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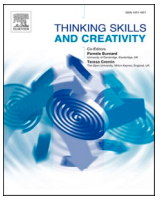

When teachers become learners: Challenges with the integration of critical thinking into accounting curricula

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ABSTRACT

Accounting educators' perceptions of their own critical thinking skills, their understanding of critical thinking and their ability to develop critical thinking in their students were investigated in the study. While critical thinking is widely acknowledged as a core goal of higher education, prior research has largely overlooked educators' self-perceptions, a vital factor in fostering students' critical thinking abilities. This study addresses this gap by examining educators' views on their competencies and pedagogical strategies for teaching critical thinking. A quantitative research design was adopted for the study. A questionnaire comprising seven statements scored on a four-point Likert scale and three open-ended questions was used. Descriptive statistics provided an overview of the self-assessed skills, while thematic analysis of open-ended responses revealed key insights. Themes included a significant demand for additional training and skills development in critical thinking pedagogies, with a focus on adult learning theories, andragogy and self-directed learning while the categories represented the responses from the participants. The thematic analysis assisted in contextualising the responses based on the identified learning needs, participants' perspectives, and the broader framework of adult education principles. This process allowed for a deeper understanding of how critical thinking pedagogies, andragogy, and self-directed learning can be effectively integrated into training programs to enhance skill development and educational outcomes. Participants emphasised the necessity of continuous professional development and specialised workshops to enhance their ability to teach critical thinking effectively. Based on the findings, it was recommended that higher education institutions and professional bodies invest in comprehensive training programmes and support mechanisms to integrate critical thinking into teaching practices with a view to nurturing a new generation of critical thinkers in the accounting profession.

1. Introduction

"The world is now more confusing and overwhelming than ever, and well-developed problem-solving skills – like critical thinking and rational analysis – will be vital in steering the demands of a post-Covid workplace" (Poague, 2020:1). Even before the Covid-19 pandemic, rapid developments in nanotechnology, big data, automation and artificial intelligence placed a question mark over the

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adequacy of having only basic knowledge and skills (Seale, 2020). Rational thought processes, the objective evaluation of information and the ability to make clear and informed decisions are even more essential today to traverse fake news and conflicting data (Lukins, 2020). In this context, the role of education in fostering these critical skills cannot be overstated. As the transformation of the workplace occurs, the competencies and capabilities of the workforce must also be advanced to effectively transfer these attributes into the work environment.

In today's business world, the traditional roles of accountants extend far beyond number-crunching and financial reporting. As organisations traverse complex challenges and uncertainties, the demand for accounting professionals who can analyse, interpret and critically evaluate financial information continues to grow significantly (Wolcott & Sargent, 2021). Recognising this shift, educational institutions are emphasising the importance of integrating critical thinking skills into accounting curricula. Critical thinking, as defined by Terblanche and De Clercq (2021), is the ability to systematically analyse and evaluate information to make reasoned judgements and decisions. This ability is deemed essential for accounting professionals if they are to effectively address the complex challenges of the modern business world. However, despite the acknowledged importance of critical thinking, its integration into accounting education presents numerous challenges. Davies (2013) highlights a debate where generalists view critical thinking as non-discipline specific, implying that it can be taught independently, whereas specifists argue that it must be closely linked to the language and context of a particular discipline such as accounting. This critical engagement prompts further inquiry into whether a generic approach might overlook the specific analytical demands of the accounting profession.

In the past, employers wanted graduates who have generic skills, such as interpersonal communication skills, the ability to work in teams and leadership skills (Davies, 2013). Critical thinking is key in times of doubt because available information is then more likely to be ambiguous (Brown, 2020:1). In a complex society, critical thinking has become vital in all aspects of life, from making informed personal decisions to addressing professional challenges and contributing to civic responsibilities (Walthew, 2004). However, Walthew's (2004) observation regarding the vague definition of critical thinking invites a deeper critique: the ambiguity in defining critical thinking can lead to inconsistencies in curriculum design and assessment practices, potentially undermining efforts to systematically foster these skills. Seale (2020:1) goes so far as to assert that "[i]f we are sincere in our goal to prepare young people to solve problems the likes of which we have never seen, using technologies that have not been created, in career fields that do not exist, education systems should obsess over critical thinking". Unfortunately, research suggests that most graduates lack certain critical thinking skills (Flores *et al.*, 2012; Snyder & Snyder, 2008; Willingham, 2007). This, in essence, means that accounting graduates also lack certain critical thinking skills required by the accounting profession (Wolcott, 2019:1).

In accounting education, there is widespread agreement that critical thinking skills are vital for graduates to succeed in their professional careers. Accounting educators, therefore, bear a significant responsibility to assist students in cultivating, refining, and strengthening these skills (Young & Warren, 2011:859). While some students may exhibit a natural propensity for critical thinking, research underscores the importance of deliberate instructional efforts to further develop these abilities (Choy & Cheah, 2009:198; Stedman & Adams, 2012:9). Huber and Kuncel (2016) along with Tapper (2004:200) provide empirical evidence suggesting that undergraduate education may not significantly enhance critical thinking skills, raising questions about the effectiveness of current pedagogical approaches in accounting programs. Such findings call for a reassessment of instructional strategies to better meet the needs of the profession. For example, case-based learning approaches, such as those employed in auditing courses, have demonstrated potential in fostering critical thinking through real-world problem-solving exercises. Although thinking is a natural process that occurs in humans, it should be properly cultivated because it has the potential to be prejudiced, inaccurate, incomplete and uninformed (Duron, Limbach & Waugh, 2006:160). Paul (2004:1) further critiques the prevalent assumption among educators that their existing teaching practices inherently promote critical thinking. This oversight may result in a lack of explicit instructional design aimed at developing higher-order cognitive skills, necessitating a more rigorous pedagogical framework.

Unfortunately, critical thinking is not well defined or clearly understood (Walthew, 2004:408). Paul (2004:1) highlights that many educators lack a foundational understanding of critical thinking concepts, with some erroneously assuming their teaching practices inherently promote critical thought (Paul, 2004:1; Stedman & Adams, 2012:9). This misconception not only impedes the effective cultivation of critical thinking skills but also leads to inconsistencies in assessment and evaluation practices (Pithers & Soden, 2000:239). For instance, educators might assess critical thinking based solely on students' ability to memorise or summarise content, neglecting deeper analytical, evaluative, and creative thinking processes. Tapper (2004:199) aptly critiques this assumption, observing that "[t]he often unstated assumptions seem to be that students will develop as critical thinkers by osmosis." Such assumptions are problematic, as they overlook the need for structured and intentional instructional design aimed at fostering these skills.

Empirical evidence raises further doubts about the effectiveness of higher education institutions (HEIs) in cultivating critical thinking. While it is generally believed that attending university positively impacts students' critical thinking abilities, research suggests otherwise. For example, Huber and Kuncel (2016) and Tapper (2004:200) found limited evidence to support significant gains in critical thinking during undergraduate education. This raises concerns about whether accounting programmes adequately prepare graduates to meet the critical thinking demands of the profession. Despite the increasing call for integrating critical thinking into accounting curricula, curricular reforms have been slow and sporadic over the last three decades (Wolcott, 2020:3; Terblanche et al., 2023).

The urgency of addressing this issue is heightened by the changing demands of the accounting profession. Accountants are increasingly required to navigate complex decision-making scenarios, evaluate competing perspectives, and adapt to evolving regulatory and technological landscapes. For instance, the growing emphasis on sustainability reporting and integrated thinking demands accountants who can critically analyse financial and non-financial information to provide strategic insights. Yet, few studies have comprehensively explored the barriers educators, students, and institutions face in fostering critical thinking within accounting programmes. Challenges such as limited faculty training, rigid curricular structures, and misaligned assessment practices remain

underexplored.

This study seeks to address this gap by critically examining the challenges associated with integrating critical thinking into accounting education. The study aims to provide actionable insights that can inform curriculum design and instructional strategies. By doing so, it contributes to the broader discourse on equipping accounting graduates with the critical thinking skills necessary for success in an increasingly complex and dynamic business environment.

2. The context of the study

Critical thinking is increasingly recognised as a cornerstone of accounting education, essential for preparing graduates to navigate the complexities of modern professional environments. However, the cultivation of critical thinking skills among accounting students remains inconsistent and inadequately addressed in many HEIs. While existing literature acknowledges the role of educators in fostering critical thinking, limited attention has been given to understanding educators' own perceptions of their critical thinking abilities and how these perceptions influence their teaching practices. This gap in knowledge raises important questions about the effectiveness of accounting education in equipping students with the critical thinking skills needed for professional success.

Accounting educators' knowledge and understanding of critical thinking, both conceptually and in terms of their own abilities, directly shape the teaching strategies they employ. If educators lack clarity on critical thinking concepts or confidence in their own critical thinking abilities, they may inadvertently adopt teaching practices that fail to adequately develop these skills in their students. This is particularly concerning given the increasing demand for accounting graduates who can think critically to solve complex problems, make informed decisions, and adapt to evolving business and regulatory landscapes.

Addressing this gap is critical not only for improving teaching practices but also for aligning accounting education with broader professional and societal outcomes. By exploring accounting educators' perceptions of their critical thinking abilities and their teaching practices, this study seeks to uncover key challenges and opportunities for enhancing critical thinking development in accounting curricula. Such insights can inform targeted interventions, curriculum reforms, and professional development initiatives aimed at equipping future accountants with the critical thinking skills needed to thrive in an increasingly dynamic and complex profession.

The following research questions therefore guided this study:

1. What are accounting educators' perceptions of their own understanding of critical thinking and the development of critical thinking in students?
2. What are accounting educators' perceptions of the level of their own critical thinking skills?
3. What are accounting educators' perceptions of their current teaching practices and whether these practices promote critical thinking in their students?
4. What are accounting educators' perceptions of their own ability to model critical thinking and effectively develop critical thinking in their students?

Answering the questions outlined for this study could assist accounting educators in identifying shortcomings in their critical thinking teaching practices and recognising needs for further training in critical thinking development. The focus of this study is on exploring educators' perceptions, as opposed to measuring or analysing educators' critical thinking or assessing the effectiveness of specific accounting programmes in relation to critical thinking development. A self-designed questionnaire was used to collect data for the study. Part A of the questionnaire comprised seven closed-ended statements. Participants had to rate each statement on a four-point Likert-type scale. Part B comprised three open-ended questions. The participants comprised 34 attendees of a workshop on critical thinking hosted by the South African Institute of Chartered Accountants (SAICA), of whom 24 completed the questionnaire. The majority of the attendees were, at the time of the study, involved in the teaching of chartered accountancy programmes offered at various SAICA-accredited universities throughout South Africa, and a small number of them were involved in the managerial functions of the accounting schools or departments of these SAICA-accredited universities.

The literature review section of this article presents an overview of critical thinking, and the role educators play in students' critical thinking development. The literature review section also provides insights on educators' perceptions of critical thinking, as reported in the literature. The research design and methodology section provides an overview of the self-designed questionnaire, the participants and how data were collected and analysed. The findings section provides the results of the questionnaire, offering in-depth insight into accounting educators' perceptions of their own critical thinking skills, their understanding of critical thinking and their ability to model and develop this vital skill in their students. Further insights are provided in the discussion and conclusion sections.

3. Literature review and theoretical framework

The next sections explain the literature relevant to critical thinking, as well as the theories of adult learning related to this article.

3.1. The context of critical thinking

Since the introduction of the concept of critical thinking in the 1990s, various researchers have tried to define it (Facione, 1990; Kurfiss, 1988; McPeck, 1990; Moore, 2011; Paul, 1993).

3.1.1. Defining critical thinking

Critical thinking has been defined and explored by various scholars as they emphasise distinct aspects of this cognitive process. Facione (1990) describes it as a purposeful, self-regulatory judgment that involves interpretation, analysis, evaluation, inference, and explanation of underlying considerations. Kurfiss (1988) and Terblanche and De Clercq (2020) view it as an investigative process aimed at exploring situations or problems to develop justified conclusions that integrate available information. Similarly, McPeck (1990) highlights critical thinking as the skill and propensity to engage in reflective scepticism, evaluating arguments and evidence relevant to an issue. Moore (2011) affirms that it is a disposition to deliberate systematically, assess claims and arguments critically, and justify reasoning. Paul (1993) frames critical thinking as the disciplined art of applying the best possible reasoning in any context.

According to Latif, Yusuf, Tarmezi, Rosly and Zainuddin (2019:57–58), critical thinking entails a mental process of analysing and evaluating thinking, with a view to improving it. It is "self-directed, self-disciplined, self-monitored, and self-corrective thinking", according to Wolcott (2020:3–4). Critical thinking also involves an extensive range of cognitive skills, such as the ability to interpret, analyse and evaluate, as well as attitudes (dispositions), such as being inquisitive and open-minded (Terblanche & De Clercq, 2020; Yuan & Stapleton, 2020:41). Regardless of the various definitions of critical thinking, employers expect HEIs to develop the dispositions associated with the concept and require graduates who are curious, critical, analytic and reflective thinkers and problem-solvers (Davies, 2013; Harvey, 1997). Collectively, these definitions highlight that critical thinking comprises core elements such as reflective scepticism, disciplined inquiry, systematic analysis, and a commitment to reasoned judgment in diverse contexts.

3.1.2. Development of critical thinking

Developing critical thinking is becoming an increasingly important aspect in higher education (Facione & Facione, 2013; Moore, 2013) yet limited research has been conducted on the practical teaching of critical thinking (Halx & Reybold, 2005). Educators agree that developing critical thinking in their students is vital (Albrecht & Sack, 2000), but only a few know how to teach and assess it (Paul, Elder, & Bartell, 1997). Innabi and Sheikh (2006) explored secondary school mathematics teachers' perceptions of critical thinking and compared their perceptions of critical thinking before and after educational reform. The results showed that the majority of these teachers seemed to lack a clear understanding of critical thinking, even after 15 years of educational reform. Similarly, the results of the study of Choy and Cheah (2009) indicated that educators believed they were teaching critical thinking to their students, but they did not seem to have a full understanding of the requirements of effectively developing critical thinking in students and they were, in fact, focusing on the comprehension of subject matter instead. This was again the outcome when Stedman and Adams (2012) conducted a study to gain insight into agriculture and life sciences faculty's understanding of critical thinking concepts and their perceptions of critical thinking instruction in higher education. The findings suggested that faculty lacked knowledge on critical thinking and needed further training in this regard. Stedman and Adams (2012) note that if educators do not have a solid understanding of critical thinking, they may be under the impression that they are developing critical thinking in their students, when, in fact, they are not.

The study of Boso and Gross (2015) was similarly aimed at assessing 106 nurse educators' perceptions of critical thinking. The findings of their study revealed that the majority of the nurse educators (95.3 %) could not provide a proper definition of critical thinking, which included the skills and disposition domains of critical thinking. Critical thinking comprises skills like analysis, evaluation, and self-regulation, and dispositions such as open-mindedness, curiosity, and fair-mindedness, which together enable purposeful, reasoned decision-making and problem-solving (Boso & Gross, 2015). Zhang, Yuan and He (2020) made use of a questionnaire and follow-up interviews to explore the perceptions and experiences of English as a foreign language teachers in respect of critical thinking and its teaching. According to the findings of their study, the participants in the study lacked understanding and knowledge of critical thinking and how to implement critical thinking in their teaching. The participants felt they needed more support to effectively teach critical thinking. To implement critical thinking in teaching, Nelson and Crow (2014) emphasise that educators should integrate active learning strategies such as problem-solving, case studies, and debates, encourage open discussions and questioning, model critical thinking behaviours, and provide continuous support through clear guidance, feedback, and professional development opportunities.

From the literature it is evident that despite the important role of educators in cultivating critical thinking in their students, limited research has been conducted to obtain an understanding of the perceptions of educators regarding critical thinking (Stedman & Adams, 2012). Choy and Cheah (2009) assert that the perceptions of educators have an influence on their behaviour and their teaching. Stedman and Adams (2012) note that it is imperative to explore educators' knowledge of critical thinking and to obtain an understanding of their current teaching practices for the development of critical thinking.

3.2. Critical thinking and accounting

This article focuses specifically on the perceptions of educators in the discipline of accountancy. Although a career in accounting requires a graduate to have the necessary technical knowledge (American Institute of Certified Public Accountants (AICPA), 2019; Berry & Routon, 2020; The pathways Commission, 2012; Rebele & Pierre, 2019), research (see Barth, 2018; Kaplan, 2011; Lee & Ha, 2015) suggests that accountants need various soft skills to ensure they remain professionally relevant. Soft skills essential for accountants include communication, critical thinking, teamwork, adaptability, leadership, ethical judgment, time management, and emotional intelligence, enabling them to interact effectively, adapt to change, and address complex business challenges (Abu Asabeh, Alzboon, Alkhalaileh, Alshurafat & Al Amosh, 2023).

3.2.1. Critical thinking and the accounting profession

The accounting profession communicates the importance of critical thinking skills for the future of the profession through its various professional bodies (International Accounting Education Standards Board [IAESB], 2018:20, 24, 33, 49, 58, 72; International Ethics Standards Board for Accountants [IESBA], 2018). This emphasis is also reflected in the CA 2025 competency framework (SAICA, 2024), which expects students to develop these essential skills.

3.2.2. Critical thinking and accounting education

Critical thinking plays a crucial role in accounting education by empowering students to analyse financial data, evaluate evidence and make informed decisions. However, despite its significance, there has been a lack of emphasis on critical thinking in accounting curricula. This gap is increasingly recognised, leading to calls for reforms in accounting education to better integrate critical thinking skills. Several laws and regulations support the importance of critical thinking in accounting practice. For instance, in South Africa, the Companies Act of 2008 emphasises the need for accurate and transparent financial reporting, requiring accountants to exercise critical judgement and analysis in financial disclosures. The CA 2025 framework (SAICA, 2024) further emphasises the need for accountants to analyse and evaluate complex information, supporting informed decision-making in a volatile and complex business environment. Additionally, SAICA's focus on integrated thinking and continuous professional development ensures that members enhance their critical thinking and problem-solving abilities throughout their careers. Similarly, internationally, the International Financial Reporting Standards (IFRS) mandate the application of professional judgement and critical analysis in interpreting and applying accounting standards. These legal frameworks underscore the importance of fostering critical thinking skills in accounting education to ensure the integrity and reliability of financial information.

3.3. Adult learning theories

The transition from being an accounting expert to being an effective educator is challenging, especially when tasked with integrating critical thinking skills into a curriculum. Most accounting educators come from backgrounds where they focused primarily on technical content and do not have formal training in educational methodologies. This lack of exposure to pedagogical principles presents significant obstacles when educators are required to teach critical thinking effectively. SAICA's emphasis on fostering critical thinking skills among students highlights this gap and compels educators to revisit their roles and learn anew. In the case where teachers become learners, they require a deeper understanding and application of adult learning theories to bridge the gap in their teaching strategies. In designing an accounting curriculum that effectively fosters critical thinking skills, it is crucial to integrate adult learning theories. These theories, such as andragogy and self-directed learning, emphasise that adult learners are driven by practical experiences and come with a wealth of prior knowledge and expertise (Abedini, Abedin & Zowghi, 2021; Ngozwana, 2020). Given that most accounting educators have primarily technical backgrounds and limited exposure to pedagogical techniques, embracing these adult learning theories can be transformative. Educators can empower students to take ownership of their education and apply critical thinking skills to solve complex accounting problems by creating learning environments that encourage active engagement. This directly relates to Research Question 1, as it invites accounting educators to reflect on their understanding of critical thinking and the ways in which they foster its development in students. This student-centred approach will enhance the relevance and effectiveness of accounting education and prepare students to thrive in the professional environments where critical thinking is essential. Incorporating adult learning theories thus becomes a crucial strategy in overcoming the challenges faced by accounting educators in teaching critical thinking pedagogies.

3.3.1. Andragogy and self-directed learning

In accounting curriculum development, incorporating principles of andragogy and self-directed learning can enhance critical thinking skills among students. Andragogy emphasises adult-centred learning, recognising that adult learners are self-directed and motivated by real-life experiences (Charungkaittikul & Henschke, 2018). Andragogy, as defined by Knowles (1980), refers to the method and practice of teaching adult learners which emphasises self-directedness, relevance, and practical applications. It posits that adult learners are motivated to learn when the content is applicable to real-life situations and their prior experiences are valued in the learning process. This theoretical approach links directly to Research Question 3, prompting educators to evaluate whether their current teaching practices are aligned with adult learning principles that promote critical thinking in their students. To incorporate andragogy into teaching critical thinking in accounting, educators can design learning activities that focus on solving authentic problems, such as analysing case studies, evaluating financial scenarios, or debating ethical dilemmas (Noori & Yao, 2023). This approach encourages educators to incorporate critical thinking skills in contexts that mirror their professional realities, thereby fostering deeper engagement and understanding.

Self-directed learning opportunities enable accounting educators to empower students to take ownership of their learning journey (Hughes & Yarbrough, 2021). Self-directed learning involves learners taking the initiative to diagnose their learning needs, set goals, identify resources, and evaluate outcomes (Knowles, 1975). This component also addresses Research Question 2 by prompting educators to reflect on their own critical thinking skills and to consider how self-directed learning practices might further develop these abilities. Incorporating self-directed learning into critical thinking teaching can be achieved by encouraging students to take ownership of their learning through research projects, reflective journaling, and collaborative problem-solving tasks. For instance, assigning open-ended tasks that require students to explore various accounting frameworks or question assumptions in financial practices allows them to practice critical thinking independently. Educators can support this by providing guidance and feedback, fostering an environment where learners feel empowered to take responsibility for their intellectual growth. This approach can

encourage students to critically analyse financial information, identify areas for improvement and propose innovative solutions. In keeping with adult learning principles, it promotes the development of lifelong learning skills essential for success in the accounting profession.

Regarding the above context, the integration of andragogy and self-directed learning into accounting curricula provides a comprehensive framework for fostering critical thinking skills and to equip students to address complex financial challenges competently (Charungkaittikul & Henschke, 2018). Andragogy focuses on learner-centered approaches while it delves to make the curriculum relevant to the professional and personal experiences of students by emphasising real-world applications such as financial decision-making and ethical dilemmas. This directly links to Research Question 4, as educators are encouraged to evaluate their ability to model critical thinking effectively and facilitate environments that enable students to emulate these skills. This approach influences adult learners' intrinsic motivation and encourage them to critically evaluate information and develop tailored solutions to practical problems. Complementing this, self-directed learning empowers students to take initiative and foster independence and accountability through research-driven projects, peer collaboration, and reflective exercises. Educators play a pivotal role in guiding inquiry, offering resources, and providing feedback, thus creating a dynamic learning environment that enhances cognitive flexibility and analytical skills. Together, these approaches prepare accounting students for the demands of the profession and to ensure adaptability and professional relevance.

3.3.2. Context-based learning

Implementing context-based learning strategies in accounting curricula can significantly enhance critical thinking skills among students. Educators can facilitate a deeper understanding and application of theoretical knowledge by contextualising accounting concepts within real-world scenarios and business contexts (Avargil, Herscovitz & Dori, 2012). Through case studies, simulations and practical exercises, students are encouraged to analyse complex financial situations, evaluate alternative solutions and make informed decisions (Yu, Fan & Lin, 2015). This approach reinforces the relevance of accounting principles and fosters the development of critical thinking skills essential for success in the accounting profession. Context-based learning empowers students to apply their knowledge in authentic settings, preparing them to navigate the complexities of the accounting field with confidence and proficiency (Avargil et al., 2012).

3.4. Theoretical framing of the study

In this study, the authors integrate the discussed theoretical perspectives into a cohesive framework that conceptualises the role of critical thinking within accounting education. Drawing on the importance of soft skills as highlighted by industry standards (AICPA, 2019; Berry & Routon, 2020) and supported by research emphasising the need for critical thinking and other soft skills in accounting (Barth, 2018; Kaplan, 2011), the study positions critical thinking as an essential complement to technical accounting knowledge. This study furthermore incorporates adult learning theories such as andragogy, self-directed learning, and context-based learning. The study highlights that accounting educators, often rooted in technical backgrounds, must adopt learner-centred and contextually relevant pedagogical approaches to effectively foster critical thinking in their students. This integrated framework informs the research questions and guides the interpretation of educators' perceptions regarding their own critical thinking abilities and their approaches to teaching these skills. In essence, the study conceptualises critical thinking as a multidimensional phenomenon that is simultaneously a professional necessity, a pedagogical challenge, and a catalyst for educational reform in accounting. This study thus supports the need to think critically about critical thinking in higher education, as critical thinking is regarded an essential skill in higher education and beyond, yet often misunderstood by both students and educators (Lloyd & Bahr, 2010).

4. Research methods

A quantitative research design was used in this exploratory study to gain insight into the perceptions of accounting educators in respect of their understanding of critical thinking, their own critical thinking abilities and how their current teaching practices are developing critical thinking in their students (Creswell, 2014:155–166). A quantitative research design was preferred in this exploratory study to gather objective and measurable data on the perceptions regarding critical thinking of accounting educators. This approach aligns with the post-positivist paradigm as it reveals the importance of empirical evidence and the recognition of context, values, and subjectivity (Creswell, 2014:7). Post-positivism allows for a systematic inquiry into observable phenomena through structured data collection and statistical analysis, while still acknowledging the role of interpretation and context in understanding the findings (Gray, 2014). The authors selected a quantitative approach because it provided a clear, structured framework to explore the perceptions of participants. While quantitative methods are typically focused on numerical data, they can still incorporate qualitative principles, such as including open-ended questions to gain richer insights into participants' views. The combination of these elements helped to strike a balance between numerical rigor and the exploration of deeper contextual understanding of the research problem. The authors sought to explore and uncover the truth behind the perceptions of critical thinking and teaching practices of accounting educators using a reliable and comprehensive method to contribute to a more comprehensive understanding of the research problem. Data were collected using a self-designed and self-administered questionnaire, employing purposive sampling. The questionnaire was developed based on a review of relevant literature (Saunders, Lewis & Thornhill, 2016:436–474), which supports its content validity by ensuring the items cover the domain of critical thinking as applied in accounting education. The questions in this study's self-designed questionnaire were mainly inspired by a study conducted by Lloyd and Bahr (2010). These authors adopted a self-designed survey with a qualitative methodology to report on a small-scale investigation into the perceptions of academics ($n = 21$)

and students ($n = 26$) of critical thinking in a Faculty of Education at an Australian University. Questions ranged from participants having to define critical thinking, exploring whether educators explicitly teach for critical thinking in their teaching tasks, and whether the educators have developed assessment strategies for critical thinking of their students. A study conducted by Asgharheidari and Tahriri (2015) also provided motivation for the questions provided in the questionnaire. Asgharheidari and Tahriri (2015) made use of a questionnaire with eight Likert-scale close-ended questions to explore Iranian foreign language teachers' ($n = 30$) attitudes towards critical thinking, its importance in their daily functions and their need for training in critical thinking. The integrated framework, discussed in the previous section, inspired by the aforementioned studies, thus informs the research questions and guides the interpretation of educators' perceptions regarding their own critical thinking abilities and their approaches to teaching these skills.

The questionnaire was reviewed and validated by a qualified statistician, who confirmed that the instrument effectively measures its intended purpose. This expert review reinforces construct validity, confirming that the questionnaire accurately reflects the theoretical constructs—such as understanding of critical thinking, and perceptions of teaching practices—intended to be measured. The questionnaire contained both closed-ended and open-ended questions and was developed based on a review of relevant literature (Saunders, Lewis & Thornhill, 2016:436–474). Although the questionnaire was self-designed, the subsequent expert validation and the structured Likert-type scale (ranging from strongly agree to strongly disagree) contribute to its reliability by standardizing responses and ensuring consistent measurement across participants.

4.1. Participants

Individuals who were invited to participate in the study comprised attendees of a workshop on critical thinking hosted by SAICA. The workshop had a total number of 34 attendees, of whom 15 were male and 19 were female. The majority of the attendees were involved in the teaching of chartered accountancy programmes offered at various SAICA-accredited universities throughout South Africa, and a small number of them were involved in the managerial functions of the accounting schools or departments of these SAICA-accredited universities. The attendees of the workshop represented the University of the Witwatersrand, the University of South Africa, the University of Johannesburg, Stellenbosch University, CA Connect, Nelson Mandela University, North-West University, the University of the Free State, Rhodes University, Varsity College, Monash University and the University of Pretoria. All 34 attendees of the critical thinking workshop were invited to participate in this study. Of the 34 attendees, 24 completed the questionnaire (representing a 70.58 % response rate). In this study, the sample was purposively adopted which entails that participants were deliberately chosen based on specific characteristics that aligned with the research objectives. The criteria for selection were that attendees of the workshop were primarily educators involved in teaching chartered accountancy programmes at SAICA-accredited universities across South Africa, as well as a smaller group with managerial roles in accounting departments. The sample selection was intended to ensure that the respondents had relevant knowledge and expertise related to critical thinking in the context of accounting education. However, the small sample size ($n = 24$) constitutes a limitation in terms of generalisability which entails that the findings may not fully represent the wider population of accounting educators in South Africa or globally but provide valuable insights into the perceptions and practices of accounting educators.

4.2. Data collection

A self-designed questionnaire was used to collect data in the study. This pencil-and-paper-based questionnaire was administered by the main researcher to participants at the critical thinking workshop and was primarily aimed at gaining insight into accounting educators' perceptions of their own critical thinking skills, their understanding of critical thinking and their ability to model and develop this vital skill in their students. The use of a structured four-point Likert-type scale (strongly agree, agree, disagree, strongly disagree) for the closed-ended questions ensured a standardised format that minimised subjective interpretation and contributed to consistent data collection. As stated earlier, after designing the questionnaires, it was thoroughly reviewed and validated by a qualified statistician in the College of Accounting Science, who confirmed that the instrument effectively measures its intended purpose. This review process further highlights the reliability of the tool by confirming that the items are clear, unambiguous, and consistently interpretable by all respondents. The questionnaire consisted of two sections, Part A and Part B. Part A of the questionnaire comprised seven closed-ended statements. Participants had to rate each statement on a four-point Likert-type scale, ranging from strongly agree (1), agree (2) and disagree (3) to strongly disagree (4). Part A of the questionnaire was mainly aimed at answering research question 1 in respect of accounting educators' perceptions of their own understanding of critical thinking and the development of critical thinking in students. The questions in this section were designed to gather accounting educators' basic knowledge of critical thinking. The aim was to establish a foundational understanding of critical thinking among the participants and provide insight into their readiness to incorporate critical thinking into their teaching practices.

Part B of the questionnaire comprised three open-ended questions. Participants could write their answers and comments regarding these questions in the spaces provided on the questionnaire. This section was designed to provide in depth insights on the critical thinking practices of the participants. Part B was aimed at exploring accounting educators' perceptions in relation to research questions 2 to 4, namely, their perceptions of the level of their own critical thinking skills; their perceptions of their current teaching practices and whether these practices promote critical thinking in their students; and their perceptions of their own ability to model critical thinking and effectively develop critical thinking in their students.

Prior to the commencement of the study, ethical clearance was obtained through the appropriate institutional procedures and processes of the relevant institution. All prospective participants received an e-mail invitation containing a participant information sheet that described the purpose of the study, the eligibility criteria and the nature of participation, as well as information on

withdrawal from the study, potential benefits and inconvenience of participation, the confidentiality of information, other ethical considerations and informed consent. In this information sheet, the prospective participants were informed that their information would be treated as confidential and that the recording of data would be treated with strict anonymity. The prospective participants were furthermore informed that their participation would be entirely voluntary and that they could withdraw from the study at any time without giving a reason. The prospective participants who were willing to partake in the voluntary study had to sign a hard-copy informed consent form. The completed hard-copy questionnaires were kept under lock and key in the office of the main researcher.

4.3. Data analysis

Data collected from the closed-ended Likert-style questions (part A) of the questionnaire were analysed using descriptive statistical analysis. This analysis was generally aimed at identifying and summarising the overall spread of the scores. Data collected from the open-ended questions (part B) of the questionnaire were analysed by means of a thematic analysis of the participants' responses to all the questions with the aim of organising and sorting the responses and identifying key phrases and concepts relevant to each question (Braun & Clarke, 2006:77–101). This was done by familiarisation with the data set, generating of initial codes, searching for themes, reviewing themes, defining and naming themes and producing of the final report. For this study, the research questions represented the themes of the study. The first author read and analysed the data to identify the initial codes and themes. Thereafter, the second author engaged with the first author to reach agreement on the coding and themes to assure a level of inter-rater reliability. According to Braun and Clarke (2006:79), "[t]hematic analysis is a method for identifying, analysing and reporting patterns (themes) within data".

5. Presentation of results

The findings are presented in the order of the research questions.

5.1. Research question 1: What are accounting educators' perceptions of their own understanding of critical thinking and the development of critical thinking in students?

Table 1 provides a summary of accounting educators' perceptions of their own understanding of critical thinking and the development of critical thinking in students, reflecting the number and percentage of responses for each of the seven statements.

From Table 1 it is clear that all 24 participants were of the opinion that they had a basic understanding of what critical thinking is, with 58.33 % strongly agreeing with this statement and 41.67 % agreeing with this statement. All 24 participants also indicated that they had an understanding of the importance and benefits of critical thinking, with 70.83 % strongly agreeing with this statement and 29.17 % agreeing with this statement.

From Table 1 it is also evident that the majority of the participants were of the opinion that they had a basic understanding of how critical thinking can be developed in students, with 75 % strongly agreeing with this statement and 20.83 % agreeing with this statement. Only one participant (4.17 %) indicated that he/she believed he/she did not have a basic understanding of how critical thinking can be developed in students. The majority of the participants also seemed to believe that they had a basic understanding of

Table 1
Accounting educators' perceptions of their own understanding of critical thinking ($n = 24$ participants).

Statement number	Statement	Strongly agree N (%)	Agree N (%)	Disagree N (%)	Strongly disagree N (%)
1	I have a basic understanding of what critical thinking is.	14 (58.33 %)	10 (41.67 %)	0 (0.00 %)	0 (0.00 %)
2	I have an understanding of the importance and benefits of critical thinking.	17 (70.83 %)	7 (29.17 %)	0 (0.00 %)	0 (0.00 %)
3	I have a basic understanding of how critical thinking can be developed in students.	5 (20.83 %)	18 (75.00 %)	1 (4.17 %)	0 (0.00 %)
4	I have a basic understanding of how critical thinking can be assessed/ measured in students.	5 (20.83 %)	18 (75.00 %)	1 (4.17 %)	0 (0.00 %)
5	I will be able to apply, at a basic level, principles of critical thinking development in my teaching practices.	5 (20.83 %)	19 (79.17 %)	0 (0.00 %)	0 (0.00 %)
6	I believe the SAICA workshop on critical thinking was valuable.	19 (79.17 %)	5 (20.83 %)	0 (0.00 %)	0 (0.00 %)
7	I believe I require further training and skills development specifically related to critical thinking teaching practices.	13 (54.17 %)	11 (45.83 %)	0 (0.00 %)	0 (0.00 %)

how critical thinking can be assessed/measured in students, with 75 % strongly agreeing with this statement and 20.83 % agreeing with this statement. Again, only one participant indicated that, in his/her view, he/she did not have a basic understanding of this aspect.

Table 1 shows that all 24 participants seemed to be comfortable applying the principles of critical thinking, at a basic level, in their teaching practices, with 20.83 % strongly agreeing with this statement and 79.17 % agreeing with this statement. All 24 participants also indicated that they believed the workshop on critical thinking was valuable, with 79.17 % strongly agreeing with this statement and 20.83 % agreeing with this statement. All 24 participants were of the opinion that they required further training and skills development specifically related to critical thinking teaching practices, with 54.17 % strongly agreeing with this statement and 45.83 % agreeing with this statement. Asgharheidari and Tahriri (2015) similarly found in their study as strong need from educators for training specifically in critical thinking.

The results reveal a clear gap between educators understanding of critical thinking and their ability to translate this knowledge into practical teaching strategies. While a significant proportion of participants indicated they have a basic understanding of critical thinking concepts and recognise its importance, minority of the participants feel very confident in their ability to apply these principles effectively in the classroom. This disconnect suggests that while educators may be equipped with foundational knowledge of critical thinking, they lack the pedagogical tools, strategies, and confidence needed to foster its development in students. Holmes, Wieman, and Bonn (2015) affirm that without targeted training that bridges this gap, educators may struggle to implement effective teaching practices that cultivate critical thinking skills. In the view of Larsson (2017), this issue can be practically resolved by facilitating focused professional development programs, practical applications, such as integrating critical thinking exercises into curricula, designing assessments to measure critical thinking, and employing active learning techniques to engage students in critical analysis and problem-solving.

Part B of the questionnaire contained three open-ended questions. The responses to these three questions are discussed below. This part of the questionnaire was aimed at answering research questions 2 to 4. The questions in this segment represent the themes, while the responses form the corresponding categories. The findings are discussed per research question.

5.2. Research question 2: What are accounting educators' perceptions of the level of their own critical thinking skills?

In the questionnaire, the participants were asked whether they were satisfied with the level of their own critical thinking skills and to explain why or why not. Twenty participants answered variations of *"no", "not yet"* and *"maybe"*, that it is a *"work-in-progress"* and that there is *"room for improvement [and] development"*. From these comments, it became evident that the majority of the participants were possibly not satisfied with their current level of critical thinking skills and that they believed there was a need for improvement and development, which would be a process.

Some of the responses included that "*there is always room for improvement [and] development"* and that *"one can never be satisfied with your level of soft skill development"*. It was also noted that *"you can never 'arrive' when busy with critical thinking skills. It is a process"*. One participant remarked: *"I think that this is part of a life-long learning process. It can also be developed [more] within certain areas of one's life. As you develop the skills [and] become aware of the ways in which it can impact one's life you want to develop them more."* Another participant noted as follows: *"I think we always overestimate our critical thinking."*

Four participants answered "yes" to this question. One participant commented as follows: *"Yes, [I] have spent time reflecting and developing with colleagues, including attending courses. But you can always learn more."* Another participant made the following comment: *"In my own subject yes. In general, I can greatly improve. But I do have an inquisitive mindset and generally don't take things at face value."* Another participant responded as follows: *"Yes. But not completely. I get to the objective truth of things by means of critical thinking."* From these comments it became evident that even those participants who answered "yes" to this question believed there was still room for improving one's critical thinking skills.

What also became evident from the responses to this question was that participants believed they required more training and practice in critical thinking skills. Responses included *"I need more pedagogical training on critical skills", "I feed that I have the ability to be a competent high-level thinker but that it will need to be practised more"* and *"I believe there is [a] need for more training"*.

The responses reveal that educators face significant challenges in integrating critical thinking into accounting curricula, as they must simultaneously teach and enhance their own critical thinking abilities. This finding is consistent with previous studies (e.g., Lee & Ha, 2015) that describe critical thinking as an evolving skill requiring continuous development and lifelong learning. Many participants acknowledged that critical thinking is a dynamic skill that requires development, as they describe it as a "work-in-progress" and aligning with lifelong learning principles. This dual role as an instructor and learner presents them with a unique challenge, as educators must actively refine their skills when guiding students through the same process. This challenge mirrors the insights offered by adult learning theories (Charungkaittikul & Henschke, 2018), which emphasise that educators must engage in ongoing reflective practice and professional growth to effectively facilitate learning. Even those confident in their abilities admitted room for improvement, which depicts that critical thinking mastery advances through practice, reflection, and professional growth. The results suggest that successfully integrating critical thinking into accounting curricula requires a mindset shift among educators, reinforcing the literature that advocates for educators to embrace their roles as co-learners in a shared journey of critical inquiry.

5.3. Research question 3: What are accounting educators' perceptions of their current teaching practices and whether these practices promote critical thinking in their students?

The participants were asked in the questionnaire whether they believed their current teaching practices promoted critical thinking

in their students and to explain why or why not. There were mixed responses to this question. Twenty participants gave variations of *"yes"*, *"to an extent"* and *"not enough"* answers to this question. The majority of the participants indicated that they believed critical thinking was promoted in their students through their current teaching practices in some way, but perhaps only *"to some extent"*, *"not … all the time"* and *"not at the level they need for the workplace"*. Some participants provided examples of teaching strategies and approaches that, in their opinion, promoted critical thinking. Comments in this regard included the following:

"Yes. We have an audit simulation that also addresses critical thinking."

"Yes. We use scenarios to introduce students to complex problems. They then need to be able to apply their knowledge to generate insights."

"Yes to some extent. The focus is on the 'why' and I steer away from only having a 'correct' answer."

"Yes, to some extent. The way that I assess requires students to think about the problem at hand. However, I can do more in the classroom to make sure students think about the logic, before explaining it to them."

It would, however, seem from the participants' responses that critical thinking development in students is a continuous process that requires time and effort. One participant noted: *"It takes conscious effort [and] planning. It also takes time to develop the material/approach to teach the skills."* Another participant remarked: *"Yes, we have designed our program[m]e around critical thinking, but [there is] still lots we can do."* Some participants indicated that critical thinking development is done *"[t]o a limited extent due to the pressure to get through the syllabus"*, *"[t]o a certain extent, but [it] require[s] more practice in the classroom"* and *"[t]o a limited exten[t]. Our current teaching practice focuses a lot on concepts and practice only after all concepts have been presented to students. Critical thinking is only coming through case study assessments"*.

It would also seem from the comments that many participants believed critical thinking was already embedded in their current teaching practices. Some of the comments in this regard were as follows:

"To a certain extent it is embedded in what we do. We need to bring it to the fore [and] focus more on it."

"From the subject (Auditing) certain pervasive skills/ethics does have elementary critical thinking embedded in it."

"To an extent it is embedded in teaching practices, as an example open ended questions are often asked to students but often times the student participation and interaction is lacking."

Four participants answered "no" to this question. The answers ranged from *"No"*, *"No not completely"* to *"No, it is a work-in-progress"*. Again, it became evident that participants believed their teaching practices could be improved on with the aim of effectively developing critical thinking in students. Participants pointed out issues that might hinder the effective implementation of critical thinking in teaching practices. Some of these issues include *"pressure to get through the syllabus"*, *"challenge[s] with online environment"*, *"student participation and interaction is lacking"* and *"a narrow or shallow understanding of critical thinking"*. Other participants noted that *"[s]tudents are taught theory instead of concepts"*, that the *"[f]ocus has largely been on transmission of knowledge to students and less on building the questioning mind of asking why"* and that *"[s]tudents are not given the opportunity to apply critical thing"*.

Findings from this section reveal mixed perspectives among accounting educators on whether their teaching practices effectively promote critical thinking. While many educators believe their strategies, such as simulations and problem-based assessments, encourage critical thinking to some extent, they acknowledge the need for more deliberate implementation and improvement. Challenges like syllabus pressures, limited student engagement, online teaching difficulties, and a focus on theoretical knowledge over practical application hinder progress. Some educators view critical thinking as partially embedded in their practices but recognise the need for more explicit integration. These observations align with the findings of Lee & Ha (2015) and Brown (2020) who report that while active learning methods can foster critical thinking, their effectiveness is often constrained by structural challenges such as overloaded curricula and limited student engagement. Moreover, studies on online education further emphasise that the transition to digital platforms necessitates targeted professional development and curriculum redesign to bridge the gap between theory and practice (Seale, 2020; Abedini et al., 2021). The findings stress the importance of professional development and curriculum redesign to better equip educators to foster critical thinking in accounting education.

5.4. Research question 4: What are accounting educators' perceptions of their ability to model critical thinking and effectively develop critical thinking in their students?

In the questionnaire, the participants were asked whether they believed they were able to model critical thinking and effectively develop critical thinking in their students and to explain why or why not. From the comments it would seem that the majority the participants were either of the opinion that they were indeed able to model critical thinking and effectively develop critical thinking in their students or believed that they were able to model critical thinking and effectively develop critical thinking in their students to some extent. Twenty participants answered variations of *"yes"*, *"to a limited extent"*, *"partly"* and *"there is room for improvement"*. Comments included the following:

"Yes, but there is room for improvement. I started reflecting on my teaching in the last few years and started comme[n]ting on it in my lectures."

"As my understanding of critical thinking is possibly immature I may only model what I understand. I am happy that I can grow my understanding and therefore can model that to my students."

Many participants were of the opinion that they would be able to model and teach critical thinking effectively, but that proper planning and further training or tools were needed to equip them to do so. Comments in this regard included the following:

"Yes with good planning. It is quite possible to build 'why' questions in subject areas."

"Yes, but [we] need the tools to understand how to do it."

Some participants noted that they, as educators, were still learning themselves and that developing their own critical thinking skills, as well as the ability to model critical thinking, was a process that takes time. These comments included the following:

"Partly. I am still learning myself!"

"Still more development required in this area."

"Yes, to a limited extent as it takes time to develop the skills oneself and then to keep modelling the skills so that students start to realise the value [and] take it on board."

To some extent. By not being afraid to expose my 'imperfections' in my own thinking skills."

A number of participants noted that the critical thinking workshop provided them with some tools and the confidence to guide them in this process, while others still identified a need to further upskill themselves, particularly with regard to the teaching methods needed to effectively develop critical thinking in students. Some participants commented as follows:

"Yes, more so after today's workshop. But I will have to upskill myself on the variety of methods available and need to make these subject specific."

"Yes. I really believe I have now been equipped with the tools and confidence to do so."

"Yes I am able, especially using some of the tools given today. However, there never seems to be enough time to really do everything we want to do in class. Academics are really overloaded."

Again, participants noted that critical thinking, as well as the modelling of critical thinking by educators, *"is not always done explicitly. This is something that we can improve"*. Two participants responded as follows:

"No. As a CA *we are not focused on critical thinking. One just feel[s] unsure."*

"Not really. I think we need a deeper understanding of the fundamental principles."

Two participants did not provide answers to this question.

Findings in this section reveal that many accounting educators feel confident in their ability to model and promote critical thinking to some extent; they also acknowledge the need for further development, support, and tools to enhance their effectiveness. Practical insights suggest the importance of professional development, resource allocation, and proper planning to integrate critical thinking into curricula. Institutions should foster a supportive teaching environment, promote reflective practices, and address barriers such as syllabus pressure and online teaching challenges. Tailored training, collaborative opportunities, and curriculum redesigns—focused on depth rather than breadth—can help educators develop and apply critical thinking skills effectively. Boso and Gross (2015) affirm that while educators may feel competent in modelling critical thinking, they consistently report the need for ongoing professional development and institutional support to overcome structural challenges. However, Terblanche et al. (2023) emphasise that focusing on depth over breadth and fostering reflective practice in curriculum design are crucial for effectively integrating critical thinking into academic programmes.

6. Discussion of results

The findings indicate that participants had a generally positive perception of their understanding of critical thinking and their ability to foster these skills in students. However, their acknowledgment of a need for further development suggests a recognition of professional growth as a continuous process, consistent with principles of self-directed learning (Knowles, 1980). This aligns with Zhang et al. (2020:483–493) and Stedman and Adams (2012:9–14), who found that educators often seek additional training to improve their teaching effectiveness. The proactive attitude of participants—manifested in their willingness to attend workshops and exchange ideas with colleagues—reflects key elements of adult learning theories, particularly the emphasis on self-directed and experiential learning.

However, the lack of formal training in critical thinking instruction, as highlighted by Adams (2012), remains a critical barrier. This gap may partly explain participants' belief that their current practices promote critical thinking "to some extent," yet leave room for improvement. It is plausible that without structured training, educators might inadvertently overestimate the effectiveness of their methods, a phenomenon also noted by Stedman and Adams (2012:12).

The findings underscore the relevance of andragogical principles in understanding how educators approach their professional development. Andragogy posits that adults learn best when they perceive the relevance of new knowledge to their personal or professional goals (Knowles, 1980). Moreover, the participants' dual role as both educators and learners highlights the cyclical nature of adult learning. By seeking training opportunities and practical tools, they embody the notion that teaching and learning are mutually reinforcing processes. This perspective echoes findings from Zhang et al. (2020), who emphasize the importance of experiential learning in professional development.

It is therefore imperative for HEIs and, specifically, accounting schools or departments at SAICA-accredited universities to invest in continuous critical thinking training and skills development workshops. Accounting educators should also take responsibility for their own pedagogical training and development in critical thinking through continuous professional development (CPD). All participants indicated that they believed the SAICA workshop on critical thinking was valuable. Perhaps similar workshops could be presented in the future by SAICA or other professional bodies to aid educators in their endeavour to upskill themselves in critical thinking pedagogies.

The findings indicate that the majority of the accounting educators who participated in this study seemed to believe that their current teaching practices were promoting critical thinking in their students, at least in some way or to a limited extent. Participants, however, believed their teaching practices could be improved on with the aim of effectively developing critical thinking in students. The use of audit simulations, case study assessments and complex problems were specifically noted as methods that were used to develop critical thinking in students. Many participants were of the opinion that critical thinking was already embedded in current teaching practices to some extent. The findings indicate that participants viewed critical thinking development in students as a continuous process that requires time and effort.

Another noteworthy matter raised by participants was that of possible hindrances to the effective integration of critical thinking into teaching practices. These included a full syllabi; challenges with online environments; a lack of student participation and interaction; and a focus on theory. The findings indicate that the majority of the participants were either of the opinion that they were, indeed, able to model critical thinking and effectively develop critical thinking in their students or believed that they were able to model critical thinking and effectively develop critical thinking in their students to some extent.

7. Conclusion

The challenges that accounting educators face in respect of integrating critical thinking into curricula were investigated in this study. While participants expressed positive perceptions of their understanding of critical thinking and its importance, they also recognised the need for further development and improvement. The findings highlight the demand for further training and skills development in critical thinking pedagogies among accounting educators, pointing to the importance of adult learning theories and andragogy. Educators should adopt self-directed learning approaches to enhance their critical thinking skills and teaching practices. Participants emphasised the necessity of continuous professional development and workshops tailored to adult learners, enabling them to take ownership of their professional growth. Despite efforts to promote critical thinking through methods such as audit simulations and case studies, participants acknowledged obstacles such as a full syllabus, online learning challenges and a lack of student participation. The study presents both the opportunities and challenges inherent in integrating critical thinking into curricula. While participants demonstrated a solid theoretical understanding of critical thinking, they acknowledged the need for further training and development in practical application and pedagogical strategies. The findings emphasize the importance of adult learning principles and targeted professional development to bridge this gap, enabling educators to adopt innovative approaches and better model critical thinking. Regarding the limitations of the study, the small sample size may affect the generalisability of the findings. Small sample sizes were similarly noted in the studies conducted by Lloyd and Bahr (2010) and Asgharheidari and Tahriri (2015), as noted in Section 3 above. These studies did, despite the smaller sample sizes, provide valuable insights into the perceptions of educators regarding critical thinking in higher education. It should also be noted that a further limitation of this study could be the possible effect of the critical thinking workshop that participants attended, on their responses to the questionnaire. Future research could explore critical thinking integration in diverse educational contexts and assess the long-term impact of tailored training programs on teaching practices and student outcomes.

8. Recommendations

The recommendations of this study are as follows:

Enhance training and development programmes: HEIs should mandate a minimum of 20 hours per academic year of targeted training for accounting educators on integrating critical thinking into their teaching. This training should include workshops led by experts in pedagogical strategies for critical thinking and a module specifically addressing the application of critical thinking in accounting contexts. Institutions such as the University of South Africa should establish formal Continuing Professional Development (CPD) frameworks that include certification in critical thinking instruction. Additionally, SAICA should schedule quarterly seminars to provide regular updates on innovative methodologies and best practices.

Promote practical learning experiences: Accounting programmes should restructure course modules to include at least two practical sessions per semester that focus on real-world applications of critical thinking. This can be achieved through the implementation of audit simulations, detailed case study assessments with predefined outcomes, and complex problem-solving exercises tailored to current financial challenges. These methods will enable students to systematically analyse financial data, evaluate diverse sources of evidence, and make informed decisions under realistic scenarios.

Address curriculum and syllabus constraints: Institutions and professional bodies should form a curriculum review committee dedicated to integrating critical thinking skills into the accounting syllabus. This committee should evaluate and streamline existing courses to reduce redundancy and allocate at least 15 % of total course content to interactive and engaging methods that promote critical thinking. Furthermore, educators should be granted curriculum flexibility by providing a 'teaching innovation fund' to experiment with and implement alternative pedagogical approaches.

Improve technology and online learning platforms: Institutions should invest in advanced online learning platforms within the next academic year that support interactive features. These platforms must include tools for virtual simulations, interactive case study modules, and integrated discussion forums to facilitate collaborative critical analysis. Regular training sessions on these technologies should be provided to both educators and students to maximize engagement and usability.

Foster a culture of critical thinking: Institutions should launch a campus-wide initiative that promotes critical thinking as a core value. This initiative could include monthly debate sessions, reflective journals incorporated into course assessments, and a 'Critical Thinkers' showcase event where students and staff present innovative ideas. A formal recognition program should be established to reward both educators and students who demonstrate exceptional critical thinking skills.

Support and incentivise educators: Institutions should implement a performance-based incentive programme for educators who successfully integrate critical thinking into their teaching practices. This could involve grant opportunities for professional development, funding for collaborative research projects on innovative teaching methods, and annual awards recognising excellence in critical thinking instruction. Such measures should be clearly communicated and integrated into institutional policies within the next academic cycle.

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Ethical guidelines

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CRediT authorship contribution statement

Alet Terblanche: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Annelien Andriana van Rooyen:** Writing – original draft, Visualization, Validation, Resources, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation. **Prince Chukwuneme Enwereji:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Investigation, Formal analysis.

Declaration of competing interest

None.

Data availability

Data will be made available on request.

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