Rethinking accounting education for a sustainable future: charting a course for sustainable development goals 2030

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Abstract

Purpose – This paper aims to seek accounting graduates' perspectives on the demand for accounting in their workplaces, on the gaps in accounting education (AE), and on the future of the accounting profession, inspired by the new definition of accounting proposed by Carnegie et al. (2021, 2022, 2023a), to adopt a strong focus on sustainable development goals (SDGs) in AE to inculcate tertiary students with the skills that lead them to approach and apply accounting as a multidimensional technical, social and moral (TSM) practice.

Design/methodology/approach – The online qualitative survey was distributed to 100 randomly selected New Zealand accounting graduates in order to gather insights from their workplaces. All responses from the 30 graduates who completed the questionnaire underwent qualitative analysis using Leximancer software, which automatically identifies high-level concepts and insights and offers interactive visualizations without bias.

Findings – The graduates’ experiences underscore the ongoing significance of technical skills in the New Zealand workplace. They emphasized the lack of non-technical skills training, stressed the necessity of diverse business knowledge and highlighted the importance of automation and digital skills.

Practical implications – The implications for transforming AE involve adopting an activist approach to integrate a TSM perspective into teaching and learning and being open to an interdisciplinary approach to expose tertiary students to the impact of accounting on sustainable development, including collaboration with professional bodies for real-world experiences.

Originality/value – The importance of engaging with SDG-related narratives is stressed to stimulate further discussion, debate and research aimed at identifying practical solutions for AE as a facilitator for SDGs in realizing accounting as a TSM practice.

Keywords Accounting education, Moral, SDGs, Skills, Social, Technical, Tertiary

Paper type Research paper

1. Introduction

The action plan developed by the United Nations, Transforming Our World: the 2030 Agenda for Sustainable Development (United Nations, 2015), has adopted 17 sustainable development goals (SDGs), which have rapidly gained prominence among the global
communities beyond its 193 member states. The critical milestones for achieving SDGs for a tertiary institution [1] are to provide the knowledge and solutions that underpin the implementation of the SDGs, to create (current and future) implementers of the SDGs, to provide intersectoral leadership in the undertaking and to incorporate the SDG principles through governance, management and culture. The first two milestones are the key focus of this paper. In addition, given SDGs rely on clear accountability and value creation, the accounting profession is in a position to guide decisions on the allocation of capital, accounting for negative impacts on the environment and human development (Carnegie et al., 2023b; Caruana and Dabbicco, 2022). Therefore, tertiary institutions can no longer ignore the overwhelming support and commitment of international communities towards the achievement of the SDGs (Salmi, 2020; Ferguson and Roofe, 2020).

Accounting scholars are urged to re-invigorate the contribution of accounting to sustainable development debates (e.g. Bebbington and Unerman, 2018, 2020), as accounting education (AE) impacts how accounting is practiced (Sidaway et al., 2022). While a vast body of research pushed for reforms, transformations and revolution of AE long before the Covid-19 pandemic struck (Smart, 2021), the need for AE to change and accommodate the SDGs is now emerging in the literature. The SDGs should underpin accounting policies, practices, teaching and research globally (Bebbington et al., 2017; Hopper, 2019). The SDGs deadline is less than a decade away but is yet to receive the necessary focus from accounting scholars and tertiary institutions (Bebbington and Unerman, 2018, 2020; Hopper, 2019). In addressing the UNESCO (2015) call to examine the gap between learning and the world of work, this paper primarily aims to gauge the perspectives of accounting graduates on the demand in their workplaces, the gaps in AE and the future of the accounting profession.

A central role of tertiary institutions is to empower graduates by providing them with knowledge, skills and attitudes (McCowan, 2019), and for accounting practice to shape a better world for the future generations, it needs to incorporate technical, social and moral (TSM) dimensions as proposed by Carnegie et al. (2021a, 2021b, 2022, 2023a, 2023b). Carnegie et al. (2021a, p. 69), Carnegie et al. (2021b, 2022, p. 617) define accounting as a TSM practice which “concerned with the sustainable utilisation of resources and proper accountability to stakeholders to enable the flourishing of organisations, people and nature”. The teaching of accounting as a TSM practice allows students to cultivate abilities beyond mere technical proficiency, emphasizing not only knowledge and the application of technical rules and standards but also the development of essential soft skills, including ethical considerations, with the prospect of truly making a difference (Carnegie et al., 2023b). As such, highlighting the evolving role of chartered accountants (CAs) in AE can inspire prospective students to make a meaningful impact in the world through their future profession (Carnegie et al., 2023b). Scholars highlight the significance of critical thinking and judgement in accounting when addressing questions such as “What is the role of accounting?” and “What should accounting do or avoid doing?” (Carnegie et al., 2021a, 2021b; Sidaway et al., 2022; Tsahuridu and Carnegie, 2018). Therefore, the cultivation of soft skills and ethical competencies enables students to contemplate the societal context (Hopwood, 1983; Tsahuridu and Carnegie, 2018) and assess the impact of their accounting decisions on society. As a result, AE, which traditionally emphasizes technical skills, should be broadened to include soft and ethical/moral dimensions. This expansion will contribute to bridging the gap between AE and workplace requirements (Carnegie et al., 2023b; Sidaway et al., 2022).

Limited recent studies provide evidence of the accounting knowledge and skills demanded in the workplace, identifying gaps that would enable further SDG achievement as blueprinted in the UNESCO Education Framework for 2030’s SDG 4 (e.g. De Villiers, 2021). Recent discussions on the skills required in the workplace did not consider the SDG context
Rethinking accounting education

(eg. Asonitou and Hassall, 2019; Edeigba, 2022; O’Shea et al., 2022; Obioha and Sotshangane, 2022). This paper argues that the new accounting definition as a TSM practice provides impetus for AE Turn, an AE transformation towards a provocative/activist approach focused on SDGs or SDGs-focussed AE to produce accounting graduates with TSM skills. Other scholars have used similar terms, such as “revolutionizing AE” (Sangster, 2022) or “rewilding AE” (eg. Powell and McGuigan, 2022); however, those scholars were primarily driven by the need to navigate the Covid-19 pandemic (Sidaway et al., 2022).

The paper contributes to the literature in two ways. First, the graduates’ experiences offer additional evidence that technical skills continue to be crucial in the New Zealand workplace. They observed that both AE and accounting professional bodies adhere to traditional approaches. Given that graduates’ perspectives are influenced by their previous experience of the AE system, it suggests that tertiary institutions may not be adapting swiftly to the UNESCO Education Framework and SDG movement. The graduates also emphasized the deficiency in non-technical skills training, indicating a failure to provide not only the technical but also the social and moral (TSM) skills. This supports ongoing debate among scholars and UNESCO, urging a shift in AE to encompass more than just technical skills. The proposed constructivist approach aims to enhance understanding of accounting as a TSM practice and explore its potential role in sustainable development solutions across various business sectors and functionalities. Second, within the New Zealand context, graduates underscored the importance of acquiring knowledge about diverse businesses across various sectors. This emphasis revealed a bias in AE towards large companies, neglecting the significant presence of small and medium-sized businesses that dominate the country in terms of both composition and employment opportunities. In addition, the graduates stressed the importance of automation and digital skills, urging tertiary institutions and accounting professional bodies to align with global trends in accordance with UNESCO’s call for equity access.

The remainder of the paper is structured as follows. The next section critically reviews the UNESCO Education Framework and scholarly literature to identify support for the AE Turn for the SDGs. Section 3 provides a description of New Zealand business and tertiary education environments, followed by the research method in Section 4. Section 5 describes the results and findings from the qualitative survey of accounting graduates about workplace demand and their perception of the future of AE and the accounting profession. Section 6 concludes the paper.

2. Literature review – UNESCO education framework and scholarly debates

The UNESCO Education Framework [2] is the United Nations’ new educational vision, adopted in response to significant concerns about achieving education for all. At an individual level, the Framework’s vision is to transform lives through education, especially in realizing SDG 4, “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” and its corresponding targets (UNESCO, 2015). As such, it is not surprising that the UNESCO’s commitment to improving access to tertiary education is reflected in a vision to enhance science, technology and innovation by harnessing information and communication technologies. This vision ensures that adults achieve a level of proficiency in relevant and recognized functional literacy and numeracy and acquire life skills (UNESCO, 2015). While these statements should be considered alongside other UNESCO Education Framework content, technology use and related technical skills are emphasized as critical to achieving SDG 4. These skills enable an extension of its functionality to social and moral aspects by allowing access to the vulnerable and out-of-school population (UNESCO, 2015). It can be inferred that AE Turn might provide the opportunity to achieve the SDGs if it places a similar emphasis on these skills.
In terms of knowledge and skills, SDG 4 states that:

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and culture’s contribution to sustainable development (UN, 2015).

This statement strongly supports the need for AE to be more comprehensive by enhancing knowledge and skills in social and moral aspects. If achieved, this new vision of education can transform the lives of individuals, communities and societies, leaving no one behind and accelerating progress towards achieving all SDGs (UNESCO, 2015).

The defining feature of the SDG4-Education 2030 agenda is its holistic and humanistic vision, which goes beyond a utilitarian approach to education and integrates the multiple dimensions of human existence vital for achieving social cohesion and justice (UNESCO, 2015). This feature is synonymous with the aspiration of Carnegie et al. (2021a, 2021b, 2022, 2023a, 2023b). UNESCO Education Framework asserts that developing high-level cognitive and non-cognitive/transferable skills, such as problem-solving, critical thinking, creativity, teamwork, communication skills and conflict resolution, can be used across various occupational fields and goes beyond mastering work-specific skills (UNESCO, 2015).

According to UNESCO Education Framework, numeracy is a crucial skill: analysing numbers, accounts, measurements, ratios and quantities is essential to all aspects of life (UNESCO, 2015). The technical skills would not be difficult to achieve due to the natural dominance of technical skills in accounting, such as in Financial and Management Accounting courses. The demand for information technology (IT)/technological skills has been softly embedded within accounting systems and accounting information systems courses. Courses such as digital analytics have also been offered within an accounting program. In practice, mounting evidence suggests a lack of expertise in digitalization within the field, hindering accounting graduates and employees from effectively managing relevant processes in workplaces where routine entry-level activities are continuously being digitized (Pargmann, et al., 2023). Therefore, accounting graduates must be prepared for the competitive landscape of a global marketplace by transitioning from technicians to knowledge workers, ready to engage in digitalized work (Herbert et al., 2021; Howieson, 2003). The competencies of accounting graduates reflect the need for their AE to integrate workplace skill development into curricula and pedagogy (Herbert et al., 2021; Jameson et al., 2012).

The institutionalization of the SDG agenda into teaching and research is critical to changing the behaviour and attitudes of students as future leaders (Abad-Segura and Gonzalez-Zamar, 2021; Adams, 2018; Annan-Diab and Molinari, 2017; Avelar et al., 2019; Bebington and Unerman, 2018; Caruana and Dabbicco, 2022; Cho et al., 2020; Powell and McGuigan, 2022; Tweedie and Hazelton, 2019). In general, women tend to express greater environmental concern than men and actively participate in pro-environmental activities. The age group 30–39 exhibits the highest levels of environmental concern compared to both younger and older age groups (Casey and Scott, 2006; Shephard et al., 2009; Theron et al., 2016; Zelezny et al., 2000). However, Theron et al. (2016) found that the majority of students across age groups were aware and concerned about the choices they make now and their potential impact on the future. Regardless, graduates must be empowered to advocate for and adopt sustainable practices in their chosen careers (Shephard et al., 2009). Future accountants should be equipped with the skills to face climate change challenges (Brands and Holtzblatt, 2022). Without ecological consciousness and a holistic mindset, their full potential may be constrained (Carnegie et al., 2023b; Powell and McGuigan, 2022). Hence, the
Integration of TSM dimensions in AE enhances intellectual and professional competency skills that are highly valued by employers (Carnegie et al., 2021a, 2021b; Sidaway et al., 2022; Tsahuridu and Carnegie, 2018). New pedagogical practices should be considered to sensitize graduates to their role in society and inspire them to truly make a difference in the world by becoming professional accountants (Carnegie et al., 2023b; Powell and McGuigan, 2022; Ribeiro et al., 2020; Shephard et al., 2009). Previous systematic reviews of the accounting literature have examined the roles of the profession in relation to the SDGs; however, these roles were not linked to tertiary AE (e.g. Mio et al., 2020; Pizzi et al., 2019; Sytnik et al., 2021). If tertiary education is transformed and intervened successfully, this will enable national development of human capital and the achievement of various SDGs. The goals include SDGs 4 (education), 5 (gender equality), 8 (employment and decent work), 10 (reduced inequalities), 12 (responsible consumption and production) and 17 (partnership) (Avelar et al., 2019; Bebbington and Unerman, 2018; Moratis and Melissen, 2022; Sachs et al., 2019). In addition, IFAC (2016) included additional propositions for SDG 13 (climate change) and 16 (peace and justice), which could be reflected in the education sector. Other SDGs were also ranked by Times Higher Education, which include SDG 3 (good health and well-being), SDG 9 (industry, innovation and infrastructure), SDG 11 (sustainable cities and communities), SDG 12 (responsible consumption and production) and SDG 16 (peace, justice and strong institution) (THE, 2023).

Indeed, accounting pedagogy needs to be positioned more broadly within its socio-economic context (Carnegie et al., 2023b; Chabrak and Craig, 2013; Hopwood et al., 2005). Hopwood et al. (2005) proposed mapping ideas to represent the nature of the changes necessary in socio-economic structure and human-environment concerns to achieve sustainable development, progressing from the status quo to reform to transformation. According to the authors, the status quo is the stage where the need for change is recognized but is not considered to involve “insuperable problems”. The reform stage is characterized by the acknowledgment of escalating concerns, criticism of business and government policies, but a belief that fundamental changes may not be necessary. The transformation stage is where fundamental changes are envisioned. We follow the mapping ideas of Hopwood et al. (2005) to provide a generalized conceptual framework that shows a continuum from the status quo of teaching and learning technical skills to a transformation provocative/activist approach to teaching TSM skills, to produce accounting graduates with TSM skills, the AE Turn (see Figure 1[3]).

We acknowledge the bi-directional nature of accounting practice and AE (see Sidaway et al., 2022). Nonetheless, AE must move from the status quo to what scholars propose for a more creative, provocative and activist approach to teaching and learning (Jack, 2019; Lewis

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### Figure 1

Teaching and learning paradigm for SDGs – a conceptual framework for accounting education turn from status quo to provocative/activist approach

<table>
<thead>
<tr>
<th>Accounting Education</th>
<th>Status Quo</th>
<th>Reform</th>
<th>Transformation (Provocative/Activist)</th>
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<tbody>
<tr>
<td>Technical Skill</td>
<td>Technical, Social, Moral Skills</td>
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Source: Figure by authors
The primary aim is to generate knowledge and skills derived from a greater focus on sustainability leadership, ethical dilemmas in decision-making and social purpose to effectively contribute to the SDG agenda and to drive the aspiration of accounting as a TSM practice. Employers now seek graduates with advanced soft skills (De Villiers, 2010) and environmentally conscious (Powell and McGuigan, 2022). Indeed, IFAC (2016) elaborated that accountants have the power to influence and significantly shape management decision-making and solutions to align with SDGs, which in turn affects stakeholder decision-making.

The underlying assumption of the status quo and the provocation/activist approach is predicated on how a tertiary institution views the implication of sustainability on the function and existence of accounting. Gray (2019) writes:

 Crudely, if weak sustainability holds, then our existing management and accounting systems may need tweaking and adjustment, but they can be considered essentially sound. If strong sustainability holds, then there is a perfect chance that humanity might only manage to approach anything that looks like a sustainable future through a drastic uprooting and fundamental surgery of our taken-for-granted systems. Under strong sustainability, it is not at all obvious that anything we currently recognize as accounting, business, growth, profit or finance might be able to exist.

Gray (2019) then suggests that educators consider many approaches that challenge how they teach rather than what they teach.

Similarly, the status quo in AE represents a long-standing view that a change in AE may be necessary for the development of sustainability. Still, the fundamental design and delivery of AE persist. Topics such as sustainability accounting, environmental management accounting, analytic and digital skills, business ethics and social responsibility are treated as “saddle bags” taught as additional topics and, if offered separately, often as electives (Gray, 2019; Cho et al., 2020; Pippin et al., 2021). Moreover, the conventional architecture of tertiary education discourages an interdisciplinary and transdisciplinary approach and resists change, posing ongoing challenges for collective solutions (Adams, 2018; Cho et al., 2020; Gray, 2019; Powell and McGuigan, 2022).

Since the SDGs are fundamentally oriented towards society-level value creation, a provocative and activist teaching and learning paradigm argues for critical reflexivity of the current accounting practices and approaches to realizing the SDGs. Educators then need to unlearn their monologic status quo approach and learn a new dialogic approach (Gray and Collison, 2002; Raja-Ahmad et al., 2022, 2023; Shephard et al., 2009; Sikka et al., 2007; Wong et al., 2021). This approach encourages accounting students to think critically about the impact of business on society, creatively produce solutions and be engaged citizens and responsible future leaders. This approach could be disruptive to the educators, requiring them to change their current approach to facilitate and broaden debates that challenge the worldview, even their worldview (Gray and Collison, 2002; Powell and McGuigan, 2022).

This paradigm reflects the aspiration of Carnegie et al. (2021a, 2021b, 2022, 2023a, 2023b) for new accounting to move beyond the technical practice of “How do we do accounting?” to embrace social (What does accounting do? What are the impacts on organizations, people and nature) and moral practices (What should accounting do? or What should accounting not do?). Scholars have long called for tertiary institutions to move beyond a content-based education focus to develop both TSM competency (e.g. Thompson, 2010), and this call has increasingly grown in volume recently. Thus, the redefinition of accounting developed by Carnegie et al. has revived this ideology. The new accounting definition holds significant consequences for the training of aspiring CAs and, ultimately, the overall appeal of the profession (Carnegie et al., 2023b). In addition, tertiary students as future leaders must be
aware of dealing with contentious issues hindering SDG achievements, such as corruption, corporate scandals, economic recession, global warming, poor governance and inadequate accounting and auditing (Avelar et al., 2019; Carnegie et al., 2023b; Sytnik et al., 2021). They are further expected to challenge the worldview of power, privilege, hegemony and hierarchical structures (Slocum et al., 2019), which means that they should embrace conflicting views and not fixate on status quo propositions (Chankseliani and McCowan, 2021). Powell and McGuigan (2022) suggest a move from a human-centric approach to a relational approach to connect AE to the broader socio-ecological context. Gray (2019) believes education is worthless if it cannot help an individual address conflicting and complex notions. By refocusing AE on TSM aspects, future responsible leaders may acquire and assimilate the knowledge and skills necessary to promote and act upon sustainable and ethical accounting practices for SDGs. Indeed, accounting offers much more than backward-looking information (Caruana and Dabbicco, 2022); therefore, the learning outcomes should also address the diversity of future needs and contribute to shaping well-rounded graduates.

The conviction to ensuring that graduates are prepared for future work underscores the vital role of the tertiary education system in contributing to a country’s development and the well-being of its population (O'Shea et al., 2022; Smyth, 2012). Therefore, the accounting profession must be flexible to industry changes; consequently, AE should respond by moving away from being compliance-driven and prescriptive in nature (Albrecht and Sack, 2000; Kotb et al., 2019; Watty, 2005; Webb and Chaffer, 2016). Further, the workplace demands graduates possess communication, interpersonal, leadership, strategic and critical thinking and client-focus skills [AICPA, 2021; CPA Australia and Chartered Accountants Australia and New Zealand (CAANZ), 2021; PWC, 2018], thus, a move to knowledge-based services. In the new millennium, there is a rapidly increasing demand for computing/information technology skills and competency, as well as a need for accounting graduates to possess both global and local business knowledge (see Asonitou and Hassall, 2019; Bui and Porter, 2010; De Villiers, 2021). In addition, there is a recent call for AE to emphasize social and moral acuity, aligning with the current demand for sustainability, equality and diversity in tertiary education (Carnegie et al., 2021a, 2021b, 2022, 2023a, 2023b; Kurucz et al., 2014). Previous studies have mainly surveyed accounting students (Asonitou and Hassall, 2019; Edeigba, 2022; Webb and Chaffer, 2016) and other stakeholders (Bui and Porter, 2010; Jackson, 2021; Sharma and Stewart, 2022). The students were uncertain of the expectations of their future employers but believed they had already developed the required technical skills and grades (Obioha and Sotshangane, 2022; O'Shea et al., 2022; Pippin et al., 2021).

The reflections of an alumni group are more effective because they are likely to represent real-world perspectives on the AE they received and the workplace demands (Wells et al., 2009). The graduates’ reflections could contribute a sense of reality to the debates on the AE Turn, emphasizing TSM skills. The findings of this current study could uncover whether the demand for technical skills still persists, especially in the New Zealand context.

3. New Zealand context
In New Zealand, tertiary education includes higher degree-level education, primarily offered at universities, and vocational degree-level education provided by Te Pūkenga, wānanga and some larger private training establishments (NZQA, 2023). There are eight universities in New Zealand that offer degree and postgraduate education (MOE, 2023). To become a CA or a Certified Practicing Accountant (CPA), an accounting graduate must complete a degree from an approved university, acquire three years of professional experience and fulfil the
qualifications set by either Chartered Accountants Australia and New Zealand (CAANZ) or CPA Australia (CGNZ, 2023).

Businesses in New Zealand expected that future employees and younger talent has the desire to work for purpose-driven companies, influencing them to address sustainability (SDN, 2023). However, tertiary AE in New Zealand has long been criticized for its inadequate design (Botes et al., 2014; Carr et al., 2006; De Lange et al., 2006; Jackling and De Lange, 2009; Khosa et al., 2023). The deficiency in skills necessary to maximize the potential of digital tools may be becoming more apparent, particularly among small businesses in New Zealand, which are facing skill shortages (B4B, 2021). Previous New Zealand studies found disparities in expectations between accounting educators and employers, leading to graduates not acquiring expected competencies (Bui and Porter, 2010; Wells et al., 2009). Surveys of New Zealand accounting students and graduates revealed a shift in their expectations of the AE, transitioning from an emphasis on technical skills such as professional standards (Carr et al., 2006) to a focus on real-life scenarios specific to New Zealand (Wells et al., 2009), and subsequently, to considerations of sustainable development (Botes et al., 2014; Sharma and Kelly, 2014; Sharma and Stewart, 2022). These expectations evolve to align with the contemporary needs and demands of the broader society, including those of their employers upon graduation.

The transition of AE to align with stakeholders’ expectations poses a challenge, especially when students’ prior preparation has primarily focused on technical, value-free accounting problems and procedures (Mathews, 2001). This emphasis on the technical dimension makes it challenging to cultivate other skills in the accounting curriculum, including moral reasoning ability (Eynon et al., 1996; Flynn and Buchan, 2016; Pippin et al., 2021; Powell and McGuigan, 2022). The rigid curriculum, which focuses on large companies, seems to be misaligned with the needs of New Zealand businesses, demographically profiled as small businesses. Together, small businesses account for 97% of all businesses (MBIE, 2023). Graduates are highly likely to serve small businesses as employees, accountants or auditors, as these businesses provide almost one-third of employment opportunities (MBIE, 2023).

The limited focus of tertiary AE on sustainability is anticipated, given its costliness for small businesses to implement and the challenges it poses for university teaching faculty to incorporate. Although Sharma and Kelly (2014) reported that New Zealand students supported sustainability knowledge, the sustainability courses offered lacked breadth and depth (Khosa et al., 2023; Botes et al., 2014). Contrary to the general consensus in the country that accountants do have a role to play in sustainability (Khosa et al., 2023; Sharma and Stewart, 2022), it is unclear how the teaching and learning of accounting in New Zealand could significantly support sustainability initiatives for businesses and society. Further, Carnegie et al. (2023b) argued that young talents may lack a full understanding of the profound impact of sustainability on business thinking and actions, potentially leaving them unaware of how to contribute to making a difference and ensuring sustainable and proper resource management.

In New Zealand, the professional accounting bodies CAANZ and CPA Australia responded by offering micro-credentials and professional development opportunities for their members, predominantly consisting of graduates from New Zealand universities (Sharma and Kelly, 2014). While effectively bridging the gap in AE, these initiatives indirectly suggested that the current tertiary AE in the country inherently fails to provide graduates with the broad-based skills necessary to fulfill their emerging roles in sustainability and achieve the SDGs. As Boyce et al. (2019) asserted, AE in Australia and New Zealand continues to be presented as a technical and vocationally focused endeavour, a viewpoint that Khosa et al. (2023) seemed a crisis. It remains to be examined whether this trend persists in New Zealand, particularly in light of the increasing focus on sustainability and the value of AE for SDGs, supporting a call for AE to adopt a new definition in shaping a better world inspired by the SDGs for “the sustainable
utilisation of resources and proper accountability to stakeholders” (Carnegie et al., 2023b; UNESCO, 2015).

4. Research method
We reached out to accounting graduates from a New Zealand university to gain insights into their workplace demands along with their opinions on the future of AE and the profession to gauge the gap in the AE. The graduates were identified based on their graduation status in the university’s internal portal system. The year 2009 was chosen as the cut-off to ensure that the graduates had at least 10 years of experience, allowing for a three-year period for job searching or settling into their first job.

Data collection through an online survey took place over a short period, from November 2022 to February 2023, using the Google Forms platform. Despite randomly reaching out to 100 graduates, only 30 responses were available for qualitative analysis. It was noted that, naturally, most of the graduates no longer used the email addresses they provided during their studies. Before the online survey, an explanatory email was sent, informing participants about the required ethics approval and their rights to consent. In adherence to ethical standards, graduates could decline participation or choose not to answer any question at any stage.

While participants were invited for an interview post distribution of the online survey, only one participant agreed. The authors decided to proceed with the analysis of the online survey data primarily to preserve participant anonymity, given the qualitative nature of the survey, which included both demographic and open-ended questions.

The open-ended questions were designed to be neutral, avoiding emphasis on any specific skills, to explore which skills naturally emerged from the responses. This approach aimed to determine whether the gap observed is primarily technical, social or moral in nature. The questions underwent review as part of the ethics application. It is important to note that while the sample was drawn from university accounting graduates, they may not necessarily represent all accounting graduates from all universities in New Zealand. The study’s limitation lies in the small number of respondents. However, the primary goal was to provide insights into a perspective that is not often explored, serving as a contextual addition to this paper.

Due to the low number of responses, quantifying the data was considered insufficient [5]. All responses were processed using Leximancer software 5.0 for qualitative analysis. Leximancer automatically analyses responses to identify high-level concepts and insights, providing interactive visualizations without bias (Leximancer, 2021). This tool is particularly beneficial for analysing qualitative data, such as open-ended questions, as it extracts concepts from words with similar meanings, mitigates researcher bias through automated text analysis and visualizes relationships between concepts and their frequency. The focus of the analysis is on the insights provided by the graduates rather than the demographic details, justified by the limited number of responses for meaningful connections. Nevertheless, a snapshot of the demographic details of the accounting graduates is presented in Figure 2.

The graduates identified as males 33%, females 64% and 3% did not indicate their gender. Their age range was between 25 and 50+ years. More female graduates were working in accounting and audit firms compared to male graduates; the latter were employed in local government, non-profit organizations, real estate and financial services (untabulated). Based on their responses, the number of years engaged in their current roles for males (females) was as low as six months (three months) to as high as 10 years (10 years). Overall working experience for male (female) graduates varied from two years to 25 [6] years (less than one year to 30 years) (see Figure 2).

The following open-ended questions were designed to explore participants’ perspectives on the necessary transformation of AE by both tertiary institutions and accounting professional bodies:
5. Results and findings: accounting graduates and workplace demand

5.1 Type of knowledge which should have been taught in accounting major/degree

Concepts in Leximancer are groupings of words that frequently appear together in the responses and are automatically learned from the text itself (Leximancer, 2021). Leximancer runs the learning process and generates a list of concepts found in the text. For instance, the

- Type of knowledge which should have been taught in accounting major/degree;
- Aspects of the accounting profession that would evolve and those that would remain unchanged over the next decade;
- The top three drastic transformations accounting professional bodies should undertake over the next decade;
- Aspects of the AE that would evolve and those that would remain unchanged over the next decade; and
- The top three drastic transformations universities/tertiary education providers should undertake over the next decade.

Figure 2. Accounting graduates’ demographic details

Source: Figure by authors

Figure 3. Type of knowledge – concept map and analyst synopsis

Source: Figure by authors
respondents’ answers regarding the type of knowledge that should be taught in their accounting degree, as illustrated in the concept cloud in Figure 3 below:

In Leximancer, the concept map displays the names of the main concepts occurring within the responses, with red colour indicating the most relevant concept. In Figure 3, accounting emerges as more relevant to the discussion on the knowledge that should be imparted in an accounting degree. This aligns with the validity of the study, as all graduates were prompted to reflect on the future of AE and the profession.

The analyst synopsis in Figure 3 reveals that there are 126 text blocks mentioning accounting. This measure indicates how closely the term accounting is associated with other terms in the graduates’ responses. The responses are strongly connected to the discussion of technical knowledge as the primary emphasis compared to non-technical knowledge. When examining the excerpts, Graduate #10 stated that:

I think my accounting degree provided a really good foundation of technical knowledge. My employers over the past 5 years have provided any additional training needed specific to my roles.

Similarly, Graduate #7 elaborated:

More practical, industry-relevant, sector-diverse application of accounting technical knowledge. For example, applying accounting standards to real business settings (e.g. financial reporting), [...] designing few useful accounting-related system/product modules to satisfy accounting and reporting needs.

However, Graduate #30 responded differently, “During my 3yrs of study, I had very less assessments related to work as a team, which we really need in real life”.

Non-technical skills and knowledge refer to the higher-order skills proposed as critical for the future development of the accounting profession and for the future for accounting as a TSM practice (e.g. Carnegie, et al., 2021a, 2021b, 2022, 2023a, 2023b; Sidaway et al., 2022). However, there was no such emphasis of these skills and knowledge. Overall, the graduates revealed that the dominant skill demanded at their workplace was technical competence.

In scrutinising what technical knowledge was discussed, we used the likelihood measure in Leximancer. It denotes the total number of text context blocks across the responses if the selected concept co-occurs with the other concepts, thus approximating the conditional probability (Leximancer, 2021). Figure 4 shows that when technical knowledge was chosen, there was a 50% likelihood the data would refer to the concept of software (e.g. Graduate #8 and #24). Graduate #22 specifically mentioned the knowledge of “preparing and reporting on financial statements, using accounting software, [...] attention to details”.

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<thead>
<tr>
<th>Technical knowledge</th>
<th>Co-Count</th>
<th>Likelihood</th>
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<tbody>
<tr>
<td>software</td>
<td>5</td>
<td>50%</td>
</tr>
<tr>
<td>tax</td>
<td>3</td>
<td>38%</td>
</tr>
<tr>
<td>knowledge</td>
<td>5</td>
<td>36%</td>
</tr>
<tr>
<td>practical</td>
<td>5</td>
<td>36%</td>
</tr>
<tr>
<td>thinking</td>
<td>2</td>
<td>33%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-technical knowledge</th>
<th>Co-Count</th>
<th>Likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>skills</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>business</td>
<td>5</td>
<td>31%</td>
</tr>
<tr>
<td>knowledge</td>
<td>3</td>
<td>21%</td>
</tr>
<tr>
<td>work</td>
<td>2</td>
<td>18%</td>
</tr>
<tr>
<td>thinking</td>
<td>1</td>
<td>17%</td>
</tr>
</tbody>
</table>

Source: Figure by authors
The above findings demonstrate that technical knowledge extends beyond proficiency in accounting standards; it also encompasses digitalization, aligning with the increasing adoption of digital technologies by the New Zealand business community (B4B, 2021).

When non-technical knowledge was chosen, there was a higher likelihood that the responses were talking about skills (40%) and business (31%). The skills mentioned by the graduates are as follows: time management and stress management (Graduate #10); critical thinking (problem-solving skills) (Graduate #18); interpersonal skills (Graduates #6 and #19); and communication and presentation skills (Graduates #8 and #16). Graduate #7 extended the emphasis on business settings:

I trust you will receive quite a bit [of] responses relating to soft skills, so I’ll not try to emphasize that further (which I think is indeed important). I would strongly encourage students & professionals to invest their time in understanding various businesses in various sectors and business functionalities within each business to understand how the business is working.

Indeed, the aforementioned soft skills have always been expected of accounting graduates (Tsiligiris and Bowyer, 2021) because they align with contemporary employer demands, as emphasized by accounting professional bodies through their micro-credential courses and ongoing professional development training [AICPA, 2021; CPA Australia and Chartered Accountants Australia and New Zealand (CAANZ), 2021; PWC, 2018]. The necessity for in-depth business knowledge supports the call to place AE within a broader socio-economic context (Powell and McGuigan, 2022), especially when considering the prevalence of small businesses and accounting firms in New Zealand, which contradicts the current focus of AE that remains rigidly centred on large companies (Burke and Gandolfi, 2014).

Overall, the narratives did not provide evidence that the workplace demanded social and moral skills, as championed by Carnegie et al. (2021a, 2021b, 2022, 2023a, 2023b), particularly in the New Zealand context, where AE is consistently portrayed as a technically and vocationally oriented pursuit (Boyce et al., 2019; Khosa et al., 2023). Prioritizing the technical aspect makes it difficult to foster soft skills and moral reasoning ability (Eynon et al., 1996; Flynn and Buchan, 2016; Mathews, 2001; Pippin et al., 2021; Powell and McGuigan, 2022). Moreover, the way ethics have been taught in accounting has long been characterised as superficial and ethically immature in the social and environmental context (e.g. Gray et al., 1994; Earley and Kelly, 2004). This trend should change to help students better appreciate the context of their learning and practice (Carnegie et al., 2021a, 2021b, 2022, 2023a, 2023b; Powell and McGuigan, 2022; Sidaway et al., 2022). Consequently, the human capital development and achievement of various SDGs in this country might take longer to materialize if tertiary institution does not urgently consider AE transformation for SDGs.

5.2 Aspects of the accounting profession that would evolve and those that would remain unchanged over the next decade

As can be seen in Figure 5 below, while accounting is prevalent in the graduates’ responses, the number of concepts present in the automation theme is notable. In fact, Figure 6 shows that automation has the highest likelihood of 53%, which means that when the graduates discussed the accounting profession’s evolution over the next decade, their responses were more likely to mention automation.

Some graduates predicted the level of automation in various areas such as accounting process (Graduates #6, 15, 16 and 23) and income tax and tax requirements (Graduate #11). The graduates also anticipated that the automation was expected to shift the accounting
profession from its traditional role to advisory and analytics specialist roles (Graduates #1, 7 and 11). Excerpts from Graduates #7 and #11 are provided below:

One will likely spend over 90% of his/her time on dealing with complex, judgemental, unstructured requirements/expectations/environment going forward unless one wants to compete barehandedly with various tech solutions (e.g., RPA, OCR etc.) and [an] increasingly digitalised enterprise system, automated or semi-automated tasks (for small-size or large enterprise) (Graduate #7)

With automation, accountants would most likely move to a business advisory role which requires a lot of interpretation of numbers and this process will evolve in the next years (Graduate #11).
Graduates described drastic transformations, which could influence the future of AE and the accounting profession, but mainly from the computing and technological aspects. More than two decades ago, accounting graduates in New Zealand were already aware of the importance of computer literacy (e.g. De Lange et al., 2006; Jackling and De Lange, 2009), and this is further validated in this study, which finds computing and technology continue to evolve and remain prominent in the accounting profession as anticipated by UNESCO Education Framework (UNESCO, 2015).

Responses also pointed towards a shift in the nature of work, moving towards consultancy and advisory roles, attributed to the automation of accounting processes. AICPA (2021) further emphasized that the evolving roles of accountants necessitate broader skill sets, enhanced competencies and a deeper understanding of emerging technologies, transitioning from technicians to knowledge workers (Herbert et al., 2021).

When asked about the aspects of the accounting profession which would remain unchanged in the next decade, the concepts shown in Figure 7 were expected. Despite current debates and ongoing work to embed sustainability aspects into accounting, auditing and assurance standards and practices, the graduates anticipate no change to those standards and practices over the next decade. There was no mention of whether they were alerted to the sustainability standards which have gained prominence in the practice. There was no evidence that gender and age group are more likely to have more concerns about sustainability, as reported by previous studies in New Zealand (Shephard et al., 2009; Theron et al., 2016).

The skills concept seemed to be counter-intuitive; thus, the excerpts of the responses were tracked as enabled by the Leximancer software. It was revealed that the skills were mostly related to work as an accountant (co-count 4; likelihood 36%) (untabulated), which primarily services their clients’ accounting and reporting. However, according to Carnegie et al. (2023b), the role of the accounting profession extends beyond accounting and reporting, contributing to shaping the moral order and accountability infrastructures of organizations and society. However, there is scepticism about the pace at which New Zealand AE can produce accounting professionals inspired to make a broader impact, not confined to the accounting realm but extending across all sectors and the crucial natural environment we rely upon for sustenance (Botes et al., 2014; Carnegie et al., 2023b; Sharma and Kelly, 2014; Sharma and Stewart, 2022).

5.3 The top-three drastic transformations accounting professional bodies should undertake over the next decade

Next, the graduates were asked about the top-three drastic transformations that should be undertaken by the accounting professional bodies. The graduates’ responses were largely dominated by greater emphasis on automation, network, technology, cyber-currency and robotics (Graduates #1, 8, 12 and 17), crypto/emerging technology and regulation-associated.

![Figure 7.](image-url)

Top five concepts relevant to unchanged aspects

<table>
<thead>
<tr>
<th>Concept</th>
<th>Count</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>accounting</td>
<td>83</td>
<td>100%</td>
</tr>
<tr>
<td>financial</td>
<td>29</td>
<td>35%</td>
</tr>
<tr>
<td>skills</td>
<td>20</td>
<td>24%</td>
</tr>
<tr>
<td>standards</td>
<td>18</td>
<td>22%</td>
</tr>
<tr>
<td>reporting</td>
<td>17</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: Figure by authors
risk (Graduates #5, 20 and 23), the implication of globalisation and digitisation (Graduates #20, 21, 26 and 29) and training for the members to become IT experts (Graduates #6, 9, 18 and 24), such as data analytics and programming (Graduate #14). Specifically, Graduate #15 said:

[... ] ensure professional development is ongoing so that members are updated in accounting rules and their interpretation, provide an understanding of how automation and AI is progressing in key accounting systems so that accountants understand the skills they will need to bring to work and to their professional development, understand major changes in technology that might have an impact on how businesses operate (e.g., moving IT on premises to cloud) (Graduate #15).

There seemed to be no tension in the narratives regarding technologies taking over the accounting profession. There were also graduates who looked at different perspectives on transformation. For example, Graduate #2 proposed an emphasis on performance beyond a focus on numbers, and Graduate #11 advised the accounting professional bodies to focus on how to attract more individuals to take up professional qualifications (see concept professional, Figure 8).

Carnegie et al. (2023b) highlighted the evolving social and moral aspects of accounting, extending beyond key performance indicators to contemplate the consequences of actions and inactions that impact others. According to the authors, this shift aligns with the professional accounting bodies’ advocacy for their members to uphold the responsibility of acting in the public interest and enhances the profession’s attractiveness.

5.4 Aspects of the accounting education that would evolve and those that would remain unchanged over the next decade

The graduates were also asked to reflect on the AE evolution. Based on their work experience, they were asked to predict the evolution of AE in the next decade and which aspects would remain unchanged.

In terms of evolution, the graduates seemed to place similar emphasis on AE, as depicted in Figure 9 below. According to Graduate #10, use of technology would become more prevalent in the education sector and, thus, should be driven by digital technology, including teaching delivery (Graduates #15, 21 and 23). Graduate #7 proposed that tech-centric and interdisciplinary aspects be considered in order for AE to be relevant. Thus, there is a need for AE to focus on big data, cloud computing, artificial intelligence, data analytics and how to adapt to accounting automation (Graduates #12, 14, 20, 26 and 30). However, there were respondents who felt that the future of AE should have a value-added focus (Graduate #8) by

<table>
<thead>
<tr>
<th>Concept</th>
<th>Co-Count</th>
<th>Likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>professional</td>
<td>3</td>
<td>43%</td>
</tr>
<tr>
<td>digital</td>
<td>2</td>
<td>40%</td>
</tr>
<tr>
<td>technology</td>
<td>5</td>
<td>31%</td>
</tr>
<tr>
<td>analytics</td>
<td>2</td>
<td>25%</td>
</tr>
<tr>
<td>cloud</td>
<td>1</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: Figure by authors
providing opportunities for students to develop interpersonal skills and varied options of specialisation (Graduate #17), including on-job training (Graduate #28) as championed in the scholarly literature, and UNESCO Education Framework. The other graduates discussed the possibility of micro credentials in small module teaching as part of the professional qualification (Graduates #9 and #15). Only two respondents highlighted the importance of environmental sustainability in the AE curriculum (Graduates #13 and #22).

The insights reinforce the need for AE to shape future graduates for the competitive global marketplace and digitalization in the workplace by incorporating workplace skill development into curricula and pedagogy (Herbert et al., 2021; Howieson, 2003; Jameson et al., 2012). However, little support for sustainability was rather surprising, considering the ongoing development of sustainability accounting and assurance standards in New Zealand. Perhaps the nature of accounting tends to disconnect from nature itself (Powell and McGuigan, 2022). The graduates potentially perceive sustainability standards as separate from accounting standards without recognizing implications for the basic principles of accounting [7].

It is possible that these graduates were still unaware of their evolving role in fostering the well-being of organizations, people and nature (Carnegie et al., 2023b). This could also be attributed to their background in technical accounting, becoming aware of opportunities and challenges posed by emerging technologies prior to and during entry-level employment, and currently gaining awareness of the increasing interest in sustainability and the implications of SDGs post-graduation. There is evidence that sustainability is gaining traction in AE in New Zealand (Botes et al., 2014; Sharma and Kelly, 2014; Sharma and Stewart, 2022; Carnegie et al., 2023b) predicted that recent entrants to the profession may express greater concern about the sustainability of the planet and the endeavour to shape a better world compared to previous generations.
Other New Zealand studies have reported a shift in students’ expectations to be knowledgeable about sustainable development (Botes et al., 2014; Sharma and Kelly, 2014; Sharma and Stewart, 2022). In addition, corporates expected tertiary education to equip their graduates with sustainability-related skills (Lacy et al., 2012; Pippin et al., 2021; Pippin et al., 2021) contended that it is only natural for the profession to seek accounting graduates who are well-versed in sustainability accounting and reporting in the future. In fact, one of the reasons driving New Zealand businesses towards sustainability is the acknowledgment that their future employees would have greater awareness of sustainability and be more selective in choosing their employers (SBN, 2023).

With regards to aspects of AE that would remain unchanged in the next decade, Figure 10 shows that the standards remain the top discussion point in terms of likelihood. The majority of the graduates (16) supported no change to the basics of accounting knowledge and management accounting principles, journal entries, accounting concepts and policies, auditing, taxation and reporting requirements, the skills in interpreting and applying accounting standards and providing sound financial advice (Graduates #2, 8 and 19).

Graduate #7 offered his insight below:

In general, I think financial reporting, cost accounting, taxation will stand unchanged in terms of being a relevant field of study. However, the specific themes, topics, and expectation will change.

The graduates emphasized the technical aspects of accounting as unchanged (e.g. Mathews, 2001). Further analysis of responses based on job position and age showed that individuals in auditing and managerial roles, particularly younger respondents, believed that AE should have a focus on technology. Furthermore, a greater number of accounting graduates expressed the necessity for significant changes in AE content to better align with workplace requirements. When considered together, a technology-driven approach and alignment with workplace demands correspond to the profile of small businesses, which are the largest employers in New Zealand and heavily rely on technology (B4B, 2021; MBIE, 2023).

5.5 Top three drastic transformations for tertiary institution
Following on from their responses above, the graduates were asked about the top three drastic transformations that the tertiary institutions should undertake to remain relevant. The top three transformations were coded by Leximancer into concepts, as shown in Figure 11 below.

Colour in red, the practical and work aspects hold greater relevance to the discussion of the transformation of tertiary institution. Four graduates emphasized the institutions’
importance in offering practical AE (Graduates #5 and #30), bridging the gap between theory and practice (Graduate #28) and fostering collaboration with businesses to enable students to apply their accounting knowledge in real-world scenarios (Graduate #26). Graduate #15 summarised the drastic transformation initiatives:

Ensure graduates are fit for the job market, and that includes understanding skills needed to take on entry-level jobs requiring tertiary education, understanding the pace of technological change and the impacts it has in accounting practices, understanding how students want to engage with accounting study, particularly those looking at retraining.

The graduates’ responses indicate their expectation that tertiary education providers would ensure their preparedness for the workplace upon graduation (Pargmann et al., 2023). While valid, the demand for internships and courses simulating real-world scenarios may stem from the contentious perspective of tertiary institutions as market- and employer-driven entities (Caton, 2014; Chankseliani and McCowan, 2021; Jankowski and Provezis, 2014; Joseph, 2012; Slocum et al., 2019). This notion contrasts with the understanding that the role of tertiary institutions, as critical conscience institutions, is to strive towards producing responsible leaders for the future (Gray, 2019; McCowan, 2019; Powell and McGuigan, 2022).

Graduate #23 addressed the digital aspect, aspiring to have global classroom facility where digital learning took place but still emphasised a focus on the learner. Other graduates reimagined flexible and borderless education, higher standards of taught content and education providers collaborating internationally (Graduate #17).

The emphasis on digital learning has long been suggested by scholars (Gray, 2019; Cho et al., 2020; Pippin et al., 2021; Tsiligiris and Bowyer, 2021), which supports SDG 4 to ensure inclusivity and equity in quality education and lifelong learning opportunities (UNESCO, 2015). However, a significant challenge lies in aligning what New Zealand tertiary institutions can offer with what their faculties are capable of delivering and meeting stakeholders’ demands. In reality, students embark on their AE program with the expectation that the institution will equip them for workplace demands. Unfortunately, in the New Zealand context, AE may fall short in design and performance, producing graduates lacking the competencies required in the workplace (Bui and Porter, 2010; Wells et al., 2009). Nonetheless, the shift towards the SDGs implies that accounting should not be considered in isolation from the global aspirations.

6. Summary, conclusion and recommendations

This paper seeks to gather the perspectives of accounting graduates regarding workplace demands, identify gaps in AE and explore the future of the accounting profession. Inspired by
Carnegie *et al*'s (2021a, 2021b, 2022, 2023a, 2023b) new definition of accounting as a TSM practice, the goal is to propose AE centred on SDGs. The SDGs aspire to a universally shared vision of a safe, just and sustainable world, prioritizing moral principles and advocating for inclusive participation, with the 2030 Agenda underscoring the transformative impact of universal values in combating discrimination and inequality (United Nations, 2015, 2024). The aim is to instil tertiary students with skills that enable them to approach accounting in its TSM dimensions.

The New Zealand graduate survey highlighted that technical knowledge in accounting extends beyond standards to encompass digitalization, aligning with workplace demands. However, the survey revealed a lack of emphasis on non-technical skills and in-depth business knowledge, crucial for the holistic development of the accounting profession as a TSM-oriented practice.

In terms of the accounting profession and professional bodies, New Zealand accounting graduates anticipate increased automation in areas such as accounting processes and tax requirements. This shift is expected to move away from their traditional roles towards advisory and analytics specialists. While anticipating no change in certain accounting standards, there is a notable absence of awareness regarding the growing prominence of sustainability standards. Despite a lack of concern in narratives about technology’s adverse impact on the accounting profession, there is an expectation for the accounting professional bodies to draw more individuals towards qualifications, emphasizing broader performance aligned with public interest and enhancing the profession’s reputation.

In the context of AE transformation, the graduates underscored the imperative of aligning education with the competitive global marketplace and workplace digitalization. Surprisingly, there was a notable lack of support for sustainability, contradicting the ongoing development of sustainability accounting standards. This discrepancy suggests a possible perception among graduates that sustainability standards are distinct and unrelated to fundamental accounting principles. The graduates’ potential unawareness of their evolving role in fostering well-being and sustainability may stem from their technical accounting background. Notably, respondents in auditing and managerial roles, especially younger ones, emphasized the need for AE to focus on technology. This aligns with a greater number of graduates advocating for significant changes in education content to meet workplace requirements, reflecting the technology-driven landscape of small businesses, the primary employers in New Zealand, and supporting the perceived market-driven approach of tertiary institutions.

The convergence of the UNESCO Education Framework with the scholarly literature and the gap, as evidenced by the empirical findings, indicates an opportunity to bridge the gap between learning and the workplace demand (see Figure 12).

It is acknowledged that there are ongoing alignment challenges for accounting courses to fit the requirements of the professional bodies and the wider stakeholders. This highlights the importance of engagement with SDG-related narratives to invigorate further conversation and debate to stimulate the teaching and practice of accounting to potentially and practically enable achievement of SDGs. Indeed, TSM skills are necessary for accountants to function effectively and ensure a sustainable future. Sustainability, along with social and moral responsibilities, is not to be treated just as added incidental knowledge but as the cornerstone of AE and the accounting profession, incorporating interdisciplinary perspectives when addressing business problems and challenges (Annan-Diab and Molinari, 2017; Cho *et al.*, 2020; Gray, 2019).

There are also challenges to effectively embedding the development and assessment of social and moral dimensions of accounting and the related skills into the AE curriculum, a matter long queried by educators and scholars. The provocative/activist approach of teaching and learning would require a curriculum which places the student as the “active
subject” in the construction of his/her own knowledge by making the connection between accounting choices and their ecological, economic and social implications (see Luppi, 2011). Collaboration with the professional bodies could be initiated at postgraduate level in which accounting students undertake live case studies and field visits to businesses associated with their members to understand the sustainability challenges and explore how accounting could be used as potential solutions. In all the initiatives suggested above, the emphasis on accounting as a TSM practice should be integrated into teaching modules and learning objectives. Textbook authors could also play an important role in shaping the content for classroom delivery (Pippin et al., 2021), enabling AE to be tailored to SDG achievements.

The above initiatives could open the pathway for formal and informal partners to collaborate, as advocated by the UNESCO Education Framework 2030 (see UNESCO, 2015). Further, AACSB (2020) [9] has encouraged its accredited entities to evaluate their societal impact using SDG metrics [see Table 9.1 in AACSB (2020), Fagnot (2023)]. Even though the accreditation and accounting professional bodies are yet to require tertiary institutions to formally embed sustainability-related topics in the curriculum, this should be anticipated in the near future. This collaboration may also be a promising avenue for pushing the agenda of AE towards SDGs.

This study is limited by the small number of graduates participating. The online survey included graduates with a mixture of levels of experience, positions, gender and age to provide the current thinking about demand from the workplace and determine whether the technical aspect of AE is still dominant in the New Zealand context. The aim was to explore whether non-technical skills and knowledge emerged from the discussion, and thus more critical questions on the SDGs and specific suggestions on how to incorporate critical thinking into curricula were not included. Therefore, it is possible that the students did not discuss social and moral knowledge because they were not specifically asked about them. This aspect remains a limitation in this study and is an opportunity for further research.

In the New Zealand context, future research could involve interviews with employers, accounting professional bodies and educators to gain insights into the prevailing dominance of technical skills in AE and the profession. These interviews can shed light on transformation initiatives aligned with SDGs and the UNESCO Education Framework. An assessment of the readiness of tertiary institutions and their students to meet the stakeholders’ expectations could provide valuable insights to assess the successes and failures of these initiatives. The information could provide guidance and facilitate knowledge sharing among tertiary...
institutions. In addition, it would be valuable to gauge these stakeholders’ perceptions of the importance of TSM skills among accounting graduates. This information can contribute to further promotion of accounting as a TSM practice. Taking stock of the hegemonic and vested interest in defending or challenging the status quo offers insights into whether convergence exists between AE and SDGs, noting that any support may contribute to the roadmap necessary to further the achievement of SDGs as “inaction is not an option” (Bebbington and Unerman, 2018). Ultimately, it is important to recognize that addressing the challenges posed by the SDGs is a collective effort that requires the participation and commitment of all stakeholders. As Robert Swan says, “The greatest threat to our planet is the belief that someone else will save it” (Cohen, 2023).

Notes
1. Tertiary institution – tertiary education providers in the public and private sectors.
3. Following Hopwood et al. (2005), Figure 1 represents a generalized and simplified broad conceptual framework without precisely mapping boundaries and trajectories to be refined by other scholars researching in this space.
4. Refer to Brands and Holtzblatt (2022), Gray (2019) and Porco (2019), on suggestions and examples of SDG-related content and delivery options.
5. The authors are thankful to the anonymous reviewer for this feedback in the earlier version of this paper.
6. It is common in New Zealand for students enrolled in distance learning to pursue their degrees. These students usually have prior work experience and take an extended period to complete their degree due to work commitments. In our sample, there are six students in this category.
7. The authors are thankful to the anonymous reviewer for this suggestion.
8. Graduates #1, 3, 5, 6, 7, 10, 11, 12, 13, 15, 18, 24, 25, 26, 28 and 30.
9. AACSBAACSB – Association to Advance Collegiate Schools of Business; EQUIS – European Foundation for Management Development (EFMD) Quality Improvement System.
10. The graduates were asked for their top-three drastic transformations, but Leximancer coded them as concepts.

References


Rethinking accounting education


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