

Preparing students for the future workplace: how online teaching and learning during the COVID-19 pandemic hone required transferable skills

Preparing students for the future workplace

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Abstract

Purpose – Skilled graduates delivered through vocational programmes are critical to ensure the future growth of emerging economies. This study explored students' reflections and experiences of online teaching and learning (T&L) during the COVID-19 pandemic in South Africa. The study specifically focused on the transferable skills students acquired and their relevance to working in the local retail and hospitality industries.

Design/methodology/approach – Following a case study research design, this study retrospectively delved into the multi-perspectives of students enrolled in vocational programmes. A total of 145 students completed reflective questions via a Qualtrics link regarding the topic in question. Student reflections were grouped and analysed for recurring themes using Atlas.ti. Through thematic analysis, two topical themes emerged related to transferable skills development and the usefulness of skills for future work.

Findings – The findings suggest that although students had to rely on online classes during the COVID-19 pandemic, they still developed vital transferable skills, including communication, teamwork, organisational, self-management, flexibility, technology, metacognition and problem-solving.

Practical implications – The findings offer valuable input into planning and developing student-centric online courses to facilitate the development of desired transferable skills. Findings could also guide best T&L practices regarding how education and training across digital platforms could be used to ensure that graduates are prepared to navigate the future complexities of working in ever-changing globalised industries.

Originality/value – This study provides new insights into the evolution of T&L and how unexpected situations could provide an opportunity to hone desired skills and prepare students for employment and the 21st century workplace.

Keywords Transferable skills, Online teaching and learning, COVID-19 pandemic, Industry-ready, Vocational programmes

Paper type Research paper

Introduction

Graduates from vocational programmes require a broad range of 21st-century skills to thrive in their future workplace (Papier, 2021). Twenty-first century skills, also referred to as transferable-, employability- or cross-disciplinary skills, constitute a broad range of

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competencies related to work habits, personal qualities, ways of thinking, technology and learning (McGunagle and Zizka, 2020). Graduates with the required transferable skills (the term used for this paper) are more employable and expected to excel in the 21st century workplace and Industry 4.0 (Rakowska and de Juana-Espinosa, 2021; Li, 2022).

The employability of graduates from vocational programmes such as clothing retail, food retail and hospitality management has become an important matter for industry and higher education institutions (HEIs) (W and R Seta, 2020), especially in emerging economies such as South Africa, where the official unemployment rate (32.9%) is among the highest in the world (StatsSA, 2023). Therefore, to remain competitive, employing graduates with the proper knowledge and skills to function in unpredictable and uncertain environments, such as the retail and hospitality industries, is vital (Römgens *et al.*, 2020). Although these industries contribute significantly to the South African economy (W and R Seta, 2020), they have experienced major challenges following the widespread political unrest during mid-2021, the ongoing South African energy crisis or national blackouts of electricity supply, and the lasting economic repercussions of the COVID-19 pandemic. In this regard, HEIs must adapt to global and local industries' needs and prepare employable graduates from vocational programmes with the necessary skills (Li, 2022; Ward *et al.*, 2021; Succi and Wieandt, 2019).

Developing transferable skills, especially those related to human-technology interaction and communication, is a vital outcome of successful vocational training to meet the demands of Industry 4.0 (Spöttl and Windelband, 2021) and, more specifically, how it will transpire in the local emerging economy. Driven by, among others, digitalisation and increased automatisisation, Industry 4.0 (in conjunction with the complexities noted above) will irreversibly shape graduates' future workplaces. Delivering employable graduates with the ability to meet critical industry needs is therefore crucial from the broader stakeholder perspective (Suleman, 2018). However, understanding students' perspectives is essential in developing appropriate student-centric vocational programmes for cultivating the required transferable skills.

During the COVID-19 pandemic, classes were adapted to an online-only format, creating doubt about whether students were developing essential transferable skills for their respective industries. Reflective learning, which evolves from an analysis of individual experiences (Reilly, 2018), is pivotal for the development of skills (Dahl *et al.*, 2018) and is often thought to be dependent on face-to-face training and practical classes that simulate real-world scenarios (Peters, 2022; Surkhali and Garbuja, 2020). Whether online teaching offers similar learning opportunities is debatable and requires scrutiny as a medium for developing transferable skills. In the African context, considerable attention is devoted to young people's perspectives and aspirations for meaningful work and lives, emphasising their lived experiences (McGrath *et al.*, 2020). Reflective learning was therefore considered an important medium for pursuing this study's objectives as students reflected on what skills they developed during their learning experience. Against this backdrop, this case study retrospectively explored students' reflections on their online T&L experience in the local South African context during the COVID-19 pandemic regarding (1) their perception of the transferable skills they obtained/developed through the online T&L experience and (2) their view of how this will benefit them in their future workplace.

Literature review

Transferable skills

Transferable skills refer to individuals' non-technical and technical skills to 'act efficiently in real-life situations' (Nägele and Stalder, 2017, p. 739). Non-technical skills, also called soft skills, comprise interpersonal skills that reflect how well we socially interact with others and intrapersonal skills that describe individual desired character traits needed to successfully

function in professional and everyday situations (Succi and Wieandt, 2019). Interpersonal skills include communication, teamwork, interprofessional collaboration, sociability, diplomacy, leadership skills and conflict management skills (Collet *et al.*, 2015). Personal attributes (non-skill-based behaviours and attitudes) include commitment, integrity, reliability, emotional intelligence, common sense, positive self-esteem, stress tolerance, flexibility, self-management and self-motivation (Wesley *et al.*, 2017). These interpersonal and intrapersonal soft skills have more to do with our inner nature than what we know; they keep developing throughout our lifetime (Succi and Wieandt, 2019). For graduates from vocational programmes, “must-have” skills are communication, diplomacy, flexibility, positive attitude and teamwork (Jacobs and Karpova, 2023; Papier, 2021).

In contrast, technical skills, also called hard skills, involve technical and digital skills and higher-order cognitive skills (Rakowska and de Juana-Espinosa, 2021). Technical and digital skills required for graduates from vocational programmes entail using information technology and mastering software programs to perform tasks (Jacobs and Karpova, 2023; Papier, 2021). Technological aptitude, using databases and software programs, as well as information management, has become essential in performing daily tasks in the business environment (Li, 2022; Sousa and Rocha, 2019). Cognitive skills are related to higher-order thinking, including critical thinking, problem-solving, decision-making, strategic thinking, creativity and meta-cognition and are highly valued in the industry (Collet *et al.*, 2015). The future workforce, irrespective of the discipline, faces rapid transformation related to industrialisation and digitalisation that will require continuous learning and adaptation. Graduates will, therefore, need to be more innovative and should be able to adapt to digitalised and remote working (Li, 2022).

Transferable skills are developed and embedded through education and training, and graduates can use them across different work contexts and positions (Nägele and Stalder, 2017). According to Yorke and Knight (2006), graduates need transferable skills to move between positions, stay relevant and be employable throughout life. Industry assessment and input are required to focus curricula on developing an appropriate mix of transferable skills (Rakowska and de Juana-Espinosa, 2021; Wesley *et al.*, 2017). Universities, government and business organisations should form an educational alliance to prepare a workforce that meets the ever-changing needs of the industry (Li, 2022).

Vocational programmes

Vocational programmes are structured to expose students to theoretical and practical classes that involve technical skills and content knowledge related to a specific trade, craft or field (Mikkonen *et al.*, 2017). The value of skills-based education and training encapsulated in vocational programmes is paramount as it trains and prepares graduates for specific positions in the industry (Mulder, 2017). Students exposed to skills-based training are prepared to enter the world of work, and their knowledge and skill levels provide a smoother transition (Bakare, 2018). Such graduates are usually competent and can start working in the industry immediately and independently (Mikkonen *et al.*, 2017; Peters, 2022). In meeting industry requirements, vocational programmes have been adjusted to include developing the required transferable skills to successfully prepare students for the workplace (Mulder, 2017).

The vocational consumer science programmes offered at the university includes clothing retail, food retail and hospitality management. The vocational elements of these programmes are presented to all students, and a combined learning approach is followed where theoretical learning is complemented by a practical component. The learning approach is underpinned by active and collaborative learning, which encourages students to take an active role in their learning and collaborate and interact with their fellow students to develop relevant skills. Practical learning includes reflection, group work, class discussions and employing guest

lectures, industry visits and compulsory experiential training or internships to foster the development of transferable skills. These programmes are continuously reviewed and adjusted to develop students' transferable skills, improving their employability. However, the sudden arrival of the COVID-19 pandemic demanded an alternative manner of approaching the training of graduates, and a shift had to be made from the traditional face-to-face teaching methods while still maintaining skills-based education and the development of transferable skills.

Online T&L and skills development

During the COVID-19 pandemic, most higher education institutions had to resort to online T&L, which significantly impacted programmes and presented new challenges in preparing students for industry (Estriegana *et al.*, 2021). Online T&L has advantages and disadvantages for both the student and the educator (Dhawan, 2020). Face-to-face training and practical classes allow students to receive hands-on training by practising and applying their skills and knowledge in a similar situation to those in the real world of work (Peters, 2022; Surkhali and Garbuja, 2020). Conversely, online-only training, in general, may present issues with students achieving and developing certain skills as they need help to execute and practice specific procedures (Surkhali and Garbuja, 2020). Not having face-to-face interactions makes gauging non-verbal behaviour and student participation challenging (Ho *et al.*, 2023). Interaction and two-way communication are essential during skills development and may be challenging to implement in online-only teaching. During online-only instruction, students do not get the opportunity to learn from each other and practice what they are learning as the teaching process becomes theoretical and many times relinquishes the development of skills and competencies. Therefore, online courses must be interactive (Dhawan, 2020). Online T&L, however, provides a planned learning environment with interactive and collaborative possibilities using different technological devices, autonomy in learning and use of multimedia options (e.g. watching videos illustrating practical skills) (Sousa and Rocha, 2019).

Many higher education institutions that implemented home-based training and simulation of real-life situations succeeded in continuing vocational and skills-based training during COVID-19 (Gill, 2020). Despite the lack of face-to-face contact, online T&L required students to implement self-management skills, adjust to circumstances and engage actively in learning, thereby developing essential transferable skills (Han *et al.*, 2020). Additionally, it provided greater flexibility and innovative and creative thinking and the potential to increase students' learning potential (Dhawan, 2020).

Online-only T&L of theory and practical classes was introduced to limit the loss of education time and gaps in student training in the department. Following an online learning approach during COVID-19 allowed for a combination of synchronous (learning together in real-time, e.g. online classes) and asynchronous learning (learning at own pace, listening to recordings). This differed slightly from the pre-COVID T&L approach, where learning often reflected a more synchronous approach.

Reflective learning

Reflective learning, in essence, is "analysing one's own life experiences" (Reilly, 2018, p. 129). Reflective learning involves a circular process of action followed by reflection, which includes the practice of inquiry about what we do and learning from it (Bruno and Dell'Aversana, 2018). Focussing on learning from experience has become vital for educators to hone higher-order thinking skills such as critical thinking and problem-solving (Dahl *et al.*, 2018). Especially in challenging learning environments, such as the COVID-19 pandemic, reflective learning practice can be valuable to understanding the development of knowledge and skills

that invariably prepare students for dynamic and unpredictable industries (Bruno and Dell'Aversana, 2018).

Modes often used in reflective practice/learning are reflective journals or essays, which help students develop insight into their personal and professional learning (Cathro *et al.*, 2017). Students are typically asked to write about various aspects of their experiences over a specific period to understand better what they have learned (Reilly, 2018). These journals or essays can be subjected to assessment and are valuable tools for educators to gain insights into what students found helpful in terms of their learning experiences (Cathro *et al.*, 2017). Reflective journals and essays offer a glimpse of how students make sense of the T&L experience, provide helpful feedback on course delivery, and how courses can be improved to ensure a better learning environment (Perusso *et al.*, 2020).

Interaction (i.e. lecturer-to-student and peer-to-peer interaction) is an important condition for reflective learning as students learn from and reflect on this type of interaction (Dahl *et al.*, 2018). However, during the COVID-19 pandemic, lecturer-to-student and peer-to-peer interaction shifted to the online platform Blackboard Collaborate. To grasp what students have learned and the skills they developed, they must first participate in meaningful learning activities and then reflect on what they are doing (Estriengana *et al.*, 2021). Consequently, the need arose to gain insight into students' perception of their T&L experience during the COVID-19 pandemic and to determine if they developed the necessary transferable skills to prepare them for the workplace.

Method

Research design and approach

This study adopted a case study research design, as it enabled the exploration of a single event in its real-life context or setting (Priya, 2021). A case study is defined as "a qualitative design in which the researcher explores in-depth a programme, event, activity, process or one or more individuals" (Creswell and Creswell, 2018, p. 247). The case study design facilitated an investigation of students in consumer science vocational programmes and their T&L experiences during the COVID-19 pandemic. The exploratory scope of this case study focused on students' perception of the transferable skills they obtained/developed through their online T&L experience and their view of how these skills will benefit them in their future workplace.

Sample and use of Blackboard Learn

This study employed a purposive sampling approach which prioritised participants with experience of the situation. To be included, the sampling unit had to adhere to pre-specified criteria (Kumar, 2019): the students had to be enrolled in one of the three consumer science vocational programmes (i.e. clothing retail, food retail and hospitality management) offered at the university and had to have experienced online T&L during the COVID-19 pandemic.

For the online T&L, all three programmes extensively utilised Blackboard Learn during the COVID-19 pandemic. Blackboard Learn is a renowned learning management system (LMS) that has served educational institutions worldwide since 2007 (Baburajan *et al.*, 2019). T&L activities hosted by this LMS included: (1) online theory classes, simulated practical scenarios and guest lectures/industry experts via the collaborate tool, (2) assessments (tests, quizzes, assignments and exams), (3) interactive discussions on the discussion board tool and (4) results (grade book). In addition, the LMS was used for announcements, sending emails and general module administration, such as the study guide, lecture notes and the semester program. Using a LMS platform such as Blackboard

Learn was beneficial as sessions such as online classes could be recorded and downloaded for viewing later. It was believed that the T&L activities allowed for both synchronous and asynchronous learning.

Data collection and analysis

Ethical clearance was obtained from the university’s ethics committee before data collection started. At the end of the 2020 academic year, an electronic link to reflective questions was distributed via email and “WhatsApp” to all students enrolled in the three vocational programmes. A consent form with a description of the purpose of the study and instructions accompanied the link. Students had two weeks to complete the reflective questions about their online T&L experience. The open-ended questions were formulated so students could extensively elaborate on their online T&L experience.

A total of 145 students completed the questions. Students’ reflections were grouped and analysed for recurring themes. Data analysis involved two coding cycles using the data analysis tool Atlas.ti. Three coders took part in the data analysis. The initial coding frame used during the first coding cycle was developed using *a priori* codes from the literature. During the coding process, new codes were added by the coders. After the first coding cycle, the coders evaluated and discussed the codes. During this process, some codes were merged or renamed and new codes were added to the initial coding frame. The meaning of certain codes was debated until consensus was reached and all coders agreed on the codes and their meanings. With thematic data analysis, key themes and sub-themes emerged and were interpreted to make sense of the data. After that the data underwent a second coding cycle and themes were reviewed to promote researcher reflexivity (Cofie *et al.*, 2022). To evaluate the quality of the data analysis and report on intercoder reliability a recently developed checklist by Cofie *et al.* (2022) was used (Table 1).

Aspects of intercoder reliability	Present	Justification (if “no”)
There was a minimum of two coders	Yes	
At least one coder was more removed from data collection (to address bias)	Yes	
At least one coder had the expertise and previous experience with coding qualitative data	Yes	
If there were multiple participant groups, a minimum of two researchers (coders) coded transcripts from each participant group	Yes	
The coders used the same framework for analysis (e.g. inductive, deductive, abductive)	Yes	
Coders focused on the shared meaning of *codes through dialogue and consensus	Yes	
Another coder with expertise in qualitative methods was consulted to resolve outstanding conflicts	No	No unresolved conflicts with the coding frame occurred
Coder consensus resulted in a codebook** that was applied when coding the remaining transcripts	Yes	

Note(s): *The code names do not have to be identical, but the meaning of the codes must be the same
 **In inductive and abductive analyses, coding can be an iterative process; therefore, new codes may be added to the codebook until code saturation is reached

Source(s): Adapted from Cofie *et al.* (2022)

Table 1.
Intercoder reliability checklist

Results

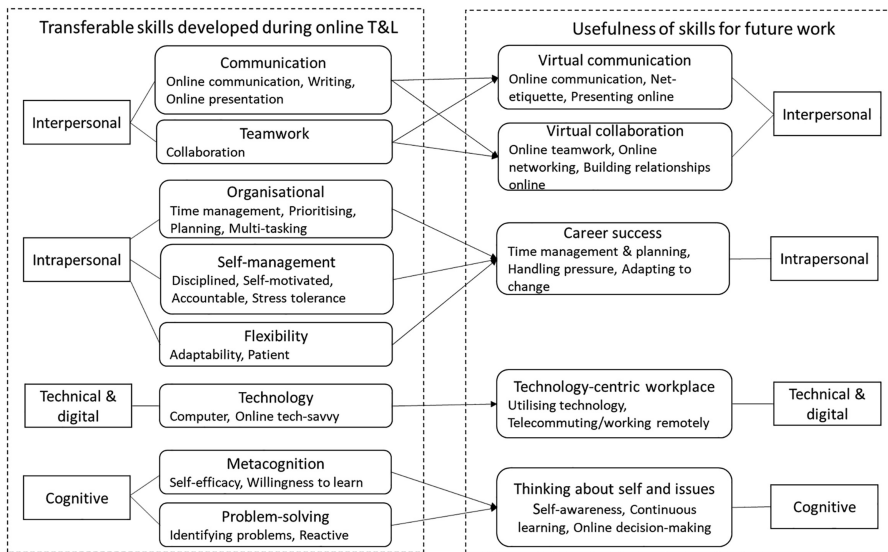
Sample characteristics

The sample included a predominant female enrolment, which is attributed to the fact that these programs are still strongly associated with their predecessor degree program, which was Home Economics. Global studies also confirmed that vocational programs offered in consumer science attract more females (Carter, 2015). The student sample was aged between 18 and 22 years as first- to fourth-year students participated in the study. The sample consisted of 7.69% male and 92.31% female students.

Transferable skills developed during online T&L

Two overarching areas emerged from the thematic data analysis process: (1) *Transferable skills developed during online T&L* and (2) *Usefulness of skills for future work*. Each overarching area consisted of various themes and sub-themes. The areas, themes and sub-themes are summarised and visually presented in Figure 1.

Communication and teamwork. The interpersonal skills students mentioned they developed were *communication* and *teamwork*. Participants noted that their online *communication* skills significantly improved during the online T&L experience: “I also learned how to communicate with people electronically and not get frustrated” (P82). They mentioned learning how to communicate better through different digital platforms, WhatsApp groups and email: “I also believe I [have] learned more about communication through different platforms, for example, email and discussion boards” (P74). Other communication skills they obtained were writing skills. Specifically, how to compile professional emails, create content on computer programs and type faster. Comments included: “How to communicate through email professionally” (P22), “developing a skill to type faster on a computer and learning new ways to communicate with lecturers and also learning how to work in applications such as MSWord and PowerPoint” (P16). Participants mentioned gaining more confidence in presenting online: “I could never listen to my voice on



Source(s): Created by authors

Figure 1. Skills developed during online T&L experience and the usefulness of skills for future work

recordings, but after having all classes online, I overcame my fear of speaking in front of many people online” (P25).

Working online with other students honed collaboration and relationship-building skills related to *teamwork*. Participants explained: “I believe that I have learnt valuable skills in terms of how to successfully work together in teams online, which will help me in the future” (P40). In addition, it also made them aware of how to be courteous and respectful when working/collaborating online: “Some skills learnt during this online learning time was the etiquette associated with collaboration online which I would have perhaps not learnt if I wasn’t exposed to online learning” (P40).

Organisational, self-management and flexibility. The intrapersonal skills participants obtained during their online T&L experience related to *organisational, self-management and flexibility*. Under *organisational skills*, participants stipulated that they developed skills related to time management, prioritising, planning and multitasking. Learning how to use your time effectively and productively was an organisational skill acknowledged by an overwhelming number of participants. Comments included, “To manage my time and not leave everything till the last minute” (P51) and “I have learnt to manage my time wisely and to always stay up-to-date so that I do not miss important tasks” (P32). Being able to plan and prioritise tasks was seen by participants as valuable skills they gained through the online T&L experience: “I also learned that I function best if I create a routine for myself and create to-do lists, to feel as if I am being productive. This meant that I was well prepared” (P45). Participants realised their multi-tasking ability improved as they were confined to a single study-learning space, “Everything mostly happens at one place – my desk” (P94) and “I can juggle a lot of tasks at the same time” (P23). In the end, good organisational skills were vital to help students cope with uncertainty, workload, responsibilities and pressure:

It has taught me to be more organised as I can rearrange my week to suit me better, as well as attempt to complete assignments well in advance of their due dates so that I do not fall under pressure. (P67)

My organisational skills improved as I had to stay on top as there was so much going on. (P31)

The *self-management* theme evolved as participants articulated the personal skills they obtained, such as being disciplined, self-motivated, accountable and stress-tolerant. Participants repeatedly stated that they became more disciplined as they had to control their home lives during COVID-19, study practices and learning environment from one place: “I have gained discipline to wake up early and get my work done and handed in on time because studying or learning at home online can be a little bit tiring” (P76). Many participants explained that they learned how to “self-start” and “stay focused” without pressure from others: “Having to keep myself working even when I don’t want to, especially when it is easy not to do work at home” (P60). Being accountable for your work and projects were highlighted as an essential skill gained by many participants: “It’s all up to you to get your projects done and to be successful in everything you do” (P19). Participants gained the ability to withstand and absorb the pressure experienced with the new way of learning and the uncertainty of the COVID-19 pandemic. Comments included “I was able to get more rest and stay calm” (P48), “learning to cope under immense pressure” (P140) and “endurance to keep on pushing despite other factors and stresses” (P114). Various participants noted that creating a routine helped them to be more disciplined, self-motivated, accountable and stress-tolerant:

It is so easy to fall behind, so one thing that I did gain was knowing that the responsibility is on me to start working, and I also realised that it is much easier if you stick to a routine that fits you best. (P80)

Participants consistently mentioned that online T&L helped them to enhance their *flexibility skills*. Being able to adjust to new situations and accepting situations out of their control was highlighted by participants:

I learned how to adapt and improvise under the given circumstances. Sometimes a situation is out of your control, and you must be able to adapt otherwise you'll fall behind, and the situation can become tough. (P143)

Learning to be patient was articulated as well by participants. Participants stated they learned to wait things out and accept changes and situations without being annoyed: "I had to become more patient, otherwise risk getting frustrated every single day, which is not constructive behaviour" (P46).

Technology. Almost all the participants mentioned obtaining technical and digital skills related to using and relying on technology more than with hybrid teaching models. *Technology* skills included computer skills (i.e. using computer programs/software, e.g. Microsoft Office, Adobe Illustrator, Photoshop and functions on laptop/pc). Participants reiterated: "I learned a lot more technical skills in terms of navigating Microsoft" (P49) and "I've become smarter with using computer shortcuts and particular programs" (P62). The technology theme is also related to online tech-savvy (i.e. utilising and operating different digital/online platforms, e.g. Google, Zoom, Teams, Blackboard, etc.). Participants explained that because of the online T&L experience, they are now more online tech-savvy: "Becoming familiar with various online platforms, as different lecturers used different approaches, meeting with group members to discuss projects, attending meetings etc." (P46). Their confidence and preference to use technology grew as one participant stated: "I have improved my technological capabilities, and I am now more comfortable working fully digitally than on paper. This makes me work faster and allows me to better organise my timetable" (P90).

Metacognition and problem-solving. *Metacognition* and *problem-solving* were cognitive skills the participants stated they developed during their online T&L experience. The *metacognition* theme relates to participants' ability to reflect on their capabilities and willingness to learn. Within metacognition, participants developed self-efficacy as they gained insight and belief into their abilities to accomplish tasks and perform: "That I am smarter than I gave myself credit for, as I was able to teach myself some of the modules" (P37). Participants revealed that they developed a willingness to learn from the online T&L experience and themselves: "I have gained so much knowledge, new skills and learned a lot more about myself during this difficult period" (P49).

Regarding *problem-solving*, students could identify problems and react to problems by finding solutions. Comments about managing crisis included: "I was put in stressful situations and needed new ways to deal with problems that came along with online learning" (P18) and "Everything is figureoutable" (P135). One participant summarised how identifying and reacting to problems unfolded for her:

An example of an application that I was forced to use and ultimately mastered was Paint [graphic editor program in Microsoft Windows] since that was the only way I could alter technical drawings as I don't have access to Adobe Illustrator all the time. This is also an example of the skill of improvising obtained to get the job done. (P94)

The usefulness of skills for future work

The students envisioned that the skills they obtained during the online T&L would be helpful and applicable in their future work for *virtual communication and -collaboration*, *career success*, *technology-centric workplace*, and *thinking and execution*.

Virtual communication. Most participants explained that online communication skills would be extremely handy as the future workplace has become dispersed and global. Students explained that online communication between colleagues, teams, departments and outside companies is the norm in most industries. The fact that they will be skilful in online communication such as drafting professional messages via email, WhatsApp groups and

online platforms (e.g. Zoom, Teams etc.) will help them to communicate efficiently and effectively with colleagues and people outside their company and across borders:

The online experience is one I think will be used quite often in the industry. One can't fly to Paris or London every time there is a meeting, and thus the online video call aspect is going to come into play a lot, so it has been good to get used to this form of interaction. (P20)

Students noted that because of the online T&L, they are now aware of net etiquette and will be much more professional in communicating with others on digital platforms. They know to use respectful and appropriate language as well as understand online protocol:

Yes, it definitely teaches you how to have online meetings, and speak online (giving everyone a chance without talking over each other). In the working environment, a lot of online communication will happen, so this did give me a feel of what it's like. (P69)

To connect with people without actually seeing them and how to treat them with respect in my typed messages. (P87)

Participants mentioned that they now have the confidence to use digital platforms to present ideas and projects to others in a work environment: "In our retail industry, I believe I will have to attend a lot of online meetings and do a lot of online presentations. We had lots of experience in this matter this year" (P72).

Virtual collaboration. Within the virtual collaboration theme, participants distinguished between collaborating with other individuals inside and outside their company. This difference emerged as two sub-themes: online teamwork and online networking. Online teamwork is linked to collaborating with colleagues or departments relying on digital platforms to communicate and complete projects/tasks. Most participants described how applicable their newly acquired communication and teamwork skills will be for online teamwork inside their company: "It helped in the sense that in the future there will be times where the people that you work with can only be contacted online, so it helped prepare you for when that time comes" (P66). Likewise, participants explained how valuable communication and teamwork skills would be for networking online with individuals outside their company, especially for collaboration over digital platforms with geographically dispersed clients, suppliers or manufacturers to save travel time and costs. Comments included: "We might have to call suppliers in China or somewhere in the world and be able to communicate through the internet" (P68) and "It taught me new ways of working in collaboration with others that are located in different parts of the world, which will mostly be the case one day in the working environment" (P25). Participants were assured that their communication and teamwork skills would help them build relationships online. Accommodating and connecting with individuals from different backgrounds and cultures was voiced as an advantage. Some participants highlighted that even in face-to-face situations, it is challenging to get to know and trust others, and they will now be able to bridge these divides and differences more easily:

I think many aspects of my future career will be online, and it is useful to know how to navigate that effectively and still be able to form working relationships even though you aren't communicating in person. (P129)

One participant summarised how online communication and teamwork would benefit them in work environments that rely on virtual communication and -collaboration:

I believe it assisted us in learning how to optimally and effectively communicate over distances. It also equipped us in socialising, resolving arguments and finding middle ground in group work over an online platform, and teaches us that this form of communication is different to that of in-person communications and requires different skills. (P74)

Career success. Many participants could foresee how organisational, self-management and flexibility skills could assist them in functioning in their careers and everyday life. They mentioned that these skills would help them to manage the demands of the workplace better and cope with responsibilities/situations in a timely and organised manner: “It will help me with getting my work done on time because I have a deadline to meet and because I’m not working alone. So if I don’t meet the deadline, then everyone doesn’t meet the deadline” (P58). Participants explained that they are better equipped to handle pressure and overcome challenges in their future work: “I think it helps us to get experience in stressful situations and how to deal with them” (P138). Similarly, participants felt they would be patient and adjust faster to new or unknown situations: “These skills will help me when working and enable me to be more flexible in my workspace, allowing me to work with more people and adapt to any situation” (P36).

Technology-centric workplace. Utilising technology unfolded for students as being proficient in using information technology, digital platforms and computer software programs to be successful in a workplace dependent on technology: “As the world is continually developing in terms of technology, this online learning experience has truly given us a taste of the future working environment” (P29). Most participants highlighted the importance of technology skills in their future place of work:

Technology continues to evolve. By the time we work in the industry, technology will play an even bigger part. I believe that this online learning experience forces us to get to know technology and grow with it. We are getting used to working on our devices every day. This will help us in the industry one day when we start working with new technology. We will not struggle to figure it out or fight against it. This experience prepares us for what is waiting for us in the future. (P27)

Technology skills were seen as the gateway to work from anywhere. Participants sensed that the future workplace is technology-led, and being skilled in technology will make it possible for them to have mobility, in essence, enabling them to telecommute or work remotely: “It makes me more tech-savvy, so I will be able to work from home if needed and have some of the necessary technical skills needed” (P104).

Thinking about self and issues. Participants reflected that having insight into their abilities and willingness to keep learning will benefit them in the future workplace. They become more self-aware and realise the importance of continuous learning:

This will assist me to enhance my strengths and work on my weaknesses in such situations as I now am aware of these strengths and weaknesses. In the working environment, unfamiliar situations will be thrown my way, and therefore the online teaching and learning experience prepared me for unfamiliarity in the future and how to handle and work around it. (P94)

Within thinking, participants noted that their problem-solving skills would be helpful for online decision-making and handling problems. Participants’ narratives included their views on how to address problems online, be creative and resourceful in approaching issues and finding workable solutions:

It teaches us to work with others in a creative manner and; also creates problem-solving skills that were previously not needed due to the pandemic. (P33)

It allowed me to experience difficulties in learning and communication and how to overcome them, which will help me going into the workplace. (P139)

Discussion

Students’ reflections on what transferable skills they developed through online T&L during the COVID-19 pandemic aligned with the skills identified as in demand for the 21st century and Industry 4.0. The findings suggest that the online T&L experience indeed honed the

transferable skills desired by the industry. Specifically, social competencies (inter- and intrapersonal), technical and digital, and cognitive competencies outlined by [Bughin et al. \(2018\)](#) to be most in demand by 2030, were developed. Transferable skills identified by participants were communication, teamwork, organisational, self-management, flexibility, technology, metacognition and problem-solving. Graduates encompassing these transferable skills are more employable and can add value to the competitive retail and service industry ([McMurray et al., 2016](#)).

Online communication and teamwork skills were developed by most participants and viewed as valuable because of globalisation and the technology-centric workplace. This corroborated findings from various studies that established communication and teamwork skills as employability skills needed for the 21st century ([Baird and Parayitam, 2019](#); [Succi and Wieandt, 2019](#)). Post-COVID T&L should, therefore, continue incorporating group work, following a combination of online team discussions and presentations (requiring the use of digital platforms) and face-to-face interaction to instil online communication and teamwork skills. These skills are pivotal in adapting to increased digitisation and the other underlying drivers of Industry 4.0 ([Spöttl and Windelband, 2021](#)). Cooperative learning is an effective strategy for developing interpersonal skills as students must do structured group work, build rapport, interact continuously and depend on each other to complete projects ([Ng and Harrison, 2021](#)).

Organisational, self-management and flexibility were critical intrapersonal skills students polished during the online T&L experience. Intrapersonal competencies are transferable skills favoured by the retail and service industries ([Jacobs and Karpova, 2019](#)). These attributes are the personal edge or advantage graduates have, making them more likely to gain employment and excel in their careers ([McMurray et al., 2016](#)). Initially, it was assumed that moving to online-only T&L would deter the development of transferable skills as students are isolated from the learning environment and left to their own devices. However, the findings corroborate [Ng and Harrison's, 2021](#) findings that the uncertainty and stressful conditions created by the COVID-19 pandemic refined students' management and coping skills. Additionally, participants envisioned that these intrapersonal skills would work to their advantage in their careers, especially in time management, handling pressure and crisis and adapting to change. Given the complexities and challenges encountered in the local South African context, these skills may be of particular relevance. It is recommended that current curricula should be revised to expose students to stressful situations, deadlines, planning opportunities and unexpected challenges.

Technical and digital skills were gained through relying on technology to facilitate online T&L during the COVID-19 pandemic. Students voiced this as the most vital skill they mastered. The ability to use different computer programs and online platforms to communicate, collaborate and present projects were seen to be the most useful for their future work and future Industry 4.0 demands. Technical and digital skills also top the list of essential skills for graduates in various studies ([Baird and Parayitam, 2019](#)). Participants' positive attitudes toward using technology and learning via digital platforms can be linked to their generational cohort. Generation Z, born between 1997 and 2010, are digital natives and frequent users of social media platforms ([Fietkiewicz et al., 2016](#); [Seymour, 2019](#)). However, digital fatigue and disengagement from the overuse of technology in online T&L could pose problems. Balancing online T&L with face-to-face classes and industry visits is suggested.

Higher cognitive competencies (i.e. metacognition and problem-solving) are essential to meet the demands of the ever-changing retail and service industries ([Jacobs and Karpova, 2019](#)). The findings suggest that participants enhanced these thinking skills during online T&L. Self-efficacy, willingness to learn, identification of and reaction to problems were valuable for self-awareness, continuous learning and online decision-making. Because graduates will function in industries that constantly evolve and produce new products for

new consumer markets, these cognitive skills will be a competitive advantage (Succi and Wieandt, 2019). Surprisingly, critical thinking skills were not mentioned by participants. This might be because this is usually captured in subject-based projects and learning activities. Ng and Harrison (2021) suggest the use of case studies and real-world simulations develop critical thinking skills where students are not only exposed to problem-solving (i.e. diagnosing problems, contextualising situations and identifying multiple solutions) but also analytical reasoning, assessment and interpretation of information related to realistic scenarios.

Conclusions

Although the COVID-19 pandemic happened unexpectedly, students adapted (not without some difficulty) to the online-only T&L mode. Previous exposure to hybrid and flipped classroom T&L models made the transition to online T&L smoother. Because online learning includes both unplanned (without prior stated learning outcomes) and planned (specific course outcomes) learning activities, skills can develop by default/spontaneously and consciously/intentionally (Sousa and Rocha, 2019). For example, technical and digital skills could have been honed by default due to the use of different technological devices and platforms to attend classes, complete assignments and collaborate with groups but also intentionally because of program-specific software such as Adobe Illustrator.

Similarly, the approach of online synchronous and asynchronous learning resulted in students acquiring specific soft skills such as better time management, planning, and adaptability and hard skills such as self-efficacy and self-learning. Also, the planned learning outcomes allowed for greater creativity in executing the practical component of the training, where students needed to acquire skills by performing certain practical tasks at home and sharing the experience in the form of “show and tell” online to the lecturer and other students. Such initiatives allowed the lecturer to meet the practical learning outcomes and accomplish skills development. Ultimately educators want students to learn the relevant content and have set objectives for this, but simultaneously also prepare students for the industry by instilling the transferable skills required for industry readiness.

Reflective learning was also an effective tool to uncover students’ experiences of online T&L during the COVID-19 pandemic. It helped the educators and students understand the specific context, learnings and skills development from students’ perspectives. Reflective learning is a way to uncover which skills were developed through students’ own accounts. They could reflect on the online T&L experience and pinpoint that they learned how to communicate better online, became more organised and disciplined, and better at problem-solving. Educators could apply these insights to improve online T&L delivery by having regular check-ins with students, making modules more interactive and implementing journaling. Through this reflective study, students could reflect on their journey and development. Reflective learning in itself also afforded students to develop their metacognition skills. Reflective learning is an effective strategy for enhancing self-awareness and active learning as well as generating insight into professional practice (Bruno and Dell’Aversana, 2018). The experience was a good trial run of what students could expect in their workplace. This gave them the confidence to pursue employment and how they will apply their learning and skills.

This study contributes to the debate about how to instil the right skills in graduates and prepare them for the 21st-century place of work and Industry 4.0. Hybrid T&L models that provide online and face-to-face flexibility will be the norm for future higher education (Ng and Harrison, 2021). However, the challenge for higher education is ensuring that transferable skills are developed and embedded irrespective of the T&L model. Particularly embedding transferable skills in graduates that will not become outdated and make graduates

employable and successful in the workplace (Yorke and Knight, 2006). According to McGunagle and Zizka (2020, p. 602), transferable skills should be “introduced, reinforced and mastered by the time they graduate”, which directly impacts curricula development. It is recommended that HEI start by assessing the changing skill needs of the industry before redesigning curricula to address these skills. Consulting and collaborating with the industry will ensure that the required or in-demand transferable skills are introduced into curricula. Priority skills identified by the industry should be stressed and reinforced in curricula. Following best T&L practices such as cooperative learning, active learning, case studies, real-world simulations and internships will reinforce needed transferable skills (Ng and Harrison, 2021; Power, 2012). Lastly, higher educational institutions should check if transferable skills were mastered and embedded in the end by tracing graduates in the industry. HEI could use the findings of this study to inform curricula strategies for enhancing transferable skills to prepare competitive graduates at national and global levels.

Limitations and future research

Firstly, the length and depth of the participants’ answers might have been limited due to using an online link accessed via electronic devices such as computers, laptops or cell phones. Future researchers could potentially use follow-up interviews or focus groups to probe students’ views on developing skills and their relevance for their future careers. In addition to the skills obtained through online T&L, the valuable skills of face-to-face education pre-COVID-19 should not be overlooked. Therefore, future studies could focus specifically on the practical skills, more specifically, vocational skills that students feel they lack due to the suspension of face-to-face practical classes during the COVID-19 pandemic. It might, for instance, be the lack of exposure to and experience in specific facilities or with specialised equipment. Conversely, the level of skills developed did not form part of the scope of this study. Future studies could investigate students’ level of proficiency in terms of specific transferable skills achieved through face-to-face and online T&L assessment opportunities.

It might also be worthwhile to do a follow-up study in a few years to gauge what the industry has found in terms of employees’ skills and how/if the students that entered the workforce during/after the COVID-19 pandemic are better prepared for the working environment and are therefore more employable than the graduates that entered the workforce before the COVID-19 pandemic. More specifically, future studies could track graduates of the COVID-19 pandemic in the workplace and monitor their performance. Employers of COVID-19 graduates could also be surveyed to establish their level of satisfaction with graduates’ transferable skills and if the skills acquired were captured and developed to the extent industry requires. Future research could focus on the skills that graduates might lack due to the transitional change from “contact” to “online” to “hybrid” modes of T&L at tertiary institutions in the last few years. Lastly, this study was conducted in an emerging economy where multiple aspects could play a vital role in the research outcome. Future studies could be conducted in other developing countries as well as developed countries which could provide valuable insights into the repercussions of the COVID-19 pandemic on the transferable skills that students from varying backgrounds obtained and how this relates to the South African context.

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