ASPIRANT SOUTH AFRICAN ACCOUNTANTS' PERCEPTIONS OF THE USEFULNESS OF A RESEARCH PROJECT AS A LEARNING TOOL TO DEVELOP PROFESSIONAL COMPETENCY

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ABSTRACT

The current business climate has been described as being volatile, uncertain, complex, and ambiguous (VUCA). This new world paradigm requires new skill sets. Professional bodies are responding to changes created by this new-world paradigm that university graduates will enter with revised competency frameworks that focus on business, digital, relational, and decision-making acumen (SAICA 2021b) and include both professional (i.e., non-technical) and technical skills. Historically, accounting departments that trained chartered accountants focused on developing technical competencies in students and did not have a tradition of research. Accounting departments are investigating various teaching initiatives or tools to help develop non-technical skills in response to the changing work environment and to comply with the updated Competency Framework. Research projects, where students must formulate and investigate an unstructured question and present their findings, are used globally as a tool to develop professional competencies; however, there is limited application of research projects in the training of aspirant chartered accountants in South Africa. The 2020 cohort of postgraduate accounting students at a South African university provided a unique opportunity to investigate students' perceptions of professional skills competency development through a group research project as very few had prior experience in conducting research. This study documents students' perceptions of the use of the research project as a learning tool to develop specific professional competencies not traditionally taught and assessed. Although students found the research challenging, they believed that it supported the professional competency development required of future graduates that was not previously addressed appropriately.

Keywords: accounting education, professional skills, research project

INTRODUCTION

Today's accounting graduates are entering a world of work that is rapidly changing and that

requires them to have new skills and competencies to be competitive in a technology-driven society. Accounting professional bodies globally are adapting their education and training models and competency frameworks in response to these changes, including, among others, the South African Institute of Chartered Accountants (SAICA) and the Certified Institute of Management Accountants (CIMA). Both professional bodies have created revised competency frameworks, which, although unique, are broadly based on the same themes of professional values and attitudes, as well as business, digital, relational, and decision-making acumen (CIMA 2014; SAICA 2021b). These changes have not negated the need for technical skills, but have increasingly placed the emphasis on developing professional, non-technical skills (Barac 2009; Crawford, Helliar, and Monk 2011; Low et al. 2016; García and De los Ríos 2021; SAICA 2021b). Professional skills such as an understanding of ethics, lifelong learning, analytical and critical thinking skills, and communication and networking abilities to work effectively in a collaborative manner have come to the fore (Barac 2009; Crawford et al. 2011; García and De los Ríos 2021; SAICA 2021b).

The education and training models in South Africa are designed to enable aspirant chartered accountants to achieve the required competencies set out in SAICA's (2021b) Competency Framework. The pathway (or process) includes undergraduate and postgraduate study specialising in accounting sciences, a three-year practical traineeship, and passing two professional examinations. As the professional skills (also known as "non-technical", "pervasive", or "soft" skills) in SAICA's (2021b) Competency Framework in South Africa have been significantly revised for the future chartered accountant, student learning throughout this process needs to be scaffolded with more opportunities being created for aspirant chartered accountants to practise these newly required professional skills (García and De los Ríos 2021). Training offices, which are responsible for the practical element of the training, have criticised universities of traditionally being too focused on technical content and leaving the majority of the professional skills training up to them (Barac 2009). This changing landscape is encouraging educators to try different pedagogical approaches to developing professional skills.

Postgraduate study for aspirant chartered accountants takes the form of a diploma course (without a research component) at most major universities in South Africa, with honours degree courses (which include a research component) being limited to the strongest (10 to 20) academic students. However, all the registered postgraduate students at Stellenbosch University for the 2020 academic year were required to complete a research project for the first time. These students had previously not been required to complete any large group research projects during their undergraduate studies, and as a consequence were confronted with new skills that they were required to develop. Students were, for the first time, required to, *inter alia*, decide on a

research problem, develop and justify a methodology, execute the research, and communicate the findings. SAICA's previous Competency Framework had a significant focus on technical skills, and it did not require students to take part in any form of research at an advanced level. The traditional underutilisation of research projects, as a teaching tool to train aspirant chartered accountants and the large number of participants, presented a unique opportunity to investigate whether the inclusion of a group research project could assist the students in attaining some of the professional competencies in SAICA's (2021b) Competency Framework, which they were previously not exposed to.

The following section explores the use of a research project in developing professional competencies and assists in determining which competencies are developed. These competencies, as set out in the Researcher Development Framework (RDF) (Vitae®© 2010) and SAICA's (2021b) Competency Framework, are discussed thereafter. Finally, student perceptions of the use of the research project in developing the identified competencies are analysed.

LITERATURE REVIEW

Research project

Research and creative enquiry at university are widely agreed to be a pedagogical approach to teaching and learning (Beckman and Hensel 2009; Parker 2018). However, academics do not agree on a single definition thereof. This is because there are several factors that impact research project learning opportunities, including, among others, objective, scope, academic level, originality, contribution, and discipline (Beckman and Hensel 2009; Parker 2018). To frame this study, the Council on Undergraduate Research's (CUR 2017) definition of a research project as "a mentored investigation or creative inquiry conducted by undergraduates that seeks to make a scholarly or artistic contribution to knowledge" was considered. The research project undertaken by the accounting students was framed by research ideas provided by their supervisors. Students then needed to engage in the research process, which included deciding on a research problem, developing and justifying a methodology, executing the research, and communicating the findings, all under supervision. These were activities they had not performed as part of their previous undergraduate studies. These activities align with the school of thought proposed by the CUR's (2017) definition and provides the pedagogical basis for its consideration as a learning intervention.

Research projects in developing competencies

Although research projects (or assignments) are not a requirement for postgraduate accounting

education in South Africa, they have been utilised extensively at both undergraduate and postgraduate levels for social sciences studies, such as economics, business, sciences, and psychology globally (Parker 2012). Extensive research has been conducted regarding the generic skills developed from incorporating a research project into undergraduate study. These generic skills include independent thinking, problem-solving skills, inquiry and analysis, critical thinking, reading, communication, and teamwork (Petrella and Jung 2008; Lopatto 2008; 2010; Parker 2012; Barac and Du Plessis 2019; Seifan, Lal, and Berenjian 2022). Barac and Du Plessis (2019) recommend that research projects should be incorporated as learning opportunities to teach accounting students professional skills that include, *inter alia*, critical thinking, problem solving, and building arguments. Irrespective of these skills being developed, only a few of the accredited universities include research projects in their curriculum to develop professional skills (Barac and Du Plessis 2019). It could be argued that this could be because conducting research is not a skillset of accounting academia with limited accredited research being published by chartered accountants in South Africa Steenkamp (2009). Research only recently gaining prominence. Steenkamp (2009) cited a lack of exposure to research as a significant limitation. This lack of understanding of the benefits of research could result in research projects being under-utilised.

Besides the competencies developed researchers investigated other positive consequences of using research projects as a learning tool. Lopatto (2008; 2010) and Petrella and Jung (2008) investigated the benefits of research projects. Parker (2018) conducted research on the impact of undergraduate research on student achievement, while Seifan et al. (2022) considered the impact of undergraduate research on students' learning and engagement.

A criticism raised of this research (within the body of research relating to the specific professional skills acquired through undergraduate research projects) is that the competencies (including professional skills) considered in the research are often based on the educator's judgement (Parker 2018). Furthermore, the research often focuses on research in the study of the natural sciences, with limited application to the social sciences (Parker 2018). To address the criticism and to ensure the completeness of the professional skills investigated in this research study, the authors considered possible frameworks that sets out a complete list of competencies that students can be exposed to while taking part in a research project.

Researcher development competency frameworks

"Researcher development" is the process that academics and students undergo to develop into proficient researchers over time (Fazal and Chakravarty 2021). Several frameworks have been developed to assist researchers in identifying and measuring whether they have attained the

competencies required as they progress to becoming proficient researchers, such as Evans' Conceptual Framework of Researcher Development (Fazal and Chakravarty 2021), the RDF (Vitae®© 2010), the Research Skill Development Framework (Fazal and Chakravarty 2021), and the Researcher Development Skills Framework (University of Canberra n.d.).

The RDF (Vitae®© 2010) was selected to be used in this research study for two reasons. Firstly, it is internationally recognised, it is the industry standard in the United Kingdom for the development of researchers, and it has a good track record at several universities as an effective and comprehensive tool to support competency development in researchers (University of Edinburgh n.d.; Nath, Jones, and Viney 2021). Secondly, it was initially developed from empirical data collected through interviews with "excellent" and "experienced" researchers; thus expanding the scope of the skills included in the framework. Although the purpose of the RDF is primarily to guide postgraduate researchers and academics through the stages of research skill requirements to becoming a proficient researcher, it serves as a complete frame of reference to identify professional skills developed through exposure to research over time. The RDF is divided into four broad domains – knowledge and intellectual abilities, personal effectiveness, research governance and organisation, and engagement influence and impact – which are defined in more detailed skills (Vitae®© 2010). This detail articulation of the skills allowed the authors to consider the comprehensiveness of the skills required by SAICA's (2021b) Competency Framework. The SAICA's (2021b) Competency Framework grouped into the following areas in relation to professional skills: ethical values and attributes, engagement in lifelong learning, consideration of corporate citizenship, digital acumen, relational acumen, decision-making acumen, business acumen, and integrated thinking. The authors synthesised and integrated the two frameworks into one framework to support the idea that research projects can be used as an effective tool to teach professional skills to aspirant chartered accountants in South Africa.

Competencies that are relevant to aspirant chartered accountants

The mapping of the two frameworks showed that not all of the competencies in the RDF (Vitae®© 2010) could be mapped to the detailed competencies in SAICA's (2021b) Competency Framework. This was because of the specialised nature of certain professional skills required to conduct research at more experienced levels. Moreover, not all the research competencies of RDF (Vitae®© 2010) were necessary in a professional environment. There were, however, several areas of overlap between the two frameworks. The most notable of these areas can be aggregated to skills that relate to communication, project management, independence, collaboration and teamwork, self-development and motivation, ethics and legal

considerations, limited information technology (IT) acumen, and critical thinking skills. This confirmed all the skill areas highlighted in the literature by, among others, Petrella and Jung (2008), Lopatto (2008; 2010), Parker (2012), Barac and Du Plessis (2019), and Seifan et al. (2022) but also provides further detail explanations to these areas. The review of literature also highlights the importance of student attitudes to research projects as key to developing competencies (Papanastasiou 2005).

Student attitudes to research

Student attitudes to the subject matter and the learning opportunities directly impact their learning and academic performance across fields and all levels of study (Gal and Ginsburg 1994; Papanastasiou 2005; Reed, Drijvers, and Kirschner 2010; Hemmings, Grootenboer, and Kay 2011; Díez-Palomar et al. 2020). Specifically in the context of academic research at university, Papanastasiou (2005) used existing literature to develop a scale to measure attitudes to research, which breaks student attitudes to research into five meaningful factors: usefulness of the research to one's professional life, level of research anxiety, positive attitudes towards the research, relevancy to academic and non-professional lives, and the difficulty of the research.

RESEARCH OBJETIVE AND METHODOLOGY

Research objective and contributions

The objective of this research was to investigate the 2020 cohort of postgraduate accounting students' perceptions of the professional competencies developed during their first experience taking part in a large academic research project, giving consideration to the competencies expected to be developed by a research project as a teaching tool *per se*, as well as the competencies required by an aspirant chartered accountant entering the South African business world.

The following research questions could be asked for each of the competencies.[1] While taking part in the research project:

1)   Were the students given the opportunity to develop the professional competencies?
2)   Within the broad category of professional competences, how did they engage in that competency development opportunity during the execution of the research project?
3)   Do they believe they were able to develop the applicable competencies?

Literature highlighted, in order to understand the students' perceptions, it is necessary to also

understand the impact that student attitudes to research have on their learning experience and competency development, which raised a further research question: *What were the students' attitudes to the research project, and would they recommend the research project to future students?*

This study is unique in that it was the first time that many of the students engaged in research, where they were required to develop their own research questions and appropriate methodology, solve an unstructured problem, and present their findings in one cohesive, properly argued research assignment. Postgraduate research assignments in accountancy traditionally consist of a small number of students. This study aggregates responses from a large population of students. The results of this study assist in obtaining a better understanding of the effectiveness of a group research project in developing the competencies of aspiring professional accountants. As this type of learning initiative is not traditionally used to train aspirant chartered accountants in South Africa, if found to be an effective learning initiative, it can inform future research project learning initiatives and changes to pedagogical approaches required by accounting educators as the accountancy profession moves closer to the Fourth Industrial Revolution (4IR) and non-technical competencies become more important and technical skills are replicable.

Research design and data collection and analysis

To achieve the research objectives, the researchers conducted empirical research to better understand, students previous exposure to academic research, their attitudes to research, and finally, the competencies they perceived to have developed through the use of a questionnaire designed based on a review of literature, the RDF (Vitae®© 2010) and SAICA's (2021b) Competency Framework.

Data collection

The questionnaire was structured in a similar manner and sequence. A questionnaire, the primary data-collection tool, has become accepted practice by researchers such as Papanastasiou (2005), Lopatto (2010), Rudman and Terblanche (2011), Hiralaal (2012), Hardway and Stroud (2014), and Sexton (2019) to gather data about student perceptions and experiences in tertiary education.

The use of RDF (Vitae®© 2010) and SAICA's (2021b) Competency Framework was informed by prior literature on research studies as a learning tool and the professional competencies required by aspirant chartered accountants. These two frameworks were synthesised into a single questionnaire, which eliminated areas of duplication and covered

questions that focused on each competency:

- Self-development and motivation;
- Ethics and legal considerations;
- Independence and project management;
- Teamwork and collaboration;
- Communication skills;
- Critical thinking;
- Problem solving;
- Professional judgement;
- IT acumen; and
- Use of resources.

The questionnaire included numerous closed-ended questions that relied on Likert scales and "yes" or "no" response mechanisms. Further qualitative data were obtained from open-ended comment questions, which were included throughout the questionnaire where individualised feedback was considered appropriate. The researchers viewed qualitative feedback as an important mechanism to obtain a deeper understanding of the students' perceptions.

The questionnaire was reviewed by experienced and knowledgeable lecturing staff who have supervision experience. It was subjected to institutional ethical clearance and obtained institutional permission. The questionnaire was reviewed at the departmental and institutional levels in this process. The questionnaire was distributed to all students registered for the Bachelor of Accounting (BAcc) Honours course in 2020 to request voluntary participation in the study.

Data analysis

The data from the questionnaires were transferred onto a Microsoft Excel where unusual responses were removed and thereafter analysed with Statistica software. Statements with a "yes" or "no" option were tallied and analysed in relation to the group as a whole. Statements where data were captured in the form of a Likert scale, with 1 being "not at all" and 5 being "definitely", were collated, the mean calculated, and the statistical impact assessed using the standard deviation (SD). As the data were in the form of Likert scale responses and thus ordinal, the data may not necessarily be normally distributed.

Content analysis was performed on the responses to the open-ended questions in Microsoft Excel. Where recurring themes emerged, they were included in the appropriate research finding.

The students' perceptions of the research project, as well as the findings of the various professional competencies, were assessed against the literature. Based on the findings, recommendations are made about the use of research projects in future learning opportunities. Since not all student responses or perceptions were pedagogically sound, not all student recommendations could be considered.

FINDINGS

The questionnaire was distributed to 557 students and 152 useful responses were received, resulting in a 27.2 per cent response rate. Considering the exploratory nature of the study and findings by Fosnacht, Howe, and Peck (2013) on the impact of response rates on the quality of survey findings, the response rate is considered appropriate. Comparatively, the response rate is also higher than that of Sahd and Rudman's (2020), which also had a large population.

An analysis of the feedback obtained from the students is set out in the sub-sections that follow. Firstly, based on their prior exposure to research projects; secondly, on their attitude towards the research project using Papanastasiou's (2005) attitudes to research scale; thirdly, their responses to each professional competency; and finally, the obstacles and recommendations regarding the project.

Exposure to large-scale research projects

The students were asked to share their prior exposure to a research project. Overall, Table 1, which presents the students' responses to "yes/no" questions, indicates that around 17 per cent of the participants had been exposed to some sort of large-scale research project. However, when further consideration is given to the key elements within the research process (see Table 1), it shows that exposure to a project involving a systematic research process with a complex methodology is approximately 10 per cent. The authors surmise that the reason for this is difference is that in the BAcc undergraduate course, students are required to conduct research assignments in the form of longer essays.

Table 1: Exposure to large-scale research projects

Statement	Mean
Have you had prior exposure to a large-scale research project?	17%
In your other courses while at university, have you been required to:	
• conduct a broad literature review?	10%
• formulate your own research objective or problem statement?	9%
• develop your own methodology to solve an unstructured problem?	10%
• execute a large research project?	15%
• make conclusions and recommendations?	53%
• present your own opinion?	45%

A large portion of the students stated that they have had exposure to making recommendations (54%) and presenting their opinions (43%). However, the narrative feedback

showed this was often not in relation to a research assignment but rather to answering discussion questions during assessments. This is particularly true for subjects such as management accounting and taxation. The thematic analysis of the qualitative feedback showed that students who had research experience had mostly obtained it from school, other non-accounting degree programmes, or other universities. The only students who had consistent exposure to research projects were the Bachelor of Accounting and Law (BAccLLB) students, who completed an undergraduate law and accounting degree simultaneously, who had research exposure from their law studies in which they were assessed through written assignments. These students represent a small portion of the students in the 2020 cohort. These findings support those of Barac and Du Plessis (2019) and Steenkamp (2009) that most chartered accountants in South Africa have limited or no exposure to large research projects in their studies. The higher SD's indicate varied responses.

Attitude to research

Despite this limited prior exposure to research, the students had a positive learning experience with 76 per cent of them recommending that it be included in future academic programmes. Students' considerations of their attitudes to the research project, within the context of the five meaningful factors in the attitude to research scale (Papanastasiou 2005), are represented in Table 2, where student feedback is in the form of a Likert scale, where 5 represented "definitely".

Table 2: Attitude to research

Statement	Mean	SD
Usefulness of the research to your professional life		
Research exposed me to competencies that I had not yet been exposed to that I believe will be useful for my career	3.8	1.095
The project created an opportunity for me to be creative that was not within the boundaries of the prescribed text by SAICA for the Initial Test of Competence	3.4	1.337
Level of research anxiety		
When I heard about the required research component, I felt anxious	3.5	1.314
I felt insecure when analysing the results	2.9	1.221
Positive attitudes to the research		
When I heard about the required research component, I felt excited	2.4	1.348
I enjoyed the project	3.3	1.222
I found the research process interesting	3.6	1.191

Statement	Mean	SD
Usefulness of the research to your professional life		
Relevance to academic and non-professional life		
Research-oriented thinking plays an important role in my daily life and I never realised it	3.3	1.173
After completing the required research component, I think that research should be taught to all BAcc / BAccHons sudents	3.3	1.376
I would want to register for a master's degree	2.4	1.491
Difficulty of the research		
Research is complex	4.1	0.914
I found if difficult to understand the concepts of research	2.6	1.196

Accounting students are known for being focused on assessment (including professional examination), rather than learning and competency development (Parsons, Davidowitz, and Maughan 2020). The students felt that the research project had exposed them to competencies that they would need in their future professional lives (mean 3.8), which confirms that research as part of university study is relevant to multiple career paths of graduates (Murtonen et al. 2008). It also creates an opportunity for creative thinking outside the technical boundaries of preparation for technical professional examinations (mean 3.4). This implies that the research project creates opportunities for broader competency development.

Student anxiety in the completion of research projects as a learning tool is well documented and, although challenging, it can be scaffolded to support student success (Papanastasiou 2005). This research found that many students experienced anxiety in completing the research project, with a mean of 3.5; however, the SD of 1.3 suggests varied responses between students. Narrative feedback reflected the students' frustration as they felt unsure and challenged because they could not master the research quickly enough. The students acknowledged that research is complex (with a mean of 4.1), but they believed it exposed them to new competencies and forced them to persist. The question does arise whether the anxiety is related to the research process, the fact that it was a new project that students felt uncertain about, or whether the time spent on the research project increased their anxiety about the BAccHons course workload. These questions are answered in the following sections.

Although many students were not excited about the project (mean 2.4), they enjoyed the project and found it interesting (means above 3.3). Considering all these attitudes, it is positive to note that the students found the project to be relevant to their daily lives and would recommend its use to future cohorts (mean 3.3). This supports the finding that 76 per cent of the students would recommend the continued use of the project.

The narrative feedback indicated that the students would have had a better attitude to the research if the layout and timing of the research project were amended. Many students found the timing challenging and experienced tension between class attendance and research, which

confirmed Lopatto's (2010) findings. Some students felt that they did not have clear guidance on what they had to do and recommended more guidance in the process. In the authors' view, this is understandable, given the structured and rigid accountancy curriculum, the way professional subjects are assessed, and current teaching practices. Key new competencies included in SAICA's (2021b) Competency Framework relate to, *inter alia*, dealing with uncertainty and unstructured problem solving. This supports the notion that research projects can be used to address the deficiency of rigid teaching practices. Most of the student responses in this sub-section had an SD of above 1, which indicated varied responses.

Self-development and motivation

Teamwork and self-determination are key competencies in any audit. The students were required to consider their own self-development and motivation, as well as their teams' motivation in engaging with the research project. Table 3, which presents the students' feedback using a Likert scale, where 5 meant "definitely", indicates that the students engaged in the learning process, with students personally reflecting and adapting at different stages of the research process. The students were less engaged in the process when considering the group elements of the project, with lower mean scores. This highlights the need for a greater focus on creating a culture of group work. Most of the student responses in this sub-section had an SD above 1, which indicated varied responses.

Table 3: Self-development and motivation

Statement	Mean	SD
Individual		
I fully engaged in the learning opportunity and in learning new things	3.8	1.121
I continued and persisted with the project even when I felt demotivated and confused	4.2	0.928
After the research contact session in January, I reflected on the skills that I have and those that are required to complete the research module and considered how I would obtain the necessary skills	3.3	1.218
After submission of each of the elements of the project, I considered my personal as well as group feedback and how to improve my abilities as researcher	3.6	1.160
In the execution of the project, I adapted my approach and behaviour with feedback received, as well as unexpected findings in the process	4.0	0.834
I sought assistance whet I got confused	3.8	1.283
Group members		
After submission of each to the elements of the project, I considered my personal as well as group feedback and how to improve our abilities as researchers	3.2	1.150
Throughout the project, I evacuated the skills of my group and encouraged them to develop	2.9	1.110

Individually, students fully engaged (mean 3.8) in the learning opportunity and were motivated to continue despite feeling out of their depth or demotivated (mean 4.2). Many students

reflected (to a limited degree) on the skills learned and those required at key points in their research process (means 3.3 and 3.6), changed their behaviour based on feedback or unexpected findings (mean 4.0), and sought help when needed (mean 3.8). These findings support the skills of adaptability and lifelong learning as well. These levels of self-development and motivation align with the benefits of positive student attitudes to the research project overall, despite their anxiety to complete the research project (see Table 2) (Papanastasiou 2005; Murtonen et al. 2008). Students' responses to key skills learned through the project highlighted perseverance and self-motivation to "*get over issues*" as skills growth, which supports Seifan et al.'s (2022) findings. It is interesting to note that within the group context, there was less engagement in the development of the research skills of the group, with lower means (2.9 and 3.2) than for the individual questions. Despite these lower means, specific narrative responses regarding group development emphasised that teamwork was a key skill learned. In the authors' view, this could be because it was a new skill or due to poorly or underdeveloped skills.

Ethics and legal considerations

Ethics and legal considerations are important to the world of work of the chartered accountant in South Africa (Nathan 2015) and in research. Much of an accountant's work focuses on compliance. Although South African accounting students' ethical framework is often set at university around the Code of Professional Conduct (CPC) (SAICA 2021a), considering ethical research concepts and practices enable them to broaden this frame of reference. The students were required to consider the ethical considerations (such as privacy, confidentiality, etc.) around the research project and apply for ethical approval for their research projects. They also had to comply with university regulations and acceptable research practices (such as plagiarism, copyright, etc.).

Table 4: Ethical and legal considerations in the project

Statement	Mean	SD
Ethical considerations		
Ethics was *not* relevant in the project	1.7	1.083
My personal ethics impacted the way that I approached the project	4.2	1.080
I considered the personal ethics of the other group members	4.0	1.077
I behaved ethically in the execution of the project (in terms of plagiarism, etc.)	4.8	0.561
I considered the five fundamental principles in the CPC when engaging in the project	3.2	1.322
I considered the impact of the project on the organisations/people subject to the research	3.3	1.236
I considered the confidentiality impact of the project	3.5	1.171
Legal considerations		
I considered the legal implications of the project (in terms of copyright, privacy, etc.)	3.7	1.286

Statement	Mean	SD
Corporate citizenship and real-world application		
I considered where the research is positioned in the South African and international context as a corporate citizen	3.5	1.301
The project helped me think abouth the real-world implications of the project	3.8	1.156
The research project helped me see the real-world implications of the BAccHons degree	3.5	1.215

Using a five-point-Likert scale, where 5 represented "definitely", Table 4 presents the students' views about ethics and compliance with rules and regulations. Even though ethical and legal matters were addressed during the course, some students did not consider it relevant in the project (mean 1.7). The responses to the other questions appear to contradict this finding. Personal ethics and not committing plagiarism in conducting the research were of most importance, with a mean response above 4. The fundamental principles of the CPC (SAICA 2021a), although considered, were not perceived to be as important as personal ethics or not committing plagiarism, with a mean of 3.2. The fundamental principle of integrity (SAICA 2021a) implies these concepts. What is interesting to note is that consideration of the impact of the project on organisations/people subject to the research, although contemplated, was not close to the "definitely" side of the scale (mean 3.3), despite several of the research projects being based on organisations. More positively, confidentiality, also a fundamental principle (SAICA 2021a), was given more consideration (mean of 3.5). These contradicting findings confirm the commonly held perception that students do consider an act as unethical if it is explicitly linked to unethical behaviour (e.g., knowing plagiarism is wrong), but they are not able to determine whether an act is unethical when confronted with it outside of prespecified parameters (Sadler and Barac 2005). This is one of the challenges of teaching ethics in accounting education.

Most students considered the legal and corporate citizenship implications of the project with means above 3.5 and they were able to see the real-world application of the principles taught and subsequently researched (mean 3.8). Notably, for these questions, the SDs all exceeded 1, which indicates a variation between the responses, except for responses in relation to ethical behaviour and personal ethics, with means above 4.

Independence and project management

In any larger-scale project, working independently and project management are key drivers of success. Table 5 presents the students' feedback using a Likert scale, where 5 represents "definitely" and 1 "not at all", which indicates that students claimed they were comfortable while working alone, as well as in the group, with all means above 4 and small SDs. These high responses confirm the findings in the literature that accounting students are exposed to project

management skills and are able to work independently during their undergraduate studies (Bhattacharjee and Shaw 2001; Barac and Du Plessis 2019), but still need to develop groupwork skills. The SDs for most of these questions were below 1, which indicates greater consensus in their responses.

Table 5: Independence and project management

Statement	Mean	SD
I was able to work by myself effectively	4.5	0.642
We always kept the goal of a combined final assignment in mind and planned accordingly	4.0	0.947
We, as a group, developed a project plan (including timelines) and met the objectives	4.2	0.997
As a group, we met all agreed deliverables and timelines as agreed with our supervisor	4.4	0.874

The students indicated they were also able to adapt to changing timelines and amend their project plan in response to changes in the year programme due to COVID-19 restrictions, as shown by a mean response of 3.8 (SD 1.074). The narrative responses highlighted that the students found moving targets and timeline changes because of COVID-19 emergency measures challenging and frustrating. Despite this frustration, they believed that these changes allowed them to work on their time management, planning, and organisational skills (i.e., key skills learned through the project).

Teamwork and collaboration

In the teamwork section of the questionnaire, the students on average indicated that all members of their groups participated in the project, with mean responses above 70 per cent. Feedback was provided by only one person, who felt that they ended up doing the bulk of the work, which limited the impact of non-participation. There is always a risk in group activities that all members of the team do not contribute to the work equally (Pauli et al. 2008).

The responses, as shown in Table 6, indicate that the students worked well together in their groups, played to each member's strengths, communicated with one another and their supervisor, and were able to work both together and independently to reach their targets, with mean responses above 4, with the highest scale being 5 for "definitely". The independence score is higher than the group working score. The students listened to one another (mean 4.2), collaborated in the process (mean 3.8), and learned from one another (mean 3.6). These were positive findings of skills already learned through exposure to undergraduate groupwork learning activities (Rudman and Kruger 2014; Barac and Du Plessis 2019). Although the students engaged with their supervisors when they required assistance (mean 4.3), the supervisors did not take the lead of the groups (mean 2.3). It is positive that the majority of the

groups had a shared workload where single students did not end up doing the majority of the work, and few groups encountered conflict. For the groupwork part of the assignment, all the members of the group were awarded the same mark and although most students did not perceive it as unfair (mean 2.0; SD 1.166), the narrative responses included several students who were dissatisfied that all the group members were awarded the same mark irrespective of contribution. While there were several students who suggested that the project be made an individual assignment, they emphasised that this project was the first opportunity where they worked in a team and they realised it is a key skill that was learned through the research project and was a necessary skill to develop for an audit environment.

Table 6: Teamwork and collaboration

Statement	Mean	SD
I found it easy to work with my research group	4.2	0.943
We considered everyone's strengths before we engaged in any group activities and allocating tasks	4.0	1.106
Every group member's roles were clearly defined at the beginning of the project	4.0	1.044
The group made an effort to engage with the supervisor so they could engage in the project and not get "stuck"	4.2	0.980
Each member of the group worked independently and together we produced a better group project in the end	4.3	0.867
The group had robust conversations and listened to everyone's viewpoints before making a decision	4.2	1.006
The research group collaborated in the research process	3.8	1.070
I learned a lot from working together	3.6	1.074
Our supervisor took a leading role in directing the group, rather than the team	2.3	1.270
The group had conflict and we resolved it	2.3	1.511
The group had conflict and in the end one person did all the work	1.3	0.721

Overall, the groups indicated that they worked well together and obtained guidance where necessary. An observation from the supervisors was that the students did not necessarily work in the most effective manner to complete the research project.

Communication skills

Accounting students are generally not good at formulating well-articulated arguments, and prefer numerical problem solving. Argumentative writing is a key element of a research project. The students noted that improved communication skills learned was a positive outcome of the research project, as shown in Table 7, which presents the students' feedback using a five-point Likert scale, where 5 meant "definitely". Means of 3.9 and above show that they believed they were better at articulating their thoughts using appropriate grammar and language in general. Interestingly, although the students saw the writing benefits, they were less convinced of the impact the argumentative writing required in research would have on their ability to structure

and explain their thoughts as they would be required to do in discussion-type questions in their other coursework, as shown by the two means of less than 3.7. As this was these students' first attempt at a large-scale writing assignment, it is good to see the growth in this area, as is expected from a research project (Parker 2018; Seifan et al. 2022), and it is expected to increase if more research projects are introduced. The students' narrative responses acknowledged this. They also valued the opportunity for self-expression through the writing part of the project.

Table 7: Communication skills

Statement	Mean	SD
Working in the group improved my ability to clearly articulate my thoughts to fellow group members	3.9	0.969
Writing the research assignment improved my writing skills	3.9	0.882
Writing the project improved my use of grammar and language	3.9	0.950
Writing the project helped me consider how to structure an argument and critically explain my thought process	3.7	1.039
Writing the project will help me answer discussion questions in formal assessments of my four professional subjects	3.2	1.177

Problem solving

The students were exposed to unexpected challenges during the research process and were afforded the opportunity to develop problem-solving skills (Parker 2018; Seifan et al. 2022). The student responses, as shown in Table 8, indicate that they were able to solve problems (mean 3.4). One of the key objectives of the SAICA CA2025 pathway for future aspirant chartered accountants is to depart from the rigid focus on professional examinations. The responses in Table 8 indicate that moving to the research space allowed the students to explore solutions outside of the class syllabus being taught for professional examinations (mean 3.5). The responses were also more varied, with SDs above 1.

Table 8: Problem solving

Statement	Mean	SD
As the group went through the project, we had to navigate unexpected challenges and had to adapt	3.4	1.227
The project created an opportunity for us to solve problems in a creative way, which were free of the restrictions that exist in the ITC content	3.5	1.209

It is interesting to note that the students perceived the application of critical thinking skills (see Table 9) in the execution of the research project to be higher than those in relation to that of problem solving.

Critical thinking

The aspirant chartered accountant must learn to think critically about, *inter alia*, principles

learned, ethical considerations, and unstructured problems (Terblanche and De Clercq 2021). The research project created opportunities to critically think about various parts of the research (Parker 2018; Seifan et al. 2022). The supervisors emphasised the importance of only documenting relevant information and contextualising all information. The student responses shown in Table 9 (using a five-point Likert scale, where 5 meant "definitely") indicate that they thought about the research question, the context of the research, and themes that presented themselves in the research and analysis of the results within the context of previous literature on the topic (means of ≥3.9, with narrow SD). The narrative responses noted critical and logical thinking skills as key skills they were exposed to because the research question and information being documented were new and different to what they were previously exposed to and they had to document the frame of reference.

Table 9: Critical thinking

Statement	Mean	SD
While researching the topic, I was able to:		
• read content and critically assess its relevance to the research question	4.0	0.835
• link the content to previous literature and contextualise the research question, identify themes, and draw conclusions	3.9	0.897
• critically analyse the findings in relation to the literature and question the findings and conclusions of prior literature	3.9	0.908

Professional judgement

Decision making in the research process (Seifan et al. 2022) afforded the students the opportunity to use their professional judgement when deciding on a research design, what information to use or not, etc. The data in Table 10 (using a five-point Likert scale, where 5 meant "definitely") show that the students had to make some judgement calls during the research process. They had to select the best research design to address the research question (mean 3.4) and had to evaluate the appropriateness of the sources they referenced in their study (mean 4.1). These were also aspects explicitly assessed in the marking rubric of the research project. In the process of determining which information to include or exclude in the research and while documenting the findings, the means declined to below 2.7. This is a similar decline as was seen in the students' response to argumentative writing (see Table 7). While the students acknowledged in their narrative responses that decision making is a key skill learned, the quantitative results appear to indicate that being able to identify relevant information and making relevant arguments are areas that require further development.

Table 10: Professional judgement

Statement	Mean	SD
Developing a research design, we considered all possible research methods	3.4	1.132
When assessing sources, we considered the relevance, validity, and applicability of the sources	4.1	0.813
When *documenting the literature*, I was required to delete a lot of what was written because it did not address the research question	2.6	1.082
I did a lot of work in *preparing the findings*, which I did not use because it did not address the research question	2.7	1.069

Digital acumen

Bhattacharjee and Shaw (2001) considered the use of research projects to develop IT skills. These skills focused on using IT in the execution of the research by documenting literature and findings, calculating results, etc. The COVID-19 pandemic and lockdown restrictions forced the students to also use technology to collaborate. Table 11 presents the students' feedback on the use of IT using a Likert scale, where 5 meant "definitely". The high SDs, showing varied responses and student experiences in relation to digital acumen, are understandable since different research questions and methodologies impacted which technologies the students would be required to use. The responses indicated that the students had been exposed to new software packages (mean 3.5), which improved their ability to use software required to analyse (mean 3.0) and write up (mean 3.8) the research. The students noted in their narrative feedback that working remotely and having to rely on IT applications frustrated them throughout the research project and that having to do everything online, from group meetings to documentation, made the assignment more challenging. This mirrors findings by researchers such as Ahmed and Opoku (2022) of the significant impact that COVID-19 restrictions had on higher education students globally, as well as the manner in which IT was used as a tool to bridge the higher educational learning needs in real time.

Table 11: Information technology (IT) acumen

Statement	Mean	SD
Working remotely on the project encouraged me to use software that I had not used before	3.5	1.347
Engaging in the research assignment exposed me to software tools that I had not seen before	3.5	1.313
Having to edit a document of this length and nature in Microsoft Word improved my ability to use Microsoft Word	3.8	1.187
I was able to use the software for data analysis	3.0	1.366
I learned to use new software packages (e.g., Mendeley, Statistica, etc.)	3.7	1.342
We made appropriate backups working as a group and no data and documents were lost	4.5	0.703

Use of resources

As this was the first large-scale research project that the students had been exposed to, they

might not have been aware of the resources and support provided by the university for research. The responses showed that the students' primary point of contact appeared to be their supervisor (mean 4.1; SD 0.962) and library resources (mean 3.7; SD 1.16). Google was used less (mean 2.2; SD 1.2). These findings are expected since most supervisors proactively engaged with the students, while Google is not a very effective search engine when looking for subject-specific high-quality content online. The students' narrative feedback voiced their frustration of having to research remotely and they acknowledged their lack of experience with online library services, which hindered their progress.

Summary of competencies developed

Given how accounting is taught at university, with the focus on developing technical competencies, and passing professional examinations with a rigid curriculum and narrow focus, new teaching tools must be developed for the competencies required for 4IR and to address the weaknesses in current teaching and learning mechanisms. Using content analysis on the narrative feedback, Figure 1 shows which of the competencies considered are best developed using research projects.

Figure 1: Competencies developed using the research project

Obstacles to the project

Although a group research project at university has numerous advantages (as reflected in the students' responses), there were also specific obstacles documented by the students in their narrative feedback. The most significant of these was tension, as also noted by Lopatto (2010), between class time and research time and the time pressure to complete the research assignment over and above their coursework, which the students felt was already overloaded. The students

felt their time would be better spent on coursework for final assessments. They were not convinced of the benefit of the research project in preparing them for professional examinations; this highlighted the students' short-term focus on the goal to pass the professional examinations, rather than considering the long-term benefits to the future world of work.

Some of the students felt that their supervisors were not helpful and did not provide enough guidance, which they believed resulted in inconsistencies in the treatment across research groups and caused more frustration among some groups than others. This highlights the students' discomfort and inability to deal with uncertainty, which are important skills to develop before entering the modern business world. This further supports the notion of the importance of the supervisor in a first research assignment (Lopatto 2010) and the need for the supervisor to articulate the objective and learning benefits of unstructured active learning that takes place when conducting research, as opposed to the passive learning accounting students are used to. Lastly, many students emphasised the consequences of the COVID-19 pandemic and related restrictions that affected face-to-face learning.

CONCLUSION

As competencies required of accounting graduates change in business and industry because of advancements in technology and ways of work, so too does how educators teach. One of these ways that is used globally across many professions is utilising research projects where students are required to research a self-defined research topic. However, in South Africa, there is limited use of this tool or research on its impact in developing professional competencies among aspirant chartered accountants. This is despite recommendations from academics and professional bodies as to the benefits that research projects have as a comprehensive tool to teach and develop professional competencies. The 2020 cohort of postgraduate students provided a unique opportunity to gauge students' perceptions of the implementation of a group research project as these students had not been exposed to a large-scale research project in their undergraduate studies and future cohorts would be limited to approximately 20 top academic performing students per year and not the whole postgraduate class. To ensure a proper understanding of all the competencies developed by students, rather than only utilising SAICA's (2021b) Competency Framework, the researchers also utilised the RDF (Vitae®© 2010) to develop a complete list of competencies. These competencies were used as the basis to frame this research.

The findings of the research confirmed existing literature that group research projects are effective tools to build competencies in several of the professional skills required of an aspirant chartered accountant, including ethics and legal considerations, self-development and

motivation, IT acumen, independence and project management, teamwork and collaboration, communication skills, critical thinking, professional judgement, and problem solving. The results also highlighted that student attitudes to research are a significant contributor to student engagement and learning in research assignments. Overall, it was a challenging, yet positive experience. Outside of this research, the students also acknowledged the challenges and their personal growth throughout the research process (Figure 2).
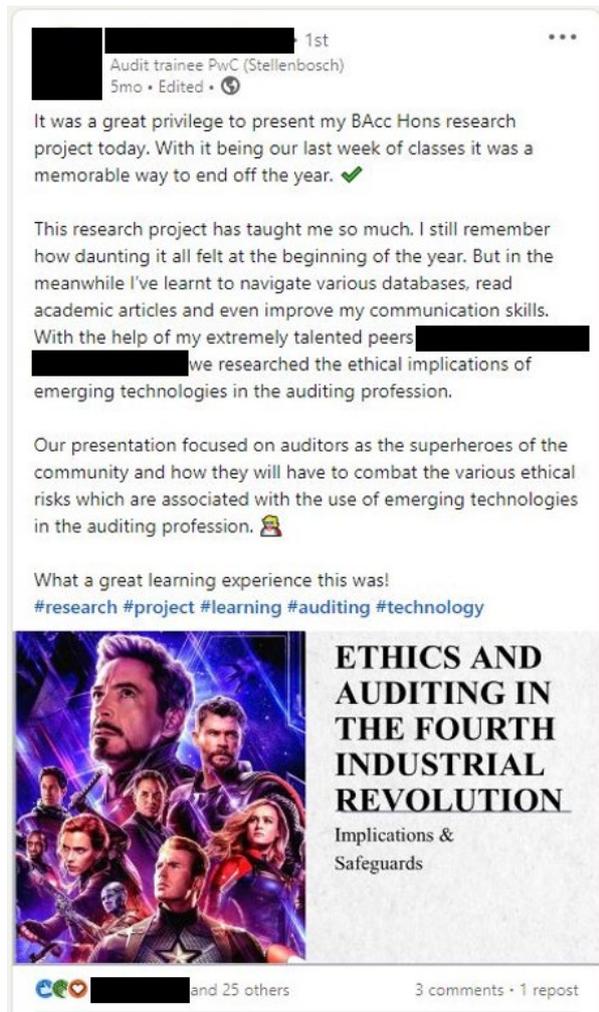

Figure 2: Social media post made by a participant to the research project

Even though there are challenges when using research projects as a learning tool, they are effective in higher education and their continued use is recommended by the 2020 cohort of students, as well as professional bodies and researchers. Educators in South Africa are encouraged to consider the inclusion of research projects in the curriculum at both undergraduate and postgraduate level for aspirant chartered accountants in varying degrees of complexity. A research project can build on the competencies perceived to have been developed in subjects such as management account, taxation and auditing in a more comprehensive

manner. It is also important to create a culture of research, which has yet to be established in the accountancy profession.

The accounting profession has always argued that the accounting curriculum is decolonised because of the nature of its content, however the studies show that much work is still to be done on decolonising the delivery mechanisms. This has implications for transformation of Higher Education. The accountancy profession claims develop competencies; however, it appears that the tools used to develop competencies are not as embedded in pedagogy in a sustained and impactful manner. It is also worth nothing that these competencies developed through a research project are those required in 4IR, where technical competencies can be replicated by technology. Moreover, when considering student attitudes towards research, there are contradictions about where accounting education should focus (i.e. professional assessment vs competency development) and on the tools used. As a result, an area for further research is to obtain an understanding of the competencies that lecturers (without a tradition of including research as part of their teaching pedagogy) perceive that students develop when doing research projects and their views on research given the lack of a research culture in the accountancy profession in South Africa. Lecturers design curriculum and assessments. The full benefit of a research project will only be realised once research and research projects become part of accounting education pedagogy.

NOTE

1. Because a research project is a teaching tool in its own right, the research questions were considered for each of the competencies that intersected in the mapping of the RDF (Vitae®© 2010) and SAICA's (2021b) Competency Framework.

REFERENCES

Ahmed, V. and A. Opoku. 2022. "Technology Supported Learning and Pedagogy in Times of Crisis: The Case of COVID-19 Pandemic." *Education and Information Technologies* 27(1): 365–405. https://doi.org/10.1007/s10639-021-10706-w.

Barac, K. 2009. "South African Training Officers' Perceptions of the Knowledge and Skills Requirements of Entry-Level Training Accountants." *Meditari Accountancy Research* 17(2): 19–46.

Barac, K. and L. du Plessis. 2019. "Teaching Pervasive Skills to South African Accounting Students." *Southern African Business Review* 18(1): 53–79. https://doi.org/10.25159/1998-8125/5645.

Beckman, M. and N. Hensel. 2009. "Making Explicit the Implicit: Defining Undergraduate Research." *CUR Quarterly* 29(4): 40–44. https://www.mcgill.ca/senate/files/senate/beckman_hensel_making_explicit.pdf.

Bhattacharjee, S. and L. Shaw. 2001. "Evidence That Independent Research Projects Improve Accounting Students' Technology-Related Perceptions and Skills." *Accounting Education* 10(1):83–103. https://doi.org/10.1080/09639280110058909.

Chartered Institute of Management Accountants. 2014. *CGMA Competency Framework.* London: Association of International Certified Professional Accountants.

https://www.cimaglobal.com/Employers/CGMA-The-new-global-standard/CGMA-Competency-Framework/.

CIMA *see* Chartered Institute of Management Accountants.

Council on Undergraduate Research. 2017. "Definition of Undergraduate Research." http://www.cur.org/about_cur.

Crawford, L., C. Helliar, and E. A. Monk. 2011. "Generic Skills in Audit Education". *Accounting Education: An International Journal* 20(2): 115–131.

CUR see Council on Undergraduate Research.

Díez-Palomar, J., R. García-Carrión, L. Hargreaves, and M. Vieites. 2020. "Transforming Students' Attitudes Towards Learning Through the Use of Successful Educational Actions." *PloS ONE* 15(10): e0240292. https://doi.org/10.1371/journal.pone.0240292.

Fazal, F. A. and R. Chakravarty. 2021. "Researcher Development Models and Library Research Support". *Library Hi Tech News* 38(4): 18–22. https://doi.org/10.1108/LHTN-04-2021-0015.

Fosnacht, K., E. Howe, and L. K. Peck. 2013. "How Important Are High Response Rates for College Surveys?" *The Review of Higher Education* 40(2): 254–265.

Gal, I. and L. Ginsburg. 1994. "The Role of Beliefs and Attitudes in Learning Statistics: Towards an Assessment Framework." *Journal of Statistics Education* 2(2): 1–16.

García, J. L. and I. de los Ríos. 2021. "Model to Develop Skills in Accounting Students for a 4.0 Industry and 2030 Agenda: From an International Perspective." *Sustainability (Switzerland)* 13(17): 1–31. https://doi.org/10.3390/su13179699.

Hardway, C. L. and M. Stroud. 2014. "Using Student Choice to Increase Students' Knowledge of Research Methodology, Improve Their Attitudes Toward Research, and Promote Acquisition of Professional Skills." *International Journal of Teaching and Learning in Higher Education* 26(3): 381–392.

Hemmings, B., P. Grootenboer, and R. Kay. 2011. "Predicting Mathematics Achievement: The Influence of Prior Achievement and Attitudes." *International Journal of Science and Mathematics Education* 9(3): 691–705.

Hiralaal, A. 2012. "Students' Experiences of Blended Learning in Accounting Education at the Durban University of Technology." *South African Journal of Higher Education* 26(2): 316–328.

Lopatto, D. 2008. "Exploring the Benefits of Undergraduate Research Experiences: The SURE Survey." In *Creating Effective Undergraduate Research Programs in Science: The Transformation from Student to Scientist*, edited by R. Taraban and R. L. Blanton, 112–132. New York: Teachers College Press.

Lopatto, D. 2010. "Undergraduate Research as a High-Impact Student Experience." *Peer Review: Emerging Trends and Key Debates in Undergraduate Education* 12(2): 27–30.

Low, M., V. Botes, D. de la Rue, and J. Allen. 2016. "Accounting Employers' Expectations – The Ideal Accounting Graduates." *The e-Journal of Business Education & Scholarship of Teaching* 10(1): 36–57.

Murtonen, M., E. Olkinuora, P. Tynjälä, and E. Lehtinen. 2008. "'Do I Need Research Skills in Working Life?': University Students' Motivation and Difficulties in Quantitative Methods Courses." *Higher Education* 56(5): 599–612. https://doi.org/10.1007/s10734-008-9113-9.

Nath, S. R., K. Jones, and C. Viney. 2021. "Understanding the Experiences of Postgraduate Researchers Using the Vitae Researcher Development Framework at UK Universities." https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework/understanding-experience-of-pgrs-using-the-vitae-rdf-at-uk-universities-final-june-2021.pdf.

Nathan, D. 2015. "How South African Societal and Circumstantial Influences Affect the Ethical Standards of Prospective South African Chartered Accountants." *African Journal of Business Ethics* 9(1): 42–62. doi:10.15249/9-1-79.

Papanastasiou, E. 2005. "Factor Structure of the 'Attitudes Toward Research' Scale." *Statistics Education Research Journal* 4: 16–26.

Parker, J. 2012. "International Comparisons of the Integration of Research into Undergraduate Degrees in the Social Sciences." *Council on Undergraduate Research Quarterly* 32(3): 28–33. link.gale.com/apps/doc/A297733357/AONE?u=27uos&sid=bookmark-AONE&xid=2aa009b0.

Parker, J. 2018. "Undergraduate Research, Learning Gain and Equity: 'The Impact of Final Year Research Projects'." *Higher Education Pedagogies* 3(1): 145–157. https://doi.org/10.1080/23752696.2018.1425097.

Parsons, S., B. Davidowitz, and P. Maughan. 2020. "Developing Professional Competence in Accounting Graduates: An Action Research Study." *South African Journal of Accounting Research* 34(2): 161–181. https://doi.org/10.1080/10291954.2020.1727080.

Pauli, R., C. Mohiyeddini, D. Bray, F. Michie, and B. Street. 2008. "Individual Differences in Negative Group Work Experiences in Collaborative Student Learning." *Educational Psychology* 28(1): 47–58. https://doi.org/10.1080/01443410701413746.

Petrella, J. K. and A. P. Jung. 2008. "Undergraduate Research: Importance, Benefits, and Challenges." *International Journal of Exercise Science* 1(3): 91–95.

Reed, H. C., P. Drijvers, and P. A. Kirschner. 2010. "Effects of Attitudes and Behaviours on Learning Mathematics with Computer Tools." *Computers & Education* 55(1): 1–5.

Rudman, R. J. and J. Terblanche. 2011. "Practical Role-Play as an Extension to Theoretical Audit Education: A Conceptualising Aid." *Southern African Journal of Accountability and Auditing Research* 11: 63–74.

Rudman, R. J. and W. Kruger. 2014. "Using A Group Work Project as an Educational Tool in Management Accounting Education." *International Business & Economics Research Journal* 13(3): 611–28. https://doi.org/10.19030/iber.v13i3.8598.

Sadler, E. and K. Barac. 2005. "A Study of the Ethical Views of Final Year South African Accounting Students, Using Vignettes as Examples." *Meditari Accountancy Research* 13(2): 107–128. https://doi.org/10.1108/10222529200500015.

Sahd, L. and R. J. Rudman. 2020. "Audit Trainees' Perceived Value of Case Studies as an Assessment Tool in Developing and Assessing Professional Skills: A National Perspective." *South African Journal of Accountability and Auditing Research* 22(1): 1–14.

SAICA *see* South African Institute of Chartered Accountants.

Seifan, M., N. Lal, and A. Berenjian. 2022. "Effect of Undergraduate Research on Students' Learning and Engagement." *International Journal of Mechanical Engineering Education* 50(2): 326–348. https://doi.org/10.1177/0306419021988962.

Sexton, N. D. 2019. "Accounting Students' Perceptions: Internal Control Theory Moves Outside the Classroom and Online." *South African Journal of Higher Education* 33(4): 271–90.

South African Institute of Chartered Accountants. 2021a. *Code of Professional Conduct of the South African Institute of Chartered Accountants (revised 2018): 2021 Edition.* Johannesburg: SAICA. https://saicawebprstorage.blob.core.windows.net/uploads/resources/SAICA-Code-of-Professional-Conduct-Revised-2021.pdf.

South African Institute of Chartered Accountants. 2021b. *CA(SA) Competency Framework 2021.* Johannesburg: SAICA. https://ca2025.co.za/wp-content/uploads/2021/03/DOCUMENT-2-CASA-Competency-Framework-2021.pdf.

Steenkamp, L.P. 2009. "South African Chartered Accountants' Views on and Expectations of a Career in Academia." *Meditari Accountancy Research* 17(1): 81–98. https://doi.org/10.1108/10222529200900006.

Terblanche, E.A.J. and B. de Clercq. 2021. "A Critical Thinking Competency Framework for Accounting Students." *Accounting Education* 30: 325–54. doi:10.1080/09639284.2021.1913614.

University of Canberra. n.d. "Researcher Development Skills Framework."

https://www.canberra.edu.au/research/graduate-research/researcher-development/researcher-development-skills-framework/RDSFSkillAreas.pdf.

University of Edinburgh. n.d. "Researcher Development Framework." https://www.ed.ac.uk/institute-academic-development/research-roles/research-only-staff/career-management/researcher-framework#:~:text=The%20framework%20has%20been%20developed,the%20characteristics%20of%20excellent%20researchers.

Vitae®©. 2010. "Researcher Development Framework (Version 2 April 2011)." https://www.vitae.ac.uk/vitae-publications/rdf-related/researcher-development-framework-rdf-vitae.pdf/@@download/file/Researcher-Development-Framework-RDF-Vitae.pdf.