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ACCOUNTING TEACHING AND LEARNING JOURNAL



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EDITORIAL

Robert Zwane

The South African Institute of Chartered Accountants

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COVID-19 has wreaked havoc worldwide on children's learning and wellbeing. Before the pandemic, progress in education was already too slow to achieve the Sustainable Development Goal 4 as outlined by the United Nations by 2030.

Indeed, as the UN reflects more than a year into the crisis, two in three students around the world were still affected by full or partial school closures. One hundred million more children than before fail to demonstrate basic reading skills.

Sadly, as seen here in our country and in many others the poorest and most vulnerable children are bearing the brunt of the crisis, exacerbating longstanding inequalities. Many risk never returning to school.

In addition to the challenges caused by COVID-19 and those associated with being a young professional in general, the world around us has continued to shift on its access and this too is having an effect on the youth of today. Not only are learners and students having to deal with the effects of the pandemic but they are also having to deal with a myriad of challenges stemming from the technological shifts of the Fourth Industrial Revolution, being ethical in a world where personal gain means more than what is best for society and more.

Finding solutions that progress education and serve our young people lies at the heart of what we do here at the South African Institute of Chartered Accountants (SAICA) and indeed is something our academic partners focus on too. With this in mind, we are grateful for the submissions from those who chose to answer the call to use this year's Accounting Teaching and Learning Journal as an idea sharing platform – where the university community and others education experts can share best practice that we can all learn from.

These individuals are:

Mandi Olivier, CA(SA) and SAICA Executive for Learning and Development who has overall responsibility for all aspects related to post-qualification education for CAs(SA). During SAICA's 2021 Trainee Summit, she discussed why chartered accountants [CAs(SA)] are currently in a state of flux and how, as artificial intelligence (AI) and automation move into our sphere and business contexts become more complicated, they may well require a different set of skills and will need to commit to lifelong learning in order to stay relevant. Her thoughts are captured in *An Attitude, Not a Skill: Why Lifelong Learning Will Change the Way You Think*.

Financial services professional, **Babalwa Nonkenge**, believes as a society and as educators we may unwittingly be setting young people up for failure if we only equip them with pure textbook and vocational training and omit to giving them skills that may help them to avoid some of the trappings that inevitably come with being newly minted professionals along with all the pressures that come with earning more money than their parents and family members. She reveals how applying the knowledge of subsistence farming could be the solution to helping young professionals get a handle on their personal finances early in their careers.

Schalk Engelbrecht, ethicist, Chief Ethics Officer at KPMG in South Africa and Extraordinary Associate Professor at North-West University believes it takes moral courage to be a guardian of society and that this is something CAs(SA) need to practice on a daily basis. His thoughts, which are adapted from his session at SAICA's 2021 Trainee Summit, are captured in *Courage, Audits and Making the World a Safer Place*.

Stellenbosch University's **Professor Riaan Rudman** and **Natasha Sexton** reflect on how the institution is changing its pedagogical models to embrace the CA2025 Competency Framework. Their article shares details on how they applied this when teaching the keystone topic of "*substantive procedures*" to third-year students at their university with the hope that it will encourage others to rethink how they teach auditing, particularly as it pertains to keystone topics such as this.

The business ideals of profit and shareholder wealth maximisation cannot be sustainable if ethics are not engrained in the DNA of the business operations. **Kwena Maseko**, senior lecturer at University of Pretoria, sees the dominance of ethics in current leadership discourses as the cornerstone of organisational leadership. His article goes into what the role of the professional is in all of this.

South Africa is facing a series of stumbling blocks – each seemingly more daunting than the last. Surmounting them requires ethics and leadership, says **Professor Bonang Mohale**, Chancellor of the University of the Free State, president of Business Unity South Africa and Unite 4 Mzansi™ Chair during his appearance at SAICA's 2021 Trainee Summit. At the event, Professor Mohale he took SAICA's aspiring chartered accountants through his thoughts on ethics and leadership. These can be found in *Ethics: A Guiding Light in Troubled Times*.

For our economy to survive, it needs a generation with sound accounting and financial literacy knowledge and skills. Accounting knowledge is the engine for other professions to survive and to be sustainable. In its submission. But how do we encourage young people to acquire this knowledge and become passionate about it? The team at **KM Academics** looks at how we are failing the country by not teaching Economic & Management Sciences (EMS) correctly at school and the knock-on effects this is having for the accounting profession.

Another speaker at the SAICA 2021 Trainee Summit was business futurist and digital transformation expert, **Kevin Ssemwogerere**. He believes that if you do not know the difference between digitisation and digitalisation, or AI and automation, it's time to brush up on your knowledge. The good news, though, is that keeping pace with technological development is not nearly as complex – or daunting – as it may seem. *Keeping Pace with Technology in the Workplace* is essential reading for all budding professionals who feel daunted by this topic.

The Leadership Facilitator and Life Coach behind the North-West University's Thuthuka programme, **Desmond Phuti**, outlines key findings from the virtual psycho-support workshops that SAICA rolled out to Thuthuka beneficiaries in 2021 to assist them in building their resilience. His findings illustrates why universities need to adopt trauma-sensitive, culturally responsive, and resilience-focused approaches to help ensure that all students have the opportunities to learn, grow, and thrive, during their studies and beyond.

It has been almost two years since the COVID-19 pandemic turned life and education on its head. In their second submission in this year's journal, **Ms Sexton** and **Professor Rudman** delve into some of the challenges both academic and students have had transitioning to online teaching and learning. It also presents an example of online learning they found contributing to enhancing deeper learning via a digital platform.

In *Preparing Chartered Accountants Who Are Fit for Purpose in the Fourth Industrial Revolution*, University of Pretoria's **Professor Karin Barac** and **Professor Kato Plant** join up with SAICA's **Mandi Olivier** to discuss what digital skills CAs(SA) will need to remain fit for purpose and why they need them.

And in the final article of this year's journal, **Sedzani Netshitenzhe**, founder and Managing Director of Nzalo Careers shares her thoughts on the importance of career guidance and why we cannot afford to neglect the process. As she presents in her article, this process is one of the most underrated aspects of education and yet it has significant impact on the kind of youth we are breeding and the type of workforce we are creating to ensure it is fit for our country's economic needs.

Kind regards,

Robert Zwane and Karin Jacobsen
SAICA's *Accounting Teaching and Learning Journal* editorial team

AN ATTITUDE, NOT A SKILL: WHY LIFELONG LEARNING WILL CHANGE THE WAY YOU THINK

Mandi Olivier¹
SAICA

Adapted from the 2021 SAICA Trainee Summit: Embrace the Future
(A recording of the event is available at <https://ca2025.co.za/traineesummit/live-summit/>)
Article written by Lisa Witepski

The role of the Chartered Accountant [CA(SA)] is in flux: today, they serve a certain purpose in society, but as AI and automation move into our sphere and business contexts become more complicated, they may well require a different set of skills. This is why, going forward, all members of the accounting profession will need to place greater emphasis on the concept of lifelong learning.

According to Mandi Olivier, Executive: Learning and Development at the South African Institute of Chartered Accountants (SAICA), the area most profoundly affected by change involves the skills that inform the way we think. “In future, we will see a stronger accent on integrated and critical thinking,” she informed the trainees who attended SAICA’s 2021 Trainee Summit.

“We will also see changes in the skills that inform the way we work.” Collaboration is key here; in fact, says Olivier, “collaborative work is certain to become a norm for the CAs(SA) of tomorrow, as accountants will increasingly need to be able to work across multi-disciplinary teams”.

Get set, too, for an evolution in the tools you have at your disposal – technology is an obvious case in point here – and in your contribution to the broader communities. For example, we are likely to see CAs(SA) playing a more prominent role in citizenship.

CHANGE IS THE ONLY CONSTANT

One of the factors driving all of this change is the reality that change has become the only constant in a world which is constantly being disrupted at an ever increasing rate. While this may have been a mantra in the pre-Covid world, the events of the past months have reminded us that no matter how stable we believe our foundations to be, it is foolhardy to take anything for granted. “If you don’t anticipate change, you will struggle to cope,” Olivier states boldly. And with good reason, considering the challenges ahead of us: climate change, food sustainability, water supply, new diseases, increasingly complex ethical dilemmas, advances in technology, innovators and disruptors, the emergence of new industries, the growing focus on social responsibility, geopolitical factors, and longer lifespans are all coming together to create a future that will look very different from anything we have previously known. The question facing accountants is this: how can we manage these changes, and remain relevant as professionals?

The answer here may lie in adopting a mindset that’s oriented towards lifelong learning, Olivier says. “Your mindset is a set of beliefs that shape how you make sense of the world and your place in it,” she explains, adding that a mindset centred around lifelong learning positions young professionals to be adaptable and agile. This is important, because while there are many tools and techniques that can teach you to learn, the way you approach such learning carries far greater impact. As Olivier says, yes, it’s possible to further your learning by acquiring one qualification after another – but if you have a learning mindset, you will be able to take advantage of informal learning opportunities that may be present in every day experiences.

¹ Mandi Olivier is the Executive: Learning and Development at the South African Institute of Chartered Accountants. She has overall responsibility for all aspects related post-qualification education for CAs(SA).

SELF-DIRECTED LEARNING IS KEY

This openness to learning will also help you keep pace with trends and developments in all spheres of your world, and is thus crucial in terms of self-development. Being able to galvanise yourself in this manner is vital, because as you move further ahead in your career, you need to take responsibility for your own learning – there are no lecturers to identify areas of improvement once you are qualified as a CA(SA). You will also have to find your own learning opportunities – or even make them. This, says Olivier, is the essence of being a self-directed learner.

As a professional, you are solely in control of driving your learning journey – this means you will also need to set and monitor your learning objectives. This is encouraged by SAICA, Olivier says: although, in the past, members were requested to record how many hours they had invested in learning, the institute now places emphasis on the outcomes of learning initiatives, as this is a more accurate reflection of competencies that are being developed.

Olivier also recommends developing a mindset that is adaptable. She contrasts this with a fixed mindset, which maintains that an individual can only excel or achieve certain things or to a specific level. A growth mindset, on the other hand, makes room for development, because it holds that you can master new skills as you move through life. “It comes down to Wayne Dyer’s belief that ‘if you change the way you look at things, the things you look at change’,” she says.

Agility is also important because it helps us realise our own unconscious incompetence or, as Olivier puts it, “when you don’t know what you don’t know”. Agility helps us learn, unlearn and relearn; a process which will grow in importance as accounting standards evolve in response to changes in our world, our roles and our work contexts. “We need to be able to acquire new knowledge, skills and experience if we are to remain relevant, adapt our career goals and empower others,” she notes.

The challenge here is that the behaviours required to work in an agile manner and deal with complexities can’t be learnt from a textbook. That’s because they are more akin to the lens through which we see the world.

HOW TO DO IT

If that’s the case, how can you learn and develop – or, more to the point, cultivate this much-vaunted lifelong learning mindset? Start by accepting responsibility for your own learning, Olivier repeats. If you’re not certain which learning gaps you need to address, ask for feedback from your colleagues, mentors and team members – they may be able to identify areas where you may be able to develop further skills. However, accept that their learning experiences will be different to your own – your learning journey is intensely personal, related to your role and what is expected of you. Reading up on topics and subjects that interest you will also help you accumulate insight and knowhow.

Olivier says that as you progress in your career, learning becomes extrinsically motivated – in other words, you come to appreciate the value of upskilling as the tool that will help you advance in your role. This makes it easier to find the mode of learning that best resonates with you. After all, for adults, learning isn’t restricted to the classroom. You should be able to find a combination of activities that allow you to absorb theory and apply it in the workplace. Being mentored, or offering to coach someone else, is a great example of such learning.

“Remember that learning needn’t be purely technical in nature. As we walk into the future, attitude and skills are equally important,” Olivier concludes.

CONTINUING THE WORK OF EQUIPPING AND EDUCATING

Babalwa Nonkenge²
Epokothweni

Father of the South African nation and former President Nelson Rholihlahla Mandela was a great proponent of education. In his fight against all forms of oppression, history shows us that he personally invested in endeavours to ensure that young people attain quality education. Numerous quotes in this regard are attributed to him such as the following “Education is the most powerful weapon which you can use to change the world” and “The power of education extends beyond the development of skills we need for economic success. It can contribute to nation-building and reconciliation”.

To this end, the elder statesman did not shy away from associating his name to a historical figure that some consider controversial, because the matter of education went beyond nice sounding words. He has allowed his name to be used along that of Cecil John Rhodes for a foundation whose sole aim is to expose the brightest young Africans to some of the best scholarship opportunities in the world including post graduate study at the prestigious Oxford University in the UK.

The likes of his successor and many others have followed suit with similar foundations and scholarships, I believe partly based on the prevailing needs but also on the inspiration derived from the elder statesman. My firm belief is that the work of our current generation is to continue in the footsteps of our elders in educating our young people.

Young people such as those who are in prestigious scholarships are fortunate to have the first pick of the scarce job opportunities. They become part of a social class typically known as black diamonds or the middle class and this makes them the envy of their peers and communities. However, as a society and as educators we may unwittingly be setting these same young people up for failure if we only equip them with pure textbook and vocational training and omit to give them skills that may help them to avoid some of the trappings that inevitably come with being newly minted professionals along with all the pressures that come with earning more money than their parents and family members.

I recently had the opportunity to chat to an impressive young man who is firmly on track to becoming a Chartered Accountant and is currently a clerk with Deloitte. His name is Monwabisi Makhenke and he hails from the small town of Lusikisiki in the Eastern Cape. He is a bright young mind, a product of the Thuthuka Programme and I believe he has a bright future ahead of him. In our short discussion, he was quite candid about the shock effect brought on by having access to a stipend as a first-year university student. The stipend is easily more money than most Thuthuka students have ever had access to, and as expected the peer pressure was also a very real feature of life away from home. He confided “I quickly found it easy to spend the entire stipend on takeaways instead of buying groceries and cooking for myself which would have been cheaper. We also wanted to appear as if we come from well off families and so we quickly fell into the trap of opening retail clothing accounts so that we could buy fairly expensive clothing and cell phones on account”.

The sentiments he expressed were not unfamiliar to me as I have professional experience in running an unsecured retail credit book. My sense is that, although Monwabisi was speaking as a former student, the sentiments he was expressing were also true for those who were in the working class and are in their fields of work for much longer than what he is.

² Babalwa Nonkenge, the founder of Epokothweni, a Tutu Leadership Fellow and a former executive in the areas of taxation, asset management and retail banking. The Epokothweni platform provides a space for conversations, learning and co creation about personal financial stewardship and is presented in isiXhosa.

Indeed just take a look at South Africa's low savings rate and I'm sure you will agree that all South Africans could benefit from being equipped with the necessary skills in order to be successful stewards of financial resources. It is my opinion that this needs to take place concurrent to educational and vocational training.

The most recent quarterly Debt Index published by Debt Busters found that people applying for debt counselling who fall into the segment commonly known as the middle class (i.e., those whose take-home income is above R20 000 per month) spend 60% of their monthly net income servicing debt and that their total debt-to-income ratio is over 130%. While this ratio is in line with similar countries elsewhere in the world, the most peculiar result shown on the index is that South Africans are servicing unsecured debt while others elsewhere in the world are servicing low interest home loan debt. (*Business Tech, July 2021*). Although the index was derived from the sample of middle-class individuals, by mere observation we know that the picture is even more grim in the lower earning segments of our population.

Practically, the solutions are quite simple and good examples can be borrowed from subsistence farmers. On an annual basis, once crops are ready the harvested, they are not used immediately. Instead, from one harvest of crops, a portion is used in different forms such as ground food products for animals and humans. Subsistence farmers also reserve seeds from the same for planting in the next season. This is often done with minimal mechanisation and, while also providing for the ability to give to those in need.

These lessons can be applied by students and professionals alike; I will highlight the basic principles below:

- Live free of debt which fuels consumption and not investment – by debt I refer to things like clothing accounts, cell phone contracts and hire purchase arrangements to buy furniture.
- Grow accustomed to living beneath your means – Monwabisi in order to save enough money for rental deposits and start up essentials such as a bed, microwave etc. he decided to forego immediate pleasures such as takeaway food and opted to rather cook most of his own meals. This enabled him to minimise his living costs and to have a surplus which would allow him to have some cash saved up in much the same way that a farmer uses the seeds from the mielie plant to create his next crop.
- Finding opportunities to grow resources and looking for ways to increase wealth may include selling of useful items that are no longer needed. In Monwabisi's case, this meant identifying opportunities to learn about the stock market and learning how to trade shares.

The above principles can be put into practice by students and professionals alike and with increased practice these basic principles do lead to the successful management of financial resources whether large or small.

Indeed, on reflecting on Monwabisi's journey we see that by going back to the basics and taking to heart the lessons of subsistence farming he was able to change his spending habits. Today, he has successfully started a small business and has saved enough money to pay a deposit for his flat as well as buy the essentials needed for starting up a new life.

COURAGE, AUDITS AND MAKING THE WORLD A SAFER PLACE

Schalk Engelbrecht³
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Adapted from the 2021 SAICA Trainee Summit: Embrace the Future
(A recording of the event is available at <https://ca2025.co.za/traineesummit/live-summit/>)

Article written by Lisa Witepski

If you were to compile a list of careers that require courage as a core competency, you may include firefighting or game rangers – but accounting? Actually, yes, says Schalk Engelbrecht, Chief Ethics officer at KPMG South Africa and this is what he recently told the next generation of chartered accountants at South African Institute of Chartered Accountants’ Trainee Summit.

South African history is full of examples of courageous people, from Steve Biko, father of the Black Consciousness Movement, to Wolraad Woltemade, a retired dairy farmer who, in 1773, rescued drowning sailors from their wreck in Table Bay by carrying them two by two to the shore – until both he and his horse were drowned by the weight of panicking men pulling them down.

“Our genes and our upbringing might mean that we already have courage in varying degrees, but that doesn’t mean that we cannot work on courage,” says Engelbrecht. “Courage is not an impulse or a decision; it’s a virtue. It’s something you can learn, through practice rather than study.” Drawing on the work of philosophers like Aristotle, he clarifies this explanation further: virtues are related to ethics. Becoming an ethical person is a process, which leads to the development of character. But this process is set in motion only once you have identified – and understood – your purpose. From there, you have to develop habits and activities that will help you fulfil that purpose. Think of it this way: if a knife is to work properly, you have to sharpen the blade regularly. In the same way, if you want to develop ethics, you have to work at them – and the harder you work, the more likely it is that ethical behaviour will become second nature.

Engelbrecht adds that any virtue is a midpoint between two extremes. Generosity, for example, is a midpoint between extravagance and stinginess. In the same way, courage is a midpoint between fear and confidence – because while a certain amount of fear is natural and normal, too much can be crippling. Similarly, too much confidence can lead to recklessness. Balanced somewhere in the middle of this spectrum, courage allows us to act appropriately in a situation where fear may be present.

Not that taking this course of action is easy, however – nor is acting with moral courage, which may be defined as “taking a stand to defend a personal value or principle that is at risk, despite the danger of doing so,” according to the researchers Christensen and Boneck, whom Engelbrecht quotes.

But what does all of this have to do with balance sheets and ledgers? It’s simple, really, says Engelbrecht: while you may not expect to lose life and limb at any point during an audit, your role as an accountant is akin to that of a guardian of society. “Any professional must navigate two value systems: commercial and guardian. The commercial value system is typified by people who sell things: they may offer their clients discounts because they want to secure repeat business, and they may socialise with them to cement long-term relationships. On the other end of this scale is a person like a judge, who embodies the values of the guardian system: they’re not looking to build future relationships so there is no socialising, and they certainly don’t want to see the defendant again, so there is no deal making.” The accountant, Engelbrecht says, has a function somewhere between these two. On the one hand, accountants sell their

³ Schalk Engelbrecht is an ethicist, the Chief Ethics Officer at KPMG in South Africa, and a student of philosophy. He is responsible for KPMG’s internal ethics programme, and provides ethics consulting services to clients across different industries. Schalk has a PhD in Philosophy, is a research associate with the Centre for Applied Ethics at Stellenbosch University, and an Extraordinary Associate Professor with the School of Accounting Studies at North-West University.

services, but they also take on a role of judgment, especially during audits. “Hence our guardian-like function: we protect capital markets and we protect the people who use financial information.” And that, he points out, takes courage.

Engelbrecht maintains that this understanding is encapsulated in the Global Code of Ethics for Professional Accountants, which states that “a distinguishing mark of the accounting profession is its acceptance of the responsibility to act in the public interest. In doing so, professional accountants must consider not only the preferences or requirements of an individual client, but also the interests of other stakeholder when performing professional actions.”

There are many concepts that stand out here, Engelbrecht says: the text underlines the need for integrity, which in turn encompasses fair dealing, truthfulness, and having the strength of character to act appropriately even when you are facing pressure to do otherwise, or when doing so may create potential adverse consequences. Then there’s the notion of ‘appropriate behaviour’, which involves standing one’s ground when confronted by dilemmas and difficult situations, or challenging others as and when circumstances warrant.

As an accountant, there may be several instances in your day when you are called upon both to show courage; when you are under pressure to meet expectations, for example, or even to manipulate or sign off on results you know to be incorrect. You may find yourself forced to challenge your superiors, or even your clients. Maybe you have made a mistake – it certainly requires a great deal of courage to admit to this, just as it does when you are called upon to conduct performance appraisals or become a whistleblower.

Difficult though it may be to act with courage, it’s also necessary – and it may help to remember that in each of the above cases, your responsibility is not to your clients, but to the public.

So, how can we become more courageous? Slowly, says Engelbrecht: by doing one thing every day that scares you, and then doing one thing more. It may also help to surround yourself with courageous people, and it certainly becomes easier if you situate yourself in an environment that supports you as you seek to become more brave.

SCHALK ENGELBRECHT’S STEPS TO BECOMING MORE COURAGEOUS

- Make purpose your project: Identify your personal purpose and act accordingly.
- Get enough sleep, eat healthy foods and exercise: Perhaps it’s not immediately obvious why these actions help develop courage, but the reality is that it is more difficult to make tough decisions when you feel tired – that’s when you’re more likely to give into the temptation of taking the easy route.
- Read case studies and stories about accountants who have acted with courage. Arthur Andersen and Worldcom internal auditor Cynthia Cooper are great examples. Consider how they acted, and what enabled them to act in this way. Allow yourself to be inspired.
- Discuss concepts such as fundamental principles and virtues, such as integrity, within your team.
- Do brave things, repeatedly. You don’t have to start with massive challenges – it can be as small as refusing to postpone a task you’ve been dreading.

DOING SOMETHING OLD IN A NEW WAY

Professor Riaan J Rudman⁴
Stellenbosch University

Natasha Sexton⁵
Stellenbosch University

The winds of change are blowing over the world and the chartered accountancy profession as the future chartered accountant faces an exciting yet volatile; uncertain; complex and ambiguous world.

SAICA's response with the *CA2025: The Competency Framework* (SAICA, 2021) has prompted tertiary educators to actively engage in changes to their pedagogical models for this. The acumens in *The Competency Framework* have broadened the focus to include business, digital, relational and decision making (SAICA, 2021). As technical skills still get graduates "*in the door*" (Low, Botes, Dela Rue & Allen, 2016) and employed, the emphasis on "*being more human*" (Barac 2009; Crawford, Helliard and Monk, 2011) must scaffold the technical skills through the enabling acumens on a larger scale. Specifically, *reflection*, as a tool for lifelong learning, together with the skill to learn-unlearn-relearn have also been widely emphasised by the profession (Why lifelong learning is imperative for the CA(SA) of the future, 2020).

With this in mind, the third-year undergraduate auditing lecturers at a South African University disrupted the pedagogical approach and structure to teach one of the keystone topics in auditing: "*substantive procedures*".

"*Substantive procedures*" is a topic which requires students to apply a set of auditing principles to a practical scenario which is based on accounting and other rules. In order to substantiate the compliance with the accounting and other rules and the application of auditing principles, students are also required to think about the evidence which is available in the real world and the practical implications and related constraints.

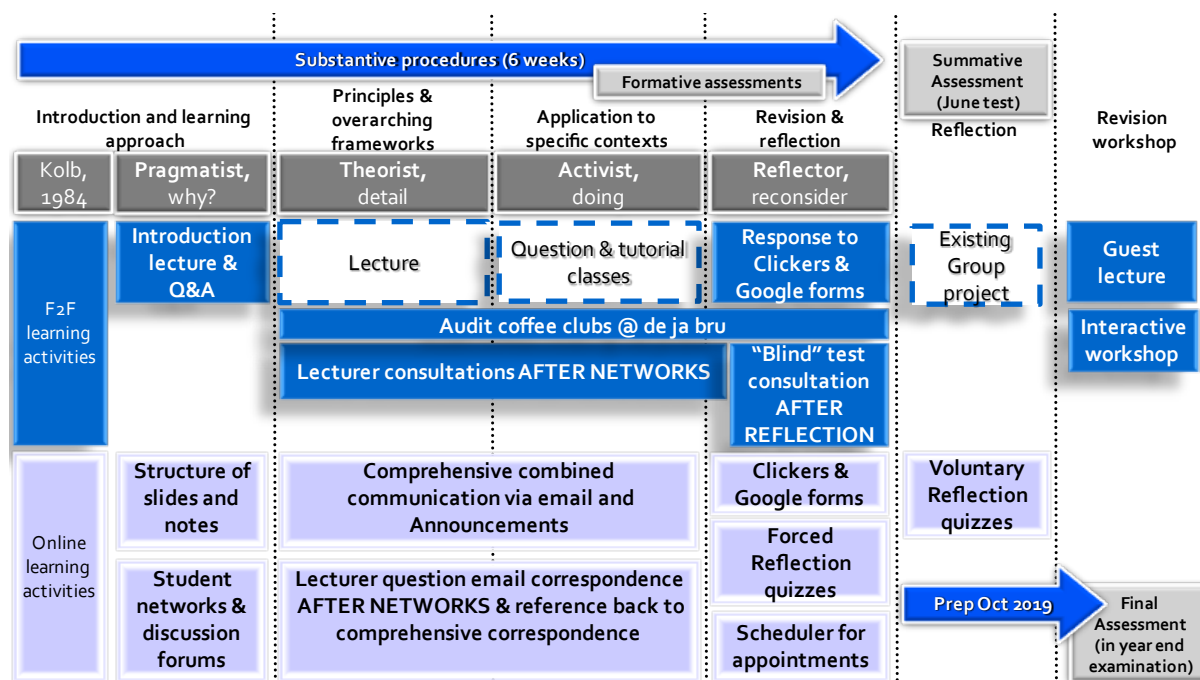
A blended learning approach using both face-to-face and online learning interventions in tandem was used to guide students through the Kolb (1984) learning cycle, specifically including formal and informal *reflection* opportunities. Learning interventions (Figure 1) were created that intentionally presented learning opportunities for students to practice professional skills throughout the learning process.

The purpose of the article is to reflect on the interventions and encourage others to rethink how they teach auditing, in particular in traditionally keystone topics.

⁴ Professor Riaan J Rudman is an Associate Professor in the Department of Accountancy at Stellenbosch University.

⁵ Natasha Sexton is a Senior Lecturer in the field of Economic and Management Sciences in the Department of Accountancy at Stellenbosch University.

Figure 1. An overview of the interventions



(Source: Authors construct)

The lecturers wanted to focus on creating opportunities that would guide students through each element of Kolb’s (1984) learning cycle. As a recognised pedagogical basis for experiential learning students were encouraged to continually ask *why am I doing this?* (pragmatist); to get the *detail backing relating to what was taught* (theorist); *physically doing activities and real-life application* (activist) and lastly *reflecting on what they had learned to identify where gaps existed in their knowledge* (reflector) (Kolb, 1984).

In order to simulate an audit environment, the class was divided into groups (called “*networks*”) of approximately five students from diverse backgrounds before commencement of the topic. They would operate in a similar manner as mini-audit teams. They were required to remain in those networks for the duration of the topic and the group project that would be run later in the year. In addition to working in a group, the purpose of the “*network*” was to create a platform that students had to consult if there was an area of work they did not understand, had any queries or engage in peer learning, before consulting the formal support provided by the Auditing Section. While students were encouraged to engage with the lecturer, a student was not allowed to consult with a lecturer if they could not provide evidence of the engagement they had with their network. Friday afternoon coffee clubs with the lecturers at a coffee shop were introduced to broaden access. The topics for discussion during these coffee clubs included topics ranging from auditing, university life, the accounting profession or anything the students wanted to engage about in an informal setting.

The topic of “*substantive procedures*” was introduced with a face-to-face introduction lecture similar to an audit planning meeting. The introduction lecture clearly set the context of the topic; explained each of the learning interventions and how the topic was going to be taught; articulated the responsibility of the lecturer to teach the topic and the responsibility of the student to engage actively in learning and if not, that they run the risk of being left behind. Clear boundaries were set in terms of lecturer communication and expectations regarding the professional competence in reading and sending written communication between the lecturer and student and fellow students. Students were informed of their “*networks*” together with a discussion around the importance of teamwork in a work environment and principles underlying effective teamwork and collaboration. To emulate the audit team engagement, conditional one-on-one lecturer consultations were contingent upon students first engaging with their allocated “*networks*” and completing *reflections* on their learning through the universities in-house platform. Both conditions created a space for students to engage in peer instruction, collaboration, reflection and to take responsibility for their own performance to discuss a way forward. This curbed the tendency to engage in a lecturer consultation and ask very open-ended questions such as “*I don’t understand the topic*”.

No significant changes were implemented in the remaining face-to-face class sessions for the topic and included lectures, revision classes and tutorial sessions. During the face-to-face lectures two lecturers presented the course concurrently, each focusing on a different aspect. One lecturer focused on teaching the substantive procedures principles, not giving consideration to any specific balance or transaction. The principles took the form of a systematic framework which could be used to identify an approach, develop a framework to audit any balance and apply the framework. Effort was made to stay away from lists of procedures per balance. The second lecturer focused on the application of this framework to specific balances giving consideration to the cycles, documents and processes relating to the balances under consideration. Real-time feedback was obtained from students in class time to immediately address challenges students faced.

This approach encouraged deep learning (Dolmans & Loyens, 2016) of principles rather than surface learning of lists. Both lecturers were present in all lectures. An additional practical facilitated workshop, scheduled outside of class time, was added. The workshop created an opportunity for the students to close the learning loop and reflect on the work they had completed. In order to provide a practical perspective and add credibility to the real world application of auditing, additional face-to-face interventions in the form of guest lecturers were introduced. The guest lecturer from practice focused on the application of auditing in a more technological environment. The additional learning interventions afforded students with opportunities to learn outside of class and engage with the lecturers in an unstructured manner about the learning material and other related matters as would be the case when working.

With a class of more than 700 students, scaling of learning interventions was the greatest challenge. This is why the lecturers chose to support the face-to-face interventions with several online tools on the university platform and Google to scale learning interventions to the whole group. These included:

- individual discussion forums for each “*network*” that only the members of their network could see;
- detailed email communication including several topics at a time;
- quizzes and questionnaires;
- Google forms for focused revision classes;
- class “*clickers*” where real time responses in class guide teaching; and lastly the
- scheduler function to plan student consultations.

The idea with these tools was to allow students to apply the enabling competencies in their learning environment. The tools not only assisted in scaling up the interventions, but also to automate them. For example, many of the responses to the reflections were automated which allowed the student to get feedback without any additional intervention by the lecturers after the initial set up of the reflection quizzes. This also had the benefit of forcing the students to unlearn the bad habits they learnt during their other studies. Instead of making announcements in class and reminding students of due dates, *etc.* the volume of correspondence with students were reduced but the density of the correspondence was increase. One large announcement with all arrangements were included in a long email which required the students to develop the habit of reading emails and reading the emails in detail, identifying relevant details. The students had full accountability if they missed any information included in the emails.

The lecturers’ reflections as well as the students’ perceptions about the learning and the additional learning interventions introduced are being analysed as part of an action research study, however the initial feedback is that on a whole the students believe the interventions enhanced their learning. They also acknowledged that despite the benefits of these interventions, it made them uncomfortable and actually forced them out of their comfort zones. Part of the purpose of the pedagogical approach was to move away from *inter alia* lists of procedures, focus on frameworks, make students responsible for their own learning and development and make them uncomfortable. These interventions disrupted the norm in which various topics in auditing is presented by lecturers and the intent is to make students more uncomfortable in the future.

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ETHICAL LEADERSHIP IN THE CURRENT SOUTH AFRICAN LANDSCAPE

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University of Pretoria

The business ideals of profit and shareholder wealth maximisation cannot be sustainable if ethics are not engrained in the DNA of the business operations. Kwena Maseko, senior lecturer, University of Pretoria, sees the dominance of ethics in current leadership discourses as an appreciation of ethics as the cornerstone of organisational leadership. But what is the role of the professional in all of this?

In the university environment, we see our mission as educators who are 'launching' ethical influencers who reimagine and co-create the future. If we go with John C Maxwell's conception of leadership as influence, we are effectively aspiring to groom future ethical leaders. A recent academic paper by EAJ Terblanche and B de Clercq titled *A critical thinking competency framework for accounting students* has identified ethical behaviour as part of the soft skills and disposition associated with critical thinking required of accounting students. Ethics and the concept of leadership have become inextricably intertwined.

The extent to which ethics has dominated the leadership discourse is symptomatic of the current South African landscape. This landscape played out at the Zondo Commission, where tragic episodes of greed and unethical behaviour by those entrusted with leadership kept us at the edge of our seats. What was even more tragic was the accounting profession's alleged complicity in state capture activities. Financial reporting scandals in the private sector and the associated failures of the audit profession further eroded the moral authority of the accounting profession. However, great difficulties often offer great opportunities, and thus this difficult South African landscape presents CAs(SA) with an immense opportunity to steer the country in the right direction.

IMPORTANCE OF PERSONAL ETHICS

The extension of the concept of ethics from mere professional ethics to include personal and business ethics as well as citizenship is significant, as it recognises that ethical leadership does not begin and end with a code of conduct but is significantly broader. Many of us have observed how leadership contests play out in politics and organisations. For example, campaigns embark on a search for any evidence of the personal moral failure of an opponent whose leadership campaign is gaining traction. In some cases, when the evidence of personal moral failure is incontrovertible, supporters and financiers of the campaign quit, and the promising candidate ultimately drops out of the race as the prospects of success dwindle.

The moral of the story is that personal governance precedes corporate governance. Personal ethics give leaders moral authority to confront ethical issues within their organisations. Leaders who want to make a significant ethical impact in their organisations must recognise that failure to give attention to personal ethics has the potential to erode their moral authority.

It is therefore critical for every professional to have a set of personal values to guide his or her conduct and decision-making and to ensure that ethics become part of his or her personal brand. These values become a critical guide when choosing which organisations to work for – about who to partner with in business. These choices are no longer solely premised on the vision, products, services, and achievements of an organisation, but also on the alignment of moral ethos.

BUSINESS ETHICS

Business ethics are defined as values upheld by a business across all its activities. The tone set by the top leadership is the most effective way to embed business values throughout the business operations. If professionals who assume

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top leadership roles can model exemplary ethical behaviour, such conduct will likely reverberate throughout their organisations.

It is also important for ethics to be recognised as a business sustainability issue. When people focus their energies on money (revenue and profits) they tend to lose sight of the ethical dimension of an activity and its potential impact on others. Using King IV Report terminology, this implies that when a business has a pure capitalist orientation, it abandons its corporate citizenship. Corporate citizenship is defined as the recognition that the organisation is an integral part of the broader society in which it operates, affording an organisation standing as a juristic person with rights in that society but also with responsibilities and obligations.

South Africa has recently experienced a number of business scandals that exposed the ramifications of a short-term profit maximisation focus. The fall of these businesses from glory must serve as a cautionary tale and a reminder that business ethics constitute a business imperative. Leaders can play a role by ensuring that the pursuit of profit maximisation is juxtaposed with considerations about ethics and the impact business decisions have on people and the planet.

CONCLUSION

South Africa is a land of enormous potential weighed down by economic inequality and rampant corruption that threaten its social fabric. Our nation is crying out for ethical leadership, and chartered accountants in particular possess a myriad of skills to solve many of the country's complex problems.

However, technical abilities on their own do not suffice – they must be anchored in ethics to make a lasting impact on society. A strong ethical base in the professional, personal and business sense will catapult not only chartered accountants, but any professional accountant, to the upper echelons of leadership across society, enabling them to alter the moral landscape of South Africa and put it on a positive trajectory to achieve its fullest potential.

ETHICS: A GUIDING LIGHT IN TROUBLED TIMES

Professor Bonang Mohale⁷
University of the Free State

Adapted from the 2021 SAICA Trainee Summit: Embrace the Future
(A recording of the event is available at <https://ca2025.co.za/traineesummit/live-summit/>)
Article written by Lisa Witepski

South Africa is facing a series of stumbling blocks – each seemingly more daunting than the last. Surmounting them requires ethics and leadership, says Professor Bonang Mohale, Chancellor of the University of the Free State, president of Business Unity South Africa and Unite 4 Mzansi™ Chair during his recent appearance at the South African Institute of Chartered Accountants' 2021 Trainee Summit where he took SAICA's aspiring chartered accountants through his thoughts on ethics and leadership.

Mohale says that while the subject of ethics may appear large and complex, it's something most of us learnt at our grandmother's knee. "It's as simple as being wholesome – treating people as you would like to be treated, or refusing to take anything that does not belong to you."

Leadership, meanwhile, is contextual, relevant and current, he says. "Anyone who feels called upon to lead is a leader. However, leaders also need a compelling vision. They need integrity. Leadership presupposes followership, so you need courage and you need to live an exemplary life." These qualities might not be considered especially sexy, but they're what help us earn trust. In turn, a leader must be able to extend trust, and must be ready to celebrate others.

Mohale points out that, as businesspeople, it is natural that we demand leadership from our government – a demand which needs to become more urgent, given the issues the country faces in several areas.

THE LACK OF LEADERSHIP IS CLEAR IN THE CHALLENGES OUR COUNTRY FACES

The economy is a case in point. Although Stats SA recently reported that GDP has grown by 1.2% over the past two consecutive quarters, signaling that we have technically emerged from recession, the reality is that this growth has been jobless. Moreover, it does not stand up to increases in population, and it is negated by both the interest rate and CPI. "We would need GDP growth to reach 3% simply to 'break even'. As it is, we are essentially moving backwards – our discretionary purchasing power and disposable income are being eroded," Mohale notes.

He further laments the fact that South Africa has not moved to take advantage of the commodities supercycle driven by mining, which would have provided a cushion during downturns.

Moreover, many of our gains have been wiped away by the riots which took place in KwaZulu-Natal and Gauteng in July this year. This event, he says, was one of the most severe comments on the state of leadership in South Africa, and has left most of us traumatised. From an economic perspective, the crisis saw us regress by around 20 years and wiped out 1% of our GDP at a time when growth is needed more than ever – as the 11.9 million unemployed (or 74.9% of all South Africans) will attest.

The effects of the riots must be seen against the backdrop of South Africa's economic downgrades by the likes of Moody's, Standard & Poors, and Fitch – all of which have placed South Africa firmly below investment grade. This means that the cost of growing the economy becomes higher, at a time when the quantum of debt remains unchanged.

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Throw in our rolling blackouts, which cause the economy to lose R1.25 billion every time the lights go out – and have done so since they first began back in 2008 – as well as a vaccination rollout campaign which is merely limping along, still a far way from reaching its targets, and Mohale’s concern is clearly understandable. “Visitors to South Africa have declined in numbers from 10.2 million before the onset of the pandemic, to 3.5 million, reducing tourism’s contribution to the GDP from 9.8% to 7.5%,” Mohale informs. This example demonstrates why protecting the population against Covid isn’t necessary only to save lives – it is about saving the economy, too. South Africa remains on a backfoot here, however: although our health sector should be vaccinating 400 000 people per day if we are to meet the stipulated target of immunising 67% of the adult population by the year’s end, public sector hospitals and clinics remain closed on weekends, keeping the goal out of reach.

Mohale maintains that if we do not address these problems, we are certain to face more challenges going forward. “After all, a child that does not feel the warmth of its village will eventually burn it down to feel that warmth,” he says, quoting an African adage.

THE CASE FOR ETHICS

But how can we avoid such a crisis? The answer, says Mohale, lies in a return to ethics – and to do that, we need to develop courage. “It may seem hard, but the only way to do this is by taking that first step. We need use what we have, and fine tune as we go along, rather than waiting for conditions to be perfect. Again, our own country serves as an example Here: our challenges have mostly come about not through a lack of resources, but through how we use them. As George Patton once said, ‘Wars are won through good execution, not good plans.’” Mohale says once you have taken the first step, you are able to work towards excellence, because you can build on your progress every day.

Is it possible to regain ethics once they have been lost? Perhaps – and as a society that appears to have lost its moral compass, it is vital that we try to do so. The solution here, according to Mohale, is establishing a strong opposition which can keep authorities in check.

“We should not look at ethics as a choice between one thing and another; rather, we need to embrace it as a discipline which allows us to have the best of all worlds,” Mohale continues. “For example, companies don’t have to choose between people and profit. To the contrary; if you choose to put your people first, they will be inspired to work hard, and the profits will follow. In this way, ethics ensures we are profitable in the short term, while building resilience over the long term. And that’s critical, because ethics are for life.

“There is no trade off between ethics and ubuntu,” Mohale concludes. “Our common humanity means that all life is sacrosanct – and we all need to help each other reach our full potential.”

FAILING OUR COUNTRY BY NOT TEACHING EMS CORRECTLY

KM Academics⁸

EMS is one of the subjects that school offer at senior phase (CAPS curriculum) as an introduction to commercial subjects. It is a subject meant to introduce three disciplines, i.e., Accounting, Business Economics & Economics and its foundations plays a vital role in influencing a learner's subjects' choice when they get to FET Phase.

Over the years as a country, we have experienced a significant drop in the number of learners who feel confident enough to choose to study commerce related subjects when they get to FET phase. The link can be made to the quality of the foundation learners receive at senior phase level.

Teachers are seldom equipped to teach all aspects of EMS (Accounting, Business Studies & Economics) and tend to spend more time on their field of expertise whereas EMS requires teachers to be able to teach all the three disciplines. In most instances one educator will have sound skills, knowledge and comfortable to teach Economy part of EMS, and the other teacher will be comfortable with Financial Literacy part of EMS, and the other teacher Entrepreneurship. Limited time constraints also do not allow these three different educators to be allocated to teach one class, so that they will be able to exert their expertise accordingly.

Financial literacy (Accounting) part of EMS happens to be the part that suffers most due to lack of sufficient and convenient learning resources. In addition, most educators do not have sound accounting background and this affects their confidence to teach financial literacy content. Financial literacy content that should be taught in EMS forms part important background that learners need. Financial literacy content alone is more than the content of Economy & Entrepreneurship combined. Meaning if financial literacy content is not well taught to the core, this affects the learners' confidence in the subject and they end up failing the subjects or obtaining average pass mark. The problem is further extended, where learners will develop a negative attitude towards Accounting as the main source that effects their performance in EMS.

The following factors contribute negatively toward teaching of financial literacy: Lack of sufficient teaching and learning material, lack of sufficient content knowledge to teach Financial literacy by most teachers, subjects advisors been unable to give full support to all schools allocated due to time constraints, especially during COVID-19 conditions, lack of sufficient learning programmes provided by Department of Basic Education and other partnering stakeholders. There is also a lack of smooth integration between teaching, learning and assessment.

Due to tight budget constraints most schools find themselves being unable to procure sufficient learning resources that will assist educators to expose learners to sufficient content that will enhance learners' knowledge of the subject. Most schools are only able to procure one textbook that combines all three disciplines and the amount of content covered in such material is very limited and does not give more insight in all aspects of EMS.

In addition to the existing challenges, the COVID 19 pandemic has had an immense impact on education, particularly on traditional face-to-face teaching and learning methodologies. This opened door to online teaching and home learning. While we embrace the new methods of teaching and learning, inequality within our system still exists, many learners just do not have access to the online platforms and as such many parents are not well equipped to be able to assist their children with their school work. In many communities, teachers are still the only resource for learning. Due to the challenges created by the pandemic, the situation is getting worse

⁸ KM Academics is a black owned and operated publisher and distributor based in the East Rand that targets its publications at grade 8 & 9 learners to instil and solidify the practice of accounting in South African schools.

IMPLICATIONS

As a result of all mentioned challenges, learners become victims; they have limited exposure to Accounting when they progress to the next grade and as a result are not likely to continue tertiary studies in Accounting field. Learners' knowledge, skills and values obtained are definitely compromised.

The status of EMS is noted by poor grasp of knowledge in FET and poor performance in Accounting Grade 12. This is as a result of lack of foundation from Grade 7 to Grade 9.

FACT

For our economy to survive, it needs a generation with sound accounting and financial literacy knowledge and skills.

Accounting knowledge is the engine (cog in the machine) for other professions to survive and to be sustainable. And that means we need to focus our efforts on improving EMS education in order to equip our country with the accounting and financial literacy knowledge it needs.

KEEPING PACE WITH TECHNOLOGY IN THE WORKPLACE – ESSENTIAL FOR BUDDING PROFESSIONALS

Kevin Ssemwogerere⁹

Business futurist and digital transformation speaker

Adapted from the 2021 SAICA Trainee Summit: Embrace the Future

(A recording of the event is available at <https://ca2025.co.za/traineesummit/live-summit/>)

Article written by Lisa Witepski

If you don't know the difference between digitisation and digitalisation, or AI and automation, it's time to brush up on your knowledge. The good news, though, is that keeping pace with technological development isn't nearly as complex – or daunting – as it may seem.

These are the beliefs of Kevin Ssemwogerere, who is a Corporate Venturing Lead in the Wholesale Clients Division of one of the largest banks in Africa. Speaking at the South African Institute of Chartered Accountants' (SAICA's) Trainee Summit, Ssemwogerere says he uses his Silicon Valley training to build digital platforms for businesses. In his own words, his job is "like being an entrepreneur working inside a big corporate, but in the digital environment."

Ssemwogerere says that the question he is most often asked by people trying to orientate themselves around the digital space is: "Will a robot take my job?" His answer? "The reality is that, as the old adage tells us, the more things change, the more they stay the same. The Fourth Industrial Revolution undeniably introduces an element of uncertainty, but it also presents us with opportunity – and that opportunity can be realised if we continue to reinvent ourselves, so that we are able to remain relevant. The core of what we do may not change, but you need to reevaluate where you fit into this new world. If you're honest with your answer, you'll find your place."

Fortunately, most of us have all the tools, support and resources we need to navigate the digital space – but, says Ssemwogerere, none of these are as important as having the correct mindset. "The role of the accountant is being redefined by the Fourth Industrial Revolution, but this is not the first time this has happened," he observes. In fact, he adds, the role of business is constantly in flux, and with these changes, factors like accountability, transparency and financial management come to the fore. It's critical for the accounting profession to respond with these changes – and, to date, it has done so admirably, as developments such as the evolution of accounting standards proves. Ssemwogerere believes that these changes are unlikely to stop, or even slow, which means that as a key driver of financial strategy, the profession will face ongoing pressure to keep pace. "Financial strategy ultimately affects many pillars of a business, so we cannot underestimate the importance of financial professionals in the business environment," he says.

WHERE WE'RE MOVING

What, exactly, does the requisite mindset entail? Ssemwogerere notes that it is underscored by digital acumen which is, itself, made up of business acumen and digital knowhow. This allows accountants to remain relevant in an increasingly digital world – important, because although there will always be jobs which only an accountant is uniquely qualified to perform, accountants also have to understand that how they do these jobs may necessarily change.

As more and more businesses harness the efficiencies offered by technology as a tool of business transformation, this will become increasingly important – especially since those that don't will lose relevance. That said, there are a plethora of technologies available, and not all of them are applicable or appropriate in every situation.

⁹ Kevin Ssemwogerere, CA(SA), is a business futurist and digital transformation speaker with a career history in the areas of academia, audit and investment banking. Currently, Kevin is a digital innovation Corporate Venturing Lead in the banking sector. He is also the co-founder of a tech start-up which built a first of its kind social-eventing mobile app and was a 2020 SAICA Top 35 Under 35 finalist.

This is where digital acumen comes in; it's about understanding which technologies should be used to position you to make better decisions for the business and help the business keep growing and serving customers optimally. Obviously, the more you keep up with trends and developments, the better you'll be able to do this. "You don't need to have a thorough understanding of technologies from a technical perspective, but you should be able to identify how it can help you further your particular role within the broader organisational context," Ssemwogerere explains.

NEED TO KNOW

Since it is vital to understand how technology affects your performance no matter what your position within an organisation, it helps to be clear on some key terms, Ssemwogerere says. These include:

- Digitisation is the migration or recalibration of information onto a digital format. Although frequently used interchangeably with the term 'digitalisation', it is vastly different; the latter refers to digital acumen and your understanding of technology trends so that you can apply them to your role.
- 'Automation' brings to mind building robots. In accounting, this may be applied to robotic process automation, which helps to increase the efficiency of repetitive tasks. For instance, a job such as completing VAT returns could be handed over to a bot, which would not only finish the job more quickly, but would also reduce the margin for human error. It's automation that makes people fear for their jobs but, Ssemwogerere points out, they may actually help humans by removing drudge work and thus allowing them to focus on more complex tasks, such as interpreting information.
- AI: In the accounting space, the most useful application of artificial intelligence lies in the development of predictive models. This may help an organisation predict revenue for the next 20 years, or even forecast how a major unforeseen event (such as Covid) could affect current revenue. AI also encompasses machine learning; the process whereby machines are able to 'learn' to replicate human actions at a more sophisticated level. For example, a machine can be taught to write an in-depth financial report.
- Blockchain: Although typically referring to cryptocurrency, there are broader applications for blockchain. The idea here is to remove the element of mistrust between humans by ensuring that communication takes place between computers rather than people. Here's an example: when you receive an email, there is no way you can confirm that your email server has verified the sender – you can only trust that it has done so. Blockchain removes the possibility of error here by verifying information at its source. This technology is particularly useful in creating smart contracts. It also has applications in the finance function, where it can be used to protect legal or risk information.
- Cloud computing: A virtual platform which makes it possible to store information or host events without a physical space.
- Data analytics: This is one of the most important emerging concepts; referring to using a combination of all technologies (such as AI and automation) to enable a business to pick out key trends from data. These can be used to make better business decisions.
- Internet of things: This term relates to devices communicating with each other over a virtual network.

DIGITAL ACUMEN IN THE REAL WORLD

Just as you can build business acumen, it's possible to develop your digital acumen by reading up on technology trends. Ssemwogerere recommends drawing up a personal development plan which takes into account your daily workplace tasks and responsibilities, and finding out more about the specific technologies you can use to perform these more efficiently. "Over time, your proficiency in this area will increase naturally and you will be able to marry your digital and business acumen seamlessly."

The good news is that since technology is all around us, it takes very little effort to acquire the relevant skills: look up training modules (LinkedIn and YouTube are good resources here) or take a short course.

More good news is that applying your digital acumen helps you add value for clients by assisting them in making sense of the world - but remember that interacting with technology inevitably leads to fatigue, and clients will always appreciate the human touch.

ON BEING RESILIENT, ORGANISED AND PRODUCTIVE

Desmond Phuti¹⁰
North-West University

Let's start at (some kind of) the beginning.

In my dealing with the Thuthuka funded students for the last decade or so, I can confidently echo what, for some in the know, is a fact that, depending on how these students handle, negotiate and navigate their tertiary education space challenges, there-in lies the potential for a fulfilling future, or a future filled with regretful, all the 'woulda coulda and shoulda'.

This much, about these (and other similar positioned) students can be said, that:

- Pursuant to fulfilling their life's dreams, and upon successfully completing their grade 12, these students move from the established and reasonably safety of their home environment, to an unfamiliar higher education territory; the latter's culture and other behavioural codes are, in many instances very foreign to the students in question
- Just when you thought they had overcome the hurdled of their lifetime, then they, I guess like many other people, would find themselves, crisscrossing the employer landscape in search of better offers as well as career growth.
- This community of students, from the moment they left their homes at the end of their secondary schooling years, they find themselves living in communities without knowing neighbours and without the support of extended family.

All these necessary life changes, could be very traumatic and even be the cause of the students' inability to do well in life in general. It is this understanding that Thuthuka saw it as imperative to run, for the last two years, a series of awareness raising and psycho-social support workshops on the subject of resilience.

SO, WHAT IS THIS RESILIENCE

Many of us understand resilience as an inherently human ability to "bounce back" after facing challenges.

While it must be stated upfront that challenges and disappointments are an inevitable part of life, we are, sometimes, dumfounded at the ways in which people can, first, survive, and subsequently thrive, despite their challenges and setbacks. The truth about resilience is that, we all have the ability to develop the skills that will put us on the path to resilience. "While we understand trauma as a common human experience, we also know that half to a third of children exposed to trauma go on to achieve successful and well-adjusted lives" (The Melissa Institute, 2008).

According to Michael Unger of the Resilience Research Centre, resilience has to do with a person's ability to make plans and follow through with them, to problem solve, and to manage impulses and feelings. Resilience is more than a skill – it's an adaptation.

The question then becomes, "how well adapted are our students (and perhaps our university systems) to using these life's unavoidable setbacks as stepping stones to become even more prepared to meet future challenges head-on, and win?"

Psychology Today (2015) argues that human beings have, within themselves, what it takes to create better health/life.

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The following three factors are key to promoting psychological resilience:

1. Internal support: Abilities and skills such as communication, problem-solving, behavioural and emotional regulation, hope, and a positive view of oneself
2. External support: Caring supportive relationships with friends, family, neighbours, etc.
3. Existential support: Cultural values and faith/belief systems. Culture cuts across all factors promoting resilience and affects the way people form networks, what skills and abilities are valued, and determine their core values and beliefs. In this way, a person's culture may impact their trauma response and tap different resiliencies.

Developing resilience helps us to face the great challenges of life; those that arrive without warning and, those that we believe will happen to other people, but not us. The best protection against ongoing life's challenges remains, undoubtedly, being resilient.

While many students may have lived their lives in violence-infested environments, there are also many who have not had this misfortune. Whether or not our students have experienced trauma, our universities need to adopt trauma-sensitive, culturally responsive, and resilience-focused approaches to help ensure that all students have the opportunities to learn, grow, and thrive, during their studies and beyond

ABOUT ORGANISATION, PROCRASTINATION AND PRODUCTIVITY

Now more than ever, I think, and thanks to Covid-19, our students, and colleagues alike, have been battling to stay organised and productive. This battle has also been at the heart of many feeling stress and overwhelmed. In order to avert this and to stay organised, one should start with their values.

To demonstrate the closeness of the relationship between being organised and your values, let us, for a moment, assume that you were lying in bed feeling really unwell, the question that you should be asking yourself is, 'what would I get out of bed for?'

When you are clear about how you want to spend your time daily, it makes it very easy to say "No" to tasks, activities and requests for your time that are not consistent with your core values. Personally, I know that I will get out of bed for my family, my business, and my health and wellbeing. Any request for my time that falls outside of these three key areas will not be prioritised.

GOAL SETTING

I do not think that many of us, myself included, are thorough enough when it comes to setting goals for our lives.

So, having bedded your values down, you need to invest time planning your short-term (three to five year) goals. This is all about designing what the life you love should be characterised by, going forward. You need to ask yourself exactly what role, what business, what lifestyle you will be living in five years' time, and work towards achieving all that. When setting your goals, go all the way for gold – there is no point in shooting for less. No one ever changed the world with less.

TO-DO LISTS

Flowing from your goal setting, it is important to break down your goals into small, actionable steps. Each actionable step becomes a "to-do" on your to-do list. So, having a personal productivity system is crucial to staying engaged and energised in your life. Rather than holding everything in your minds, you need to set up external systems that help free up mental space so that you can be more focused. The good old to-do list is a great example – it enables you to collect into one spot all the tasks that are vying for your attention.

Research tells us that those who wrote a detailed to-do list for the following day fell asleep 15 minutes faster than those who didn't.

Centralising all your activities into one tool, like Microsoft Outlook or Gmail, can have a huge impact on your work life.

DEADLINES AND ACCOUNTABILITY

Set realistic deadlines into your calendar for each task. Each “to-do” you execute takes you one step closer to your goal. My mindset is that it is your life, so you need to control the agenda.

Deadlines provide a sense of structure and balance for us. While every person responds to deadlines differently, they are a key tool to better time management. By setting deadlines, you are putting a concrete need in your schedule, and it helps prevent it from being forgotten or lost in the near future.

Deadlines give us a sense of accountability when it comes to things we either want or need to get done. So whether you write them on a calendar or program them into a mobile device, the next time you plan to do something, set yourself a deadline first and stick to it. You’ll find that when you take the time to schedule them, you’ll make time for other things.

Tips when setting deadlines:

- Keep your deadlines in arm’s reach – write them down where you will see them
- Set periodic reminders – give yourself reminders that a deadline approaches
- Pad your actual deadline a little – give yourself some extra wiggle room

REMOVING OR LIMITING TIME-WASTERS

A time waster is something that can distract you or take away from the task at hand. They can occur at home or at work. Removing or even limiting some of these wasters have the potential to improve concentration and can help one to stay focused on what must be done

Most people use a calendar to manage their activities, but use a mix of different tools when it comes to managing tasks and priorities.

We need to become more efficient with how we deal with email, so we can get our heads out of our inbox and focus on what’s important.

Some people could have hundreds, if not thousands, of emails in their inbox. I believe you should get your inbox down to zero at least once a week.

An inbox is not a storage space, a filing system or a to-do list. It is a workspace for new information coming in. People waste a lot of time trying to organise their emails into 101 different folders. If you have too many filing folders, it slows you down when it comes to filing and finding things again. It is quicker to find something in one folder than it is in 101 folders.

Try to play the long game. Instead of focusing on the short term, we need to set ourselves up for the long term and how we can be most effective tomorrow. Ask yourself what you can do today to give you more time in a month and identify what is important versus urgent to avoid getting caught up in other people’s to-do lists.

Build in recovery time. To “show up” in class, we need to ensure that we also take time for relaxation and recovery. We don’t expect our mobile phones to keep working without being charged at the end of the day.

IN CLOSING

How can we expect ourselves to stay engaged and energised if we don’t take time to switch off? Creating a routine that includes time to detach from our chores benefits our bodies and our brains. We will be more resilient, productive and creative when we get back to work.

OVERCOMING THE CHALLENGES OF ONLINE TEACHING AND LEARNING: A PROPOSED SOLUTION

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In 2020, following the first hard lock-down, academic staff started planning a revised academic offering for emergency remote online teaching. Online learning material was made available in record time. Universities pivoted to a new mode of delivery with many lecturers not having experience of the online space. The context in which higher education found itself had changed overnight. There were many tools that lecturers had not used to teach before. This process was a steep learning curve for students and lecturers alike. It was assumed that everyone knew it was not about taking the face-to-face experience and replicating it online. For some, however the expectation of replicating the face-to-face experience online was there. In planning how to teach, three key principles were considered: (i) how to make students feel like they are not alone, (ii) how to make the transition as easy as possible for students and (iii) how to assist students through effective online learning activities that would engage them in their own learning process and make a success of the academic year. Arguably, these principles were almost exclusively student-focused and focused on ensuring a seamless transition to online learning. The purpose of this article is to highlight some of the challenges members in academia and students had transitioning to online teaching and learning, as well as presenting an example of online learning which contributes to deeper learning on a digital platform.

CHALLENGES FOR LECTURERS

Despite the changed context in which lecturers were required to work, the traditional academic and professional expectations on staff remained unchanged – this in addition to them having to navigate the new world of life, work, balancing personal and professional decisions as well as disruptive technologies. The professional decisions extended to finding the right balance between teaching obligations and research commitments. Teaching obligations required lecturers to manage student needs and increased student demands. These competing demands become more difficult in a digital environment.

Two approaches we broadly observed: (i) replicate face-to-face experience in video online or (ii) amending the teaching and learning approach to leveraging off the functionalities offered by online platforms. Each has its own challenges and arguments for and against. The reflections noted below do not explicitly distinguish between these two approaches.

Online teaching was more time consuming than face-to-face teaching, mainly because lecturers were required to learn how to teach online, while teaching at the same time. Course design and grading were also time-consuming activities which required re-engineering. The reinvention of the core responsibilities in academia required significant initial resources investment in time. The need to provide a student with a standardised online experience required time to develop standards, guidelines and collaboration time to ensure a consistent feel and appearance in the material and online experience. Typical small tasks become time-consuming. Besides the volume increase in correspondence over multiple platforms, written communication is more time consuming than verbal correspondence. Instead of searching

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for answers in course material, students asked every small question via email or on a discussion board with the expectation of instantaneous responses. Each piece of correspondence is required to be answered. Since students can reply to other students posts, these discussions needed to be monitored by teaching staff to ensure the content being posted was factually correct.

Limited time for teaching related activities was not the only problem influencing staff priorities. Given the difficulty in authenticating students and authenticating a student's work as his/her own, the integrity of assessments was called into question. The number of disciplinary cases at universities across South Africa increased with regards to charges of collusion between students, students writing on behalf of other students, copy and pasting from examples and using content sharing platforms and subscription services to cheat and get assessment answers.

Other challenges arose around student evaluations. Besides low response rates, students attributed technological and environmental issues with lecturers' performance and ability.

This imbalance in time-allocation and additional priorities manifests in the psychological impact relating to the move to an online model of delivery resulted in both lecturers increased sense of isolation and anxiety. This also impacted the student learning experience.

STUDENTS LEARNING EXPERIENCE

Not being able to engage with peers between lectures and sitting at home also increased students sense of isolation, lecturers noted a decline in student well-being with lecturers being expected to provide students with emotional support, despite not being trained to do so, nor having additional resources available.

Where recordings and live-streaming replaced the in-class experience, the student's learning experience was diminished in subtle and explicit ways. Students missed the nuances of a lecturers' facial expression and gestures, while lecturers inhibited their action to accommodate the modes of presentation that play up to the camera. Lecturers become cautious about interactive formats for the fear of making mistakes or saying something controversial.

Having recordings available led to decline in attendance of the live lectures further de-personalising learning. Online teaching negatively influenced active learning habits such as sustained attention and effective notetaking. Many students took short cuts believing that they could rewatch the recording or take screenshots of notes. This reinforced passive learning and encouraged procrastination and then "binge studying" around examinations rather than keeping up to date with their work.

Given students preference for passive learning associated with recordings, once streaming and recordings were introduced, complaints regarding the differences in teaching styles of lecturers increased. To avoid the complaints, lectures tended to or were forced to take the path of least resistance, irrespective of the pedagogical motivations.

RESPONDING TO THE CHALLENGES

In order to address some of these challenges, a new way of thinking, using an approach grounded in established principles and pedagogy was required. With this in mind, the approach to teaching and learning of the topic of: Computer Controls in the third year Auditing module was amended to allow students to pace themselves and allow for continual engagement and feedback in the online space based on the principles from the Kolb (1984) learning cycle.

The objective when designing the online learning material was to make online learning accessible to all in an equitable manner (i.e. being data light); to use existing learning tools (such as textbooks) and students' time as effectively as possible; and to create learning interventions using the tools online to help students take responsibility for their own learning. This was also an opportunity to create learning interventions that allowed students to practice many soft skills such as adaptability, self-management, self-awareness and time management which had never presented itself in such a significant way before.

The topic of Computer Controls, presented over a six-week period, by nature requires that students learn what controls can be expected in a computer environment (traditionally theory lectured in class) and then students need to be able to assess “clients” computer controls for risks and recommend improvements thereto.

In planning how to teach this topic online several learning interventions were developed. These interventions consisted of five key elements.

Element 1 – Greeting video and infographic overview:

To give students a face to the voice and create a space where they did not feel like they are only engaging with a computer the start of week 1 consisted of a welcome video where the topic and the context of online learning was introduced. This was supported by an overview infographic (for how the learning material was to be covered) and a detailed guideline on what learning materials were available and what learning activities would take place when. This also included what the appropriate learning materials for each week would be. Each week thereafter was structured in the same way to create a sense of consistency and predictability in order to help students to navigate the learning cycle including elements that encouraged them to be a pragmatist (asking why?), theorist (detail), activist (doing) and reflector (reconsider) (Kolb, 1984).

Element 2 – Weekly learning opportunities:

To account for different learning styles, students were given several learning opportunities each week of the programme. To allow students to learn at their own pace, students were provided with the material for the week, as opposed to each lecture hour. The learning opportunities included six sections.

1. What should I do this week? – this provided an overview of where the students were in the material, as well as giving the “what?” was being covered and which learning activities they need to engage in for the week.
2. Lecture notes & question pack – this included slides with detailed page references to the textbook and lecturer written commentary. Students were provided with various questions, each with a different purpose.
3. Other online resources – this included videos, articles, reading activities and reflection intervals to consider the learning.
4. Reflections – this required students to reflect on their understanding after each core concept by completing a reflection activity in the form of a reflective paragraph of learning, summarisation of learning in different context or even watching a video to apply and answer questions on what students had learnt. This was a completely new way of asking students to stop and think/reflect using tools online. Lecturers gave students personal feedback on some of the reflections and used them as a tool to monitor students’ engagement and progress. Students that did not remain up to date and did not complete the reflections received a personal email, with many students replying and committing to catch up on lost work.
5. Class questions – featuring detailed colour annotations assisted students in how to approach scenarios using a principle-based approach and get a complete answer.
6. Live chatroom sessions – these were hosted weekly using synchronous chat room sessions, which morphed into weekly live online question and answer sessions.

All this was underpinned by an open invitation to ask questions through online discussion boards and face-to-face video/audio lecturer consultations.

Element 3 – Weekly tutorial classes:

Here students could practice applying the principles learnt to scenarios with real time support in the form of videos and synchronous lecturer availability for questions.

Element 4 – Exam technique Doodley:

To assist students with areas that they struggled with, a Doodley video covering exam technique was created to help them to prepare for the main assessment was developed.

Element 5 – Virtual revision class:

In response to specific problem areas identified by students, a virtual revision class addressing concerns that students had raised based on their reflection and challenges was created. A virtual lecture venue was hosted where students could ask real-time questions.

CONCLUSION

Emergency remote online teaching was the first for many, both students and lecturers. It influenced the students' learning experience, while requiring lecturers to fundamentally reconsider what they do and how they do it.

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PREPARING CHARTERED ACCOUNTANTS WHO ARE FIT FOR PURPOSE IN THE FOURTH INDUSTRIAL REVOLUTION

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INTRODUCTION

Competence is a highly prized currency in a contemporary professional accounting context. Professional accountancy bodies are aligning their competency frameworks to reflect the skillsets the Fourth Industrial Revolution (4IR) needs (AICPA [American Institute of Certified Public Accountants], 2015; ACCA [Association of Chartered Certified Accountants], 2016; CGMA [Chartered Global Management Accountant], 2019). The 4IR, includes physical hardware supporting cyber systems, and the Internet of Things and cloud computing (Richins, Stapleton, Stratopoulos and Wong, 2017), and chartered accountants' (CAs') digital skillsets are being challenged (Birt, Wells, Kavanagh and Bir, 2018) to the point where CAs' future usefulness is being questioned (Borthick and Pennington, 2017; Moll and Yigitbasioglu, 2019).

Automation's impact on CAs' work is intensifying and accelerating (Bellman and Göransson, 2019; Huang and Vasarhelyi, 2019; Kokina and Davenport, 2017): they will no longer primarily act as "score-keepers" and "number-crunchers". Traditional accounting functions, such as tax preparation and most aspects of financial reporting will undergo radical reshaping (CGMA, 2018a) as they evolve into integrated consultative functions supporting value-based decision-making (CGMA, 2018b; 2018c). Automation and smart software systems (such as cloud computing) are replacing clients' current work methods, and CAs are increasingly using sophisticated smart technologies (e.g., data analytics, robotics, artificial intelligence (AI) and blockchain) to enhance their traditional methods (Birt et al. 2017). The use of big data, statistical analysis and mathematical modelling (all computer-based) (Appelbaum, Kogan, and Vasarhelyi, 2017) present many opportunities to businesses, but their accountants need advanced digital skills in order to generate value from them (Richins et al. 2017).

Against this background, the following question became compelling: What are the digital skills that CAs need to remain fit for purpose in a 4IR world?

The study, which is a focus of this paper, followed a qualitative research approach in addressing the aforementioned question. It used data gathered from 44 interviews with informed individuals about changes they saw as essential for CAs' future skillsets. This study's contribution lies in its practical value: accounting professional bodies, practitioners, educators and trainers could use the findings to refine their programmes to ensure CAs obtain the digital skills and mindsets required to retain their relevance to 4IR entities.

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The remainder of the paper is structured as follows. The next section highlights CAs' need for digital skills. Thereafter, the data collection and analysis methods are described, and followed by a discussion of the findings. The paper concludes with the identification of areas for future studies.

NEED FOR DIGITAL SKILLS

Competence is commonly viewed as the ability to perform a role to a defined standard, within the working environment (IAESB [International Accounting Education Standards Board], 2015). Professional accounting bodies already acknowledge that future roles of accountants will be significantly different from their present roles and various professional accounting bodies have already refined their competency frameworks to emphasise digital skills (refer to Moll and Yigitbasioglu, 2019 for a synthesis of the literature).

Accelerating digitisation of accounting functions (more advanced enterprise resource planning [ERP] systems, increasing use of on-line transactions and the cloud, and exponentially increasing use of data [AICPA, 2015]), means the demand for accountants (and CAs) with digital skills is growing (Birt et al. 2017). They need enhanced analytical skills, including the ability to handle both structured and unstructured data (Cao, Chychyla and Stewart, 2015; Vasarhelyi, Kogan and Tuttle, 2015), select appropriate analytical tools, and interpret the results (Huerta and Jensen, 2017). Thus, CAs need big data competence: this includes a deep understanding of the data; creativity and insight to appropriately interrogate the data; and the ability to use data science applications including big data analysis, business intelligence and text and process mining (Griffin and Wright, 2015; Huerta and Jensen, 2017; Richins et al. 2017). The ability to use big data visualisations proficiently can reveal useful patterns and provide increasingly valuable information to inform decision-making (Rose, Rose, Sanderson and Thibodeau, 2017). When deciding on the appropriate type of big data to use, CAs also need to assess risks associated with big data repositories and evaluate legal and commercial consequences of potential breaches (Huerta and Jensen, 2017).

Big data and cloud computing facilitate the use of AI, all offering great cost reductions (Bellman and Göransson, 2019; Huang and Vasarhelyi, 2019). AI is increasingly being seen in business systems, evidenced in decision-making intelligence and predictive behaviour (Kuenkaikaw, 2013). Accountants are already using business intelligence and visual analytics to communicate analysis results, and by using hypothesis-based predictive analytics, they are able to predict the likelihood of financial events (Kokina and Davenport, 2017). Routine accounting tasks that require minimal professional judgement are already being automated, and with improvements to AI systems, the complexity of automated tasks will increase, thus challenging the relevance of CAs in future (Huerta and Jensen, 2017, Moll and Yigitbasioglu, 2019). Robotic process automation (RPA) automates tasks according to a set of rules that are in line with the business processes (Bellman and Göransson, 2019). These 'robots', consisting purely of code, can perform humans' tasks and with the addition of AI, RPA can be developed into intelligent process automation (IPA) that performs both analysis of unstructured data and higher order decision-making tasks (Bellman and Göransson, 2019). Although future CAs might not necessarily need to be proficient in programming language, they will be dependent on RPA, and should therefore have a general understanding of code structure.

Blockchain, regarded as 'a type of distributed ledger technology where multiple copies of the same ledger are shared among the members (nodes) of a large network' (Moll and Yigitbasioglu, 2019:7) makes data intrinsically reliable and verifiable in real-time (Rozario and Vasarhelyi, 2018). While blockchain systems have great potential for accounting because they can operate largely autonomously (Dai and Vasarhelyi, 2017), their uptake is 'slow and steady' and they are not yet considered as disruptive (Moll and Yigitbasioglu, 2019:7).

In conclusion, current literature supports the view that accountants need to demonstrate digital skills (e.g., Huerta and Jensen, 2017) and amplifies calls for research 'to determine the new skills and competencies accountants may need to master to remain relevant and add value' (Moll and Yigitbasioglu, 2019:1). This study is a response to this call. The next section describes the research method.

RESEARCH METHOD

A qualitative research approach was adopted for the study, which forms part of a comprehensive research project tasked with revising the competency frameworks of the South African Institute of Chartered Accountants (SAICA) and

the Independent Regulatory Board of Auditors in South Africa (IRBA). Ethics approval (for the comprehensive research project) was obtained from the university conducting the research.

Interview participants were selected purposively and invited to share their perceptions of the digital skills future CAs will require, amongst other issues. Participants represented multiple stakeholder views (refer to Table 1) (ensuring triangulation) and were identified by the SAICA and the IRBA.

Table 1: Participant information: Categories and the number of participants

Categories	Description	Number
Assurance providers (AP)	Big 4 partners	6
	Non-Big 4 partners	10
	Auditor General South Africa	4
Technology experts (TE)	Technology experts in business, also working in consulting divisions of audit firms	7
Executive and high level management (EM)	Financial services	4
	Other industries	4
Futurists (F)	Individuals with a specialty or interest is futurology	2
Academia (A)	Private and public higher education institutions	3
Other prominent figures (OPF)	Governance experts	4
TOTAL		44

Forty four (44) interviews, lasting approximately an hour each, were held between November 2017 and November 2018. All participants gave their consent to be interviewed (their anonymity was assured); interviews were recorded, transcribed, and checked; and transcriptions were then reviewed by the participants.

The interviews were semi-structured and based on questions informed by a review of relevant literature and feedback received from the steering committee of the comprehensive research project. The lead researcher analysed the interviews (using Atlas.ti qualitative data analysis software) and the analysis was independently reviewed by the other authors.

FINDINGS AND DISCUSSION

In answering the research question (*What are the digital skills that CAs need to remain fit for an Industry 4 world?*), three themes emerged from the data: (1) the role of CAs in the changing business environment; (2) technologies impacting the work of CAs, and (3) digital skills for CAs. The discussion of the findings addresses each of these themes.

Theme 1: The role of CAs in the changing world

Participants generally agreed that the business world is changing. They recognised the disruption caused by ‘the whole digitalisation of the world’ (TE), ‘the fact that everything is run off the cloud’ (TE), the ‘hype about big data’ (AP), and the ‘emergence of blockchain and similar technologies’ (AP). The statement ‘it’s all about IT’ (TE) succinctly summarises their thinking. The literature confirms that automation is already impacting CAs’ work (Bellman and Göransson, 2019; Huang and Vasarhelyi, 2019; Kokina and Davenport, 2017). One participant cautioned that ‘people talk of disruption and digital as though it is something in the future, but it’s here already’ (EM). An AP participant illustrated this acceleration: ‘At our world cup in 2010 not a single photograph was taken on an iPhone’ (AP).

All participants realised that ‘machine learning will also start encroaching on the world of CAs’ (EM) as ‘a lot of work’ (EM) usually done by CAs is already automated, and the trend will continue. Birt et al. (2017) report that accounting functions have been impacted by automation offered by machine learning systems; and businesses are increasingly leveraging robot/bot-technologies to perform calculations and data analysis. Some participants illustrated current automation of accounting work: ‘you could have snap shots of your income statement or your financials every day’ (TE); ‘the push of a button pull[s] everything from the bank directly into a system ... capturing a bank recon one by one line item ... will disappear’ (EM).

Participants thus acknowledged that for CAs to retain relevance, their (CAs) roles need to change, ('you'll have to outsmart the machine' [EM]), which supports the view of Birt et al. (2017). In addition to demonstrating that CAs still 'have a strong understanding of finance, accounting and reporting ... and risk and governance' (EM), they must also have 'the ability to assimilate information', be 'future oriented', 'understand data, trends and themes', and be able to 'digest that [data analysis] to help an organisation navigate through complexities in businesses' (EM). Emphasis will increasingly be on an ability 'to still interpret that [information] and then explain [it] to people' to influence their decision-making (EM). A CA needs to become more strategic (EM), he/she has to 'help people look at the complexities and simplify them', to inform decision-makers on 'taking that [business] forward' (EM). This corresponds with recent professional literature claiming that new data sources and analysis methods, and cognitive computing, will assist accountants to interpret information and influence others more effectively (e.g., CGMA, 2018a). Another EM participant linked CAs' knowledge of 'financial data and the importance of historical data' with newer skills to get 'the history [to] tell us about the future' and analyse its implications for the future. CAs will be key 'to get the systems in place ... make sure the system generates the correct data in the correct format and according to the correct legislation, and then from there the CAs will be used to interpret that information in making decisions' (EM).

Theme 2: Technologies impacting the work of CAs

The second theme emerging from the data relates to technologies impacting the work of CAs, such as cloud computing, robotics, AI, bitcoin and crypto currencies. These technologies are all related through their reliance on big data. The following discussion highlights participants' views.

A futurist participant observed that 'financial data is arguably the most important data in the business ... it is the data that tells you that the other data is correct' and therefore 'CA's of the future should be extending themselves beyond the financials sphere'. This participant viewed CAs as 'data scientists within the business', the 'custodians of the data, [and] data integrity, and also making sense of the data' (F). An EM participant believed that CAs are 'technically very strong' and when they 'can use exponential technologies to do scenarios' they will be able to 'guide the [direction] of business', thereby adding value and influencing decision-making (EM). Accountants, already well-positioned to analyse financial data, are, as automation increases, expected to analyse data with greater insight and understanding (Borthick and Pennington, 2017).

Use of cloud computing (especially its ability to make vast quantities of data readily accessible) has become common in business and gives accountants the 'horsepower they need to crunch data with cognitive tools' (Kokina and Davenport, 2017:116). Nevertheless, cloud computing highlights the need to address 'how data will be maintained, how regulations of different jurisdictions will be followed and how infringements will be prevented and detected' (AP). An EM participant illustrated the pervasiveness of cloud computing, pointing out that 'when you are on your phone right now you are in the cloud ... every website you visit, everything you do ... you have given me access [to your data] ... by actually just logging into my Wi-Fi.' (EM).

Kokina and Davenport (2017) believe the accounting function is likely to be enhanced rather than replaced by technology. While a few participants were more pessimistic about the future of CAs, most participants were optimistic. They recognised that robotics is already impacting CAs' work, taking 'hours out of an accountant's day' (TE). However, robotics is not seen as a long term solution, but rather a short term solution as '... it is helping bridge the gap until you get to the bigger block chain' (TE). Thus, 'an accountant that has to [consolidate] information from five or six different places' can ... 'click a button and the robot does that in two seconds now, where it used to take the guy three, four hours' (EM). There was consensus that 'from an accounting perspective the bookkeeping angle is a good place for AI' (F). Participants thus believed that AI, 'when we tell machines what we would have done, and then the machines just copy us' (F), has the potential to disrupt CAs' work, especially 'where things ...are run on specific rules' (F). According to Bellman and Göransson (2019), the technology is in place, but businesses still need to increase the functionality of these advances within AI to effect a complete digital disruption.

Some participants believed that 'blockchain will become more relevant' (TE), a notion which agrees with the literature (Dai and Vasarhelyi, 2017). A ME participant believed blockchain 'will evolve' and be used in a 'different form, eventually, that will be more regulated than what it is allowed currently' (ME). A participant illustrated the wide applicability of blockchain, thus: 'title deeds, property ownership, all of that stuff will be done by blockchain where you can't really fool the system. If it says you own it, you own it ... [Department of] Home Affairs, passports, all of that stuff is going to land up on blockchain technology' (ME). Furthermore, 'in a world where machines talk to machines

you need new programmable and automatable money' (EM). And this paves the way for the general use of crypto currencies as 'the technology is there; ... and if crypto currencies replace currencies it will have a significant impact on business and the work of CAs (AP).

Theme 3: Digital skills for CAs

The third theme, i.e. the digital skills CAs require, is closely related to themes 1 and 2. In general, participants supported the following comment: 'The skillset of the CA has probably [be]come narrower compared to what the business environment today demands' (AP). There is growing demand for accountants with advanced technology knowledge and skills (Birt et al. 2017) and analytical skills (Huerta and Jensen, 2017). Even at entry-level, employers now demand that their accountants have analytical skills (Borthick and Pennington, 2017). Digital skills enable CAs to move outside of their traditional functions and deal with data, using modelling and coding skills. In the context of lifelong learning, such foundational skills will facilitate the mastering of new technologies that are still in development within businesses (Bellman and Göransson, 2019; Dai and Vasarhelyi, 2017). Prior studies show that accountants are already using advanced technology and data analytic skills (e.g., Pan and Seow, 2016; Sledgianowski, Gomaa and Tan, 2017). Participants' views on digital skills for CAs are summarised in Table 2.

Table 2: Digital skills for CAs

Skill	Participants' views – illustrative and representative quotes
Dealing with data, analysis, interpretation and visualization	<p>'[It] deals with the whole way that you access data, process data, analyse data and make decisions around that' (EM).</p> <p>'Understanding what's meta/big data ... you must define all those things, but with a relevant practical understanding of the business' (EM).</p> <p>'You've [a CA] got to be able and proficient and comfortable with big volumes of data. So you need to understand how to look at all those data and analyse it, interpret it, make best use of it' (TE).</p> <p>'It's identifying patterns and correlations in data and why they produce these particular patterns' (TE).</p> <p>'It is what you do with that information ... [identifying] data correlations and patterns and process flows is going to be an important skill rather than simply running an analytic' (AP).</p> <p>'The use of data, data analytics ... all of these kind of concepts need to be understood by a CA' (ME).</p> <p>'I take History for example: anything that you want to know you can Google within a couple of seconds, but it's analysing historical events which lead to a certain outcome. So if you take that, you can apply that to anything: so analyzing is more important ... critical thinking and analytics they go hand in hand' (EM).</p> <p>'CAs in the team could focus on financial analyses, business case development, creating tools for the rest of the finance team' (AP).</p> <p>'Data visualisation, data interpretation, because that is what it is in every context of every emerging technology; you are going to have to understand that' (TE).</p>
Modelling skills	<p>'The other one [skill] is stats, you know; so regression analysis is actually a lot of AI. AI is actually just the clustering of data. How is that a cluster and that [is what a] programme does, but's actually you would then want to know its correlations, to know if it's relevant or not' (TE).</p> <p>'It's up to a CA to define what analytic model should look like and it's up to a machine to punch out that model in a matter of seconds' (EM).</p> <p>'Predictive behavior of impairments and the impact on the bottom line and the ability to model so that we can manage our risks better, so risk management is also a big piece that CAs now need to consider' (EM).</p> <p>'I think that CAs need to have the competency to understand what algorithms are doing which are most likely written in Python and R' (TE).</p> <p>'A mathematical piece ... how do you interpret and use data more is having maths skills, and again it doesn't need to be proficient at an algorithm or what kind of maths but it's almost like a language ... how do I interpret that and giving me the skill to do that' (TE).</p>

Coding skills	<p>'I think if a CA qualifies and cannot do basic coding - I don't think that CA should qualify' (AP).</p> <p>'[Understanding] Python, R, (capital R) which is a language; those are both data science languages' (TE).</p> <p>'The coding that I talk about is not going to write new computer games (which is the most complex coding); I am talking about being able to build business queries, being able to go into a data base, take a data set, write a basic piece of code to analyse that data properly, to understand why has our sales changed. I've got the answer and then the CA can then contribute to say, operationally, this is what I am seeing in the data; financially, that is what I am seeing in the data: let's bring the two together' (AP).</p>
Technologies: - Cloud computing	<p>'I would encourage at least an understanding of cloud computing' (ME).</p> <p>'Ask the right questions about cyber and its risks ... securing data, cyber security, POPI, all of these kind[s] of concepts need to be understood by a CA' (ME).</p>
- Robotics	<p>'We are recruiting people who don't come with auditing background, to help us understand the technology. So I think this is where it's going to go. The specialisations are going to come in, data specialisations, analytics specialisations, how to get data visualisation, robotics, understanding the application of technologies, that's where the world is going to go' (EM).</p>
- AI	<p>'AI is statistical data clustering ... I've got to know just a bit about the statistical correlation' (TE).</p> <p>'AI capabilities or big data and all of that - we are going to have to refine our own skills around and understanding our confidence around these systems' (AP).</p>
- Blockchain	<p>'To teach somebody a specific technology - within three to four years that technology is gone already. By the time we come with somebody's learned technology now (and it will be blockchain in a few years' time, and it's completely different technology) but just the concept of technology and what it does and I think that is more important' (AP).</p>
- Visualisation	<p>'If we have a look at our analytics, one of the things that we've realised is the importance of visualisation and trying to visualise patterns that identifies your exceptions or your issues. ... [B]ecause of the proliferation of data people can get stuck into the numbers and Excel spread sheets longer than this table, but you somehow got to present that visually in a way that people understand – ok there is a problem: let me go down there and I can drill down into the data. So the visualisation is such an important part of analytics' (AP).</p>
Digital mindset	<p>'We've got to somehow give them the skills to manage the complexity and the rapid movement in knowledge and how things are done. Now what is that? I don't know what it is. It's not just IT skills, it's a mindset skill' (OPF).</p> <p>'Future CAs ...will have to think differently and display a different mindset. They need to have first, a basic understanding of operating systems; second, data science; third, know how to work with structured and unstructured data (weed out outliers), and fourth, AI (AP).</p>

CONCLUSION

This study set out to determine the digital skills that CAs need in order to remain fit for Industry 4.0. This paper includes a discussion of the changing role of CAs and the impact of technology in the world of work. The findings of the study are supported by the literature in identifying that future CAs will need an expanding bouquet of digital skills to remain relevant. As the OPF respondent quoted immediately above has noted, the specific technical skills might not be as important as the mindset that fully embraces lifelong learning as its fundamental position.

This research has significantly contributed to the development of a revised curriculum for SAICA, as it provides guidance for developing CAs, which will be used to inform both the academic programme and the training programme (formal learnership period).

Whilst the study is not without limitations, it does provide a platform for future research, with possibly the most important direction being how these skills should be developed at university and during the formal training contract period, and tested in professional examinations.

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THE IMPORTANCE OF CAREER GUIDANCE

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“When I was in Grade 10, I was an average student getting 50%-60% in most of my subjects. The first task we did in this career guidance programme was vision boards, designing our future and career. Because I know the kind of future I want, I started getting over 80% in my subjects. Through this task, career guidance and leadership activities, I’m currently the vice secretary of an organization here at Wits.”

– Faith Moruti, 3rd year student, BSC Computer Science.

Career guidance is one of the most underrated aspects of education and yet it has significant impact on the kind of youth we are breeding and workforce we are creating to ensure it is fit for our economic needs. We have to delve deeper into what career guidance really is to understand that the process creates youth that are tertiary ready, work ready and able to manage themselves.

As Nzalo Careers, we recently ran a project in one of the country’s rural areas and we had to design what that programme would look like. With our ethos being “designing fit for purpose interventions,” we knew that that we had to start off with self-awareness activities before diving into what subjects or careers to choose. There was a big debate that the self-awareness sessions are a waste of time and we should just focus on subjects and careers available. This debate made me realise that there is a misconception of what career guidance is and perhaps, if we relook this, we would have youth that study to acquire qualifications they can enjoy, make a career out of even in this high unemployment rate.

When I was young, I was good with people. I loved solving social problems because I had a knack for people behaviour. This is something that came naturally to me. But I unfortunately did not receive career guidance that made me aware of these skills, and how I could create a career out of it, so I chose to do IT programming. I was miserable and failed that year. After a lot of failures due to lack of awareness, I finally came across a course that spoke to the skills and interests I had from high school.

My own story highlights the need for proper career guidance. When done right, this process should be able to transfer skills to a learner and help them connect their interests, skills, strength, etc. to desirable careers, and then be assist them with choosing their preferred choice.

In addition to this, the process should start from an early age to avoid stress and confusion. The consequences of not starting early can inculcate habits that are not conducive to them becoming the best they can be. The full process when done well, should have the following benefits to name a few:

- Self-awareness
- Confidence
- Decision making
- Research
- Social awareness

“Begin with the end in mind” is a quote I heard often from our high school principal. This process ignites passion, drive and focus for a learner to push for academic excellence and personal mastery to achieve their desired end in mind.

At the rate our world is transforming, learners have too many choices in front of them and I cannot think of anything more confusing and stressful than choosing a career, especially if they lack self-awareness. When conducting careers

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guidance sessions, it is important to gauge where learners are before and after the session. This helps to assess the impact and improve interventions.

From our experience, what learners feel before we conduct our session is mostly confusion, nervous, stress and other related feelings but after the sessions we get feedback relates to feelings of calm, confidence, “I know how to manoeuvre my options”, understanding academic performance vs career options, etc. This process should allow learners to have even more questions as the process of self-awareness and career choice requires a lot of self-introspection.

It is our belief that career guidance should be a continuous intervention throughout high school and tertiary education as decisions you make at these stages have lifelong implications. To ensure the process really works, we passionate teachers guiding this process. For a well-rounded learner transitioning to a professional, we cannot afford to neglect the full process of career guidance.

