of sustainability-related education for professional accountants.

One limitation of this study is the use of data from recent literature, which is still evolving as the related discourses may change over time. Therefore, future research should broadly compare and explore the success of these proposed changes in professional accountants' education by accountancy bodies as related to the quality of sustainability reporting or the quality of sustainability accountability.

V Conclusion

The increasing focus on sustainability reporting presented new opportunities for professional accountants to offer sustainability disclosure, reporting, and

assurance services. However, there is currently a lack of an established framework for sustainability-related education for professional accountants, despite discussions by accounting bodies such as the IFAC, ISAC, and JICPA. Section 2 highlighted new competencies required for sustainability-related work, such as systems thinking, interpersonal skills, critical thinking, adaptability, technical competence, and strategic thinking and emphasised the need to integrate sustainability education with existing accounting education, enhance critical thinking skills, and utilise digital educational methods.

Section 3 emphasised the need for a better understanding of sustainability, the relationship between sustainability and accounting, the benefits of environmental accounting education, and ethical considerations and stressed the necessity for additional competencies, learning methods, digital education management methods, and sector-specific competence maps for sustainability education.

The study found that international and national accounting bodies call for professional accountants to contribute to sustainability and sustainability reporting; however, there is little emphasis on companies' accountability for their social and environmental impacts. Instead, the focus was mainly on companies' technical ability to meet investors' demands for sustainability-related disclosure. Additionally, there is a lack of consensus on the scope, definition, and implementation of sustainability accounting reporting, leading to uncertainty regarding the role of sustainability accounting and professional accountants.

In conclusion, this study suggested the need for a deeper understanding of the relationship between sustainability and accounting in the education of professional accountants. Education methods or teaching approaches can help to determine the achievement of intended learning levels; however, how to accurately measure success remains to be determined. These findings contribute to the development of sustainability-related education for professional accountants. Future research should include a survey of attitudes towards sustainability-related competencies and education among future and current accounting professionals.

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